HEARING EXAMINER MEETING
THURSDAY, AUGUST 29, 2024 – 6:00 PM
501 DELTA AVE, MARYSVILLE, WA 98270

Williams Pointe Subdivision

AGENDA

The public hearing is a *hybrid* meeting which you are welcome to attend in-person or via Zoom. Anyone wishing to provide verbal public comment must pre-register by contacting the Project Manager listed in the item by *4PM the day prior to the meeting*. Those providing verbal public comment will need to provide their name, address, e-mail and phone number.

Join Zoom Meeting:
https://us06web.zoom.us/j/82587021221?pwd=JdUykwPXTX6kC0kMCDBvjuAJ1qikZs.1
Meeting ID: 825 8702 1221
Passcode: 533039
Phone: 253.215.8782

Call to Order

Public Hearings *NOTICE OF PUBLIC HEARING*

NOTICE IS HEREBY GIVEN that open record public hearing will be held before the Hearing Examiner on Thursday, August 29th at 6:00 PM at 501 Delta Avenue, 2nd Floor Council Chambers for the following proposal:

File Number: PA 24-014

Project Title: Williams Pointe Subdivision

Applicant: Keystone Land, LLC

Project Agent: Tom Abbott, Solid Ground Engineering 8105 166th Ave NE, Redmond, WA 98052

Project Location: 7315 44th St NE

APN(s): 30053500303600, 30053500303700, 00590700018101, 29050200200400

Project Description: The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of

44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE.

Open Record Public Hearing: The public hearing will take place in person at 501 Delta Avenue, 2nd Floor Council Chambers and via Zoom/teleconference. The Hearing Examiner and the City's project manager will attend in person; however, other staff, the applicant, and the public may attend either in person or via Zoom. Anyone wishing to provide written or verbal public comment must pre-register by the staff contact listed below by noon on ***Wednesday, August 28th****. If you wish to provide verbal public comment, you will need to provide your name, address, e-mail and phone number.*

Meeting Link: https://us06web.zoom.us/j/83916662589?pwd=4uxyrOyxzdsnFnMAOeVCvBb395ECc9.1
Passcode: 915095

To listen to the meeting without providing public comment:
Dial in: 1.253.215.8782
Meeting ID: 839 1666 2589

Document Availability: http://docs.marysvillewa.gov/htcomnet/public/?folder=74a9ab27

For Project Information:
Emily Morgan, Senior Planner - 360.363.8216 or emorgan@marysvillewa.gov

Special Accommodations: The City of Marysville strives to provide accessible meetings for people with disabilities. Please contact the City Clerk's office at (360) 363-8000 or 1-800-833-6384 (Voice Relay), 1-800-833-6388 (TDD Relay) two business days prior to the meeting date if any special accommodations are needed for this meeting.

Discussion Items

Discussion items
E001 - Land Use Application - PA24-014.pdf
E002 - Project Narrative - PA24-014.pdf
E003 - Title Report-Legal Description - PA24-014.pdf
E004 - Environmental Checklist - PA24-014.pdf
E005 - Traffic Impact Analysis - PA24-014.pdf
E006 - SnoCo Traffic Offer - PA24-014.pdf
E007 - Drainage Report - PA24-014.pdf
E008 - Critical Areas Report - PA24-014.pdf
E009 - Buffer Mitigation Planting Plan - PA24-014.pdf
E010 - Landscape Plan - PA24-014.pdf
E011 - Plat Map - PA24-014.pdf
E012 - Preliminary Civil Plans - PA24-014.pdf
E013 - Letter of Completeness - PA24-014.pdf
E014 - Notice of Application - PA24-014.pdf
E015 - Request for Review - PA24-014.pdf
E016 - Geotechnical Report - PA24-014.pdf
E017 - Affidavit of Publication - PA24-014.pdf
E018 - Affidavit of Posting - PA24-014.pdf
E019 - Technical Review Comments - PA24-014.pdf
E020 - Snohomish County Signed Traffic Offer - PA24-014.pdf

E021 - DOE Wetland Correspondence - PA24-014.pdf
E022 - Resubmittal Letter - PA24-014.pdf
E023 - Preliminary Civil Plans - PA24-014.pdf
E024 - Title Report-Legal Description - PA24-014.pdf
E025 - Wetland Report Memo - PA24-014.pdf
E026 - Technical Review Comments 2 - PA24-014.pdf
E027 - Resubmittal Letter - PA24-014.pdf
E028 - Critical Areas Report - PA24-014.pdf
E029 - Preliminary Civil Plans - PA24-014.pdf
E030 - Preliminary Site Plan - PA24-014.pdf
E031 - Concurrency Recommendation - PA24-014.pdf
E032 - Concurrency Acceptance - PA24-014.pdf
E033 - SEPA MDNS - PA24-014.pdf
E034 - Notice of SEPA MDNS - PA24-014.pdf
E035 - Notice of Public Hearing - PA24-014.pdf
E036 - Correspondence - PA24-014.pdf
E037 - Correspondence - PA24-014.pdf
E038 - Correspondence - PA24-014.pdf
E039 - Staff Recommendation - PA24-014.pdf

Agenda Bill

HEARING EXAMINER AGENDA ITEM REPORT

DATE:	August 29, 2024
SUBMITTED BY:	Marisa Nishmura, Community Development
ITEM TYPE:	Discussion Item
AGENDA SECTION:	Discussion Items
SUBJECT:	Discussion items
SUGGESTED ACTION:	
SUMMARY:	

ATTACHMENTS:

E001 - Land Use Application - PA24-014.pdf
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E016 - Geotechnical Report - PA24-014.pdf
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E018 - Affidavit of Posting - PA24-014.pdf
E019 - Technical Review Comments - PA24-014.pdf
E020 - Snohomish County Signed Traffic Offer - PA24-014.pdf
E021 - DOE Wetland Correspondence - PA24-014.pdf
E022 - Resubmittal Letter - PA24-014.pdf
E023 - Preliminary Civil Plans - PA24-014.pdf
E024 - Title Report-Legal Description - PA24-014.pdf
E025 - Wetland Report Memo - PA24-014.pdf

E026 - Technical Review Comments 2 - PA24-014.pdf
E027 - Resubmittal Letter - PA24-014.pdf
E028 - Critical Areas Report - PA24-014.pdf
E029 - Preliminary Civil Plans - PA24-014.pdf
E030 - Preliminary Site Plan - PA24-014.pdf
E031 - Concurrency Recommendation - PA24-014.pdf
E032 - Concurrency Acceptance - PA24-014.pdf
E033 - SEPA MDNS - PA24-014.pdf
E034 - Notice of SEPA MDNS - PA24-014.pdf
E035 - Notice of Public Hearing - PA24-014.pdf
E036 - Correspondence - PA24-014.pdf
E037 - Correspondence - PA24-014.pdf
E038 - Correspondence - PA24-014.pdf
E039 - Staff Recommendation - PA24-014.pdf

EST. 1891
MARYSVILLE
COMMUNITY DEVELOPMENT

MASTER LAND USE PERMIT APPLICATION

Community Development Department ◆ 501 Delta Avenue ◆ Marysville, WA 98270
Office Hours: Mon - Fri 8:00 AM - 4:30 PM ◆ Phone: (360) 363-8000

SITE INFORMATION

SITE ADDRESS: 7315 44th St NE, Marysville, WA 98270	**APN(S):** 30053500303600, 30053500303700, 00590700018101, 29050200200400
PROPOSED PROJECT NAME: Williams Pointe	**SECTION, TOWNSHIP, & RANGE:** Sec 35, T30N, R05E
LAND USE (ZONING) DESIGNATION: R-6.5	**SHORELINE ENVIRONMENT:** N/A
WATER SUPPLY **Current:** Marysville **Proposed:** Marysville	**SEWER SUPPLY** **Current:** Marysville **Proposed:** Marysville

PRESENT USE OF PROPERTY:
Vacant or Single Family Residences

PRE-APPLICATION CONFERENCE HELD? ☒ **Yes, the City file # is** PreA24-002 ☐ **No**

	PROPERTY OWNER	APPLICANT	PROJECT CONTACT
NAME	Adelfia LLC	Keystone Land, Joe Long	Tom Abbott
ADDRESS	1007 Stitch Rd	13805 Smokey Point Blvd #102	8105 166th Ave NE, #202
CITY, STATE, ZIP	Lake Stevens, WA 98258	Marysville, WA 98271	Redmond, WA 98052
PHONE	(425) 334-2056	425-268-6373	425-281-8324
E-MAIL	adelfiallc@hotmail.com	joe@cornerstonehomes.com	tabbott@solidgroundpnw.com

PROJECT INFORMATION

TYPE OF APPLICATION (Check all that apply):
***Permit type has supplemental checklist that must be submitted with Master Land Use Permit Application*

☐ Annexation Request	☐ Grading Permit	☐ SEPA Environmental Review**
☐ Binding Site Plan (Preliminary)**	☒ Major Subdivision (Preliminary)**	☐ Rezone
☐ Boundary Line Adjustment**	☐ Modification**	☐ Shoreline**
☐ Comprehensive Plan Amendment**	☐ Minor	☐ SDP Exemption
☐ Conditional Use Permit**	☐ Major	☐ Substantial Dev. Permit
☐ Critical Area Review	☐ Planned Residential Dev. (PRD)**	☐ Conditional Use Permit
☐ Final Plat Review**	☐ Site Plan Review**	☐ Variance
☐ BSP	☐ Commercial	☐ Variance**
☐ Short Plat	☐ Multifamily	☐ Wireless Communication Facility**
☐ Major Subdivision	☐ Short Plat (Preliminary)	☐ Other

LIST ANY OTHER PERMITS NEEDED (State/Federal):
NPDES, Grading Permit, Building Permits (detention and walls)

DETAILED PROJECT DESCRIPTION:
The Williams Pointe project is a 59-lot single-family residential development in Marysville, Washington. The 13.09-acre project is located at 7315 44th St NE, Marysville, WA 98270. The site consists of four tax parcels. Three of the four parcels contain existing single-family residences. One single family residence will remain (lot 50). The project intends to subdivide the land as a standard plat under R-6.5 zoning City of Marysville water and sewer mains will be extended from existing roadways. 75th Ave NE will be extended to 44th St NE, and Road A and Road B will be constructed to access the new lots. The project includes frontage improvements to 44th St NE.

I certify that I am the owner or owners authorized agent If acting as an authorized agent, I further certify that I am authorized to act as the Owners agent regarding the property at the above-referenced address for the purpose of filing applications for decision, permits, or review under the Unified Development Code and other applicable Marysville Municipal Codes and I have full power and authority to perform on behalf of the Owner all acts required to enable the City to process and review such applications.

I certify that the information on this application is true and correct and that the applicable requirements of the City of Marysville will be met. I grant permission for City employees, agents of the City and/or other agency officials to enter the subject property, if necessary, for the purpose of site inspection.

Digitally signed by Tom Abbott
DN: C=US, E=tabbott@solidgroundpnw.com, O=Solid Ground Engineering, OU=Engineering, CN=Tom Abbott
Location: Redmond, WA
Reason: I am approving this document
Date: 2024.04.29 11:01:30-07'00'

4/29/24

Owner/Owner's Authorized Agent **Date**

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052
Office: 425.305.5104

April 29, 2024

City of Marysville
Community Development Department
501 Delta Avenue
Marysville, WA 98270
(360) 363-8000

Williams Pointe
Project Narrative for Preliminary Plat

Project Overview
The Williams Pointe project is a 59-lot single-family residential development in Marysville, Washington. The 13.09-acre project is located at 7315 44th St NE, Marysville, WA 98270. The site consists of four tax parcels. Three of the four parcels contain existing single-family residences. The project intends to subdivide the land as a standard plat under R-6.5 zoning. As the site is encumbered by wetlands on the area containing lots 1-47, this area is proposed to utilize R-8 dimensional standards. The portion south of 44th St NE proposing lots 48-59 will propose utilizing R-6.5 dimensional standards as this area is not encumbered with critical areas. Frontage improvements along 44th Ave NE will be constructed, as will the extension and connection of 75th Ave NE to 44th St NE. Three existing single family residences are located on the project site. Two will be demolished while the one located on parcel #29050200200400 will remain (proposed as lot 50). The following narrative includes information about the project.

Property Address: 7315 44th St NE, Marysville, WA 98270
Tax Parcel Numbers: 30053500303600, 30053500303700, 00590700018101, 29050200200400
Property Zoning: R-6.5
Property Area: 13.09 acres
Proposed Residential Units: 59 total
Project Use: Single-family residential

Site Description
The project site is made up of four tax parcels within the City of Marysville. Three of the parcels contain existing single-family residences, while one is undeveloped. Most of the site contains tree growth, while the areas near the houses were cleared and contained grass coverage. Site topography of the larger portion of the site north of 44th St NE consists of generally flat slopes descending to the west-southwest. The smaller portion of the site south of 44th St NE slopes gently to the east. There is a large wetland on the western portion of the main project site.

The development surrounding the site is:

- North: Sunnyside West and Jefferson Hill developments, 44th St NE ROW
- East: Single-family parcel, City of Marysville parcel
- South: 44th St NE ROW, Maplewood Crossing
- West: Single-family parcel, Maplewood Crossing

Drainage:
The proposed development's stormwater infrastructure will include catch basins and drainage pipes that collect and direct stormwater into two stormwater detention ponds. Two different threshold discharge basins are associated with the project development. 44th St NE is the basin break dividing the two basins. Stormwater from the development north of 44th St NE (Lots 1-47) will be collected and detained in a detention facility, treated, and metered out to a level spreader upgradient of the wetland buffer. This wetland drains north to a tributary stream to Jones Creek and eventually Ebey Slough. Stormwater from the development south of 44th St NE (Lots 48-59) will be collected and detained in a detention facility, treated, and metered out to the drainage swale on the south side of 44th St NE.

A detention pond with cast-in-place walls with additional sediment storage for water quality treatment (a wet pond) will detain and treat stormwater for the development north of 44th St NE. Treated stormwater will eventually drain to the adjacent wetland. A similar pond with an external proprietary cartridge treatment unit will detain and treat stormwater for the development south of 44th St NE. Treated stormwater will drain to the tributary stream of King Lake.

Water:
The City of Marysville will provide the site with water services. Individual water meters will be extended to each lot from water main extensions that will connect to the existing mains in 44th St NE. Water extensions to serve the site will include extending from the existing main in 44th St NE to 75th Ave NE at the north end of the site for looping purposes.

Sewer:
The City of Marysville will provide the site with sewer services. Individual side sewer services will be extended to each lot from main extensions. The main extension to serve the site will include the need for offsite easements across parcel #29050200206500, owned by the City of Marysville, in order to connect with a newly constructed development and sewer extension associated with it to the southwest of parcel #29050200206500. This offsite main will connect to a sewer extension recently constructed by the Maplewood Crossing project. This main extension will run north-south through the city-owned parcel and then turn east/west up 44th St NE in order to serve the project site.

Access/Streets/Parking:
For the proposed development north of 44th St NE, 75th Ave NE will be extended southward from the road stub associated with the existing development to the north down to 44th St NE. A full width ROW improvement section will be proposed where both sides of the ROW. This road will serve lots 1-47 of Williams Pointe and the existing developments to the north. The access configuration at the intersection of 44th and 75th has been designed to match a previously proposed project that was required to provide right-turn-only channelization of southbound traffic along 75th approaching the 44th/75th intersection. Limited sight distance is available along the easterly sight distance path of the 75th Ave ROW. A loop road will provide access off of 75th to the remained of the site serving lots 3-25 and 42-47.

For the proposed development south of 44th St NE, an unnamed road extension (Road B) and cul-de-sac will provide access to 44th St NE for lots 48-59. The proposed roads and access tract will be consistent with the Marysville EDDS. Off of Road B, lot 50 contains an existing home to remain. The principal structure will remain while other outbuildings, such as the existing garage, will be demolished. The project proposes to construct a garage on Lot 50 with an associated driveway leading to the garage as depicted on the preliminary plans. Along with this proposed garage, the project proposes 5' setbacks along the northerly portion of the property for the construction of the garage.

Project Density Calculations
Project density calculations are as follows:
Gross Area: 13.09 AC
Flat 20% Deduction: 2.62 AC
Net Area: 10.47 AC
Base Density: 10.47 AC x 6.5 DU/AC = 68.06 DU = 68 DU
Proposed Lots: 59

We look forward to working with you on this project. Please let us know if you have questions about the proposed submittal items.

Regards,



Tom Abbott, P.E.
Principal Civil Engineer
Solid Ground Engineering

SUBDIVISION

Issued By:

CHICAGO TITLE INSURANCE COMPANY

Guarantee/Certificate Number:

500125748c
Revision 1

CHICAGO TITLE INSURANCE COMPANY

a corporation, herein called the Company

GUARANTEES

Keystone Land LLC, a Washington limited liability company

herein called the Assured, against actual loss not exceeding the liability amount stated in Schedule A which the Assured shall sustain by reason of any incorrectness in the assurances set forth in Schedule A.

LIABILITY EXCLUSIONS AND LIMITATIONS

1. No guarantee is given nor liability assumed with respect to the identity of any party named or referred to in Schedule A or with respect to the validity, legal effect or priority of any matter shown therein.
2. The Company's liability hereunder shall be limited to the amount of actual loss sustained by the Assured because of reliance upon the assurance herein set forth, but in no event shall the Company's liability exceed the liability amount set forth in Schedule A.

Please note carefully the liability exclusions and limitations and the specific assurances afforded by this guarantee. If you wish additional liability, or assurances other than as contained herein, please contact the Company for further information as to the availability and cost.

Chicago Title Insurance Company

By:

Michael J. Nolan, President

Chicago Title Company of Washington
3002 Colby Ave., Suite 200
Everett, WA 98201

Countersigned By:

Brent Aune
Authorized Officer or Agent

Attest:

Marjorie Nemzura, Secretary

ISSUING OFFICE:
Title Officer: Builder Unit Chicago Title Company of Washington 3002 Colby Ave., Suite 200 Everett, WA 98201 Fax: (866)827-8844 Main Phone: (425)259-8223 Email: evebuilder@ctt.com

SCHEDULE A

Liability	Premium	Tax
$1,000.00	$350.00	$34.30

Effective Date: April 11, 2024 at 08:00 AM

The assurances referred to on the face page are:

That, according to those public records which, under the recording laws, impart constructive notice of matter relative to the following described property:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

Title to said real property is vested in:

Keystone Land LLC, a Washington limited liability company

subject to the matters shown below under Exceptions, which Exceptions are not necessarily shown in the order of their priority.

END OF SCHEDULE A

EXHIBIT "A"

Legal Description

For APN/Parcel ID(s): 005907-000-181-01

Parcel A, City of Marysville Boundary Line Adjustment No. BLA22-001, recorded under Auditor's File No. 202207195002 records of Snohomish County being a portion of Tract 181, Sunnyside Five Acre Tracts, according to the Plat thereof recorded in Volume 7 of Plats, Page 19 in records of Snohomish County

Situate in the County of Snohomish, State of Washington

SCHEDULE B

GENERAL EXCEPTIONS

A. Rights or claims of parties in possession, or claiming possession, not shown by the Public Records.

B. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land.

C. Easements, prescriptive rights, rights-of-way, liens or encumbrances, or claims thereof, not shown by the Public Records.

D. Any lien, or right to a lien, for contributions to employee benefit funds, or for state workers' compensation, or for services, labor, or material heretofore or hereafter furnished, all as imposed by law, and not shown by the Public Records.

E. Taxes or special assessments which are not yet payable or which are not shown as existing liens by the Public Records.

F. Any lien for service, installation, connection, maintenance, tap, capacity, or construction or similar charges for sewer, water, electricity, natural gas or other utilities, or for garbage collection and disposal not shown by the Public Records.

G. Unpatented mining claims, and all rights relating thereto.

H. Reservations and exceptions in United States Patents or in Acts authorizing the issuance thereof.

I. Indian tribal codes or regulations, Indian treaty or aboriginal rights, including easements or equitable servitudes.

J. Water rights, claims or title to water.

SCHEDULE B
(continued)

SPECIAL EXCEPTIONS

1. No search has been made as to property taxes and assessments. Property taxes and assessments will be searched upon request.

2. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Short Plat no. SP 247 96-79):

   Recording No: 8003210152

3. Reservations and recitals contained in the Deed as set forth below:

   Recording Date: March 27, 1980
   Recording No.: 8003270355

   Said document provides for, among other things, the following:
   refer to document for details

4. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

   Granted to: Public Utility District No. 1 of Snohomish County
   Purpose: Electric transmission and/or distribution line
   Recording Date: June 13, 1983
   Recording No.: 8306130111
   Affects: A portion

   Note: Contains tree removal rights

5. The effect if any of that document entitled Declaration of Covenants and the terms and conditions thereof:

   Recording Date: November 3, 1986
   Recording No.: 8611030298

   Note: Said instrument has no legal description

6. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Boundary Line Adjustment and the terms and conditions thereof: Boundary Line Adjustment :

   Recording No: 8810310026

SCHEDULE B
(continued)

7. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

   Purpose: ingress, egress and utilities
   Recording Date: March 21, 1989
   Recording No.: 8903210260

8. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Boundary Line Adjustment and the terms and conditions thereof: :

   Recording No: 9107290445

9. Covenant for Low Flow Fixtures and the terms and conditions thereof:

   Recording Date: October 23, 1992
   Recording No.: 9210230309

10. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on City of Marysville Boundary Line Adjustment Survey:

    Recording No: 200806065003

11. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, encroachments, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on survey for the City of Marysville Boundary Line Adjustment No. BLA22-001:

    Recording No: 202207195002

12. The Company's liability for this report is limited to $1,000.00. This report is based on the company's property records, and no liability is assumed for items misindexed or not indexed in the public records, or for matters which would be disclosed by an inquiry of the parties in possession or by an accurate survey or inspection of the premises. This report and the legal description given herein are based upon information supplied by the applicant as to the location and identification of the premises in question, and no liability is assumed for discrepancies resulting therefrom. This report does not represent either a commitment to insure title, an examination of, or opinion as to the sufficiency or effect of the matter shown, or an opinion as to the marketability of title to the subject premises.

END OF SCHEDULE B

MARYSVILLE COMMUNITY DEVELOPMENT

501 Delta Avenue ◆ Marysville, WA 98270
Office Hours: Mon - Fri 8:00 AM - 4:30 PM ◆ (360) 363-8000

SEPA ENVIRONMENTAL CHECKLIST
APPLICATION REVIEW

Purpose of checklist
Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization, or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants
This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. **You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown.** You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to **all parts of your proposal,** even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for lead agencies
Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals
For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B, plus the Supplemental Sheet for Nonproject Actions (Part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in "Part B: Environmental Elements" that do not contribute meaningfully to the analysis of the proposal.

Application Format
The application will only be accepted if the original form is used (with typewritten answers in the spaces provided) or the application is reproduced in identical form.

NOTE: The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. You may be asked to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Required Attachments

1. Vicinity map clearly showing the location of the project with respect to public streets and other parcels and development
2. Site plan*
3. Conceptual building elevations
4. Preliminary civil plans
5. Wetland Delineation, if applicable
6. Geotechnical Reports, if applicable
7. Critical Areas Report (fish and wildlife habitat), if applicable

**The site plan must show north arrow and engineering scale; any significant or natural features such as creeks, wetlands, steep slopes; dimensions and shape of the lot; location and size of existing and proposed buildings and development, including parking and landscape areas, adjacent streets and point of ingress and egress, and adjacent uses.*

Correspondence

Note that all correspondence regarding the environmental review of your project will be sent to the person listed as **Applicant.**

Fees

There is a nonrefundable application fee for all environmental checklists. Submit the fee with the application(s) and make checks payable to the City of Marysville. The required fees for SEPA Review may be found here: https://www.codepublishing.com/WA/Marysville/#!/Marysville22G/Marysville22G030.html#22G.030.020

Pre-Application Conference

Most projects that are not categorically exempt from SEPA will require a pre-application conference; in some cases, at the discretion of the Community Development Director, the pre-application conference may be waived. The pre-application conference must be conducted prior to the submittal of the environmental checklist.

SEPA Exempt Determinations

Projects that meet the thresholds for categorical exemptions of Chapter 22E.030 MMC are exempt from filing an environmental checklist. All other project and non-project actions require a completed environmental checklist and a project permit application to be submitted. If an applicant feels that their proposal should be considered to be SEPA-exempt, the applicant can submit a letter requesting a SEPA exempt determination with the environmental checklist and fee. The Community Development Director will review the request and if the application is determined to be SEPA exempt, a letter will be issued confirming the SEPA exempt status.

Project Phasing

The Checklist questions apply to all parts of your proposal, even if you plan to phase the project over a period of time or on different parcels of land. You must include any additional information that helps describe your proposal or its environmental effects. You may be asked to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact(s).

SEPA Appeals

Any agency or person may appeal a Determination of Non Significance (DNS) or Determination of Significance (DS) by completing and submitting an appeal form to the Hearing Examiner within fourteen (14) calendar days of the date the determination is final. Such appeals must be filed with the City Clerk. Appeals of environmental determinations under SEPA, including administrative appeals of a threshold determination, shall be heard by the Hearing Examiner and shall proceed pursuant to Chapter 22G.010 Article VIII *Appeals*. There is a nonrefundable $500 Administrative Appeal fee to be submitted with appeal.

A. Background Find help answering background questions

1. Name of proposed project, if applicable:
Williams Pointe
2. Name of applicant:
Keystone Land, LLC
3. Address and phone number of applicant and contact person:
Joe Long; 13805 Smokey Point Blvd #102 Marysville, WA 98271; cell phone: 425-268-6373
4. Date checklist prepared:
4/24/2024
5. Agency requesting checklist:
City of Marysville, WA
6. Proposed timing or schedule (including phasing, if applicable):
Construction Beginning Fall 2024 Occupancy Summer 2025
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
No
8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
Geotechnical Report by Earth Solutions NW, Critical Areas Report by Wetland Resources, Traffic Impact Analysis by Kimley Horn
9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
None
10. List any government approvals or permits that will be needed for your proposal, if known.
Preliminary Plat, Demolition Permit, Class IV Forest Practices, Grading and Clearing Permit, Right of Way / Excavation, NPDES Permit, Final Plat
11. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)
The Williams Pointe project is a 59-lot single-family residential development in Marysville, Washington. The 13.09-acre project is located at 7315 44th St NE, Marysville, WA 98270. The site consists of four tax parcels. Three of the four parcels contain existing single-family residences. One single family residence will remain (lot 50). The project intends to subdivide the land as a standard plat under R-6.5 zoning City of Marysville water and sewer mains will be extended from existing roadways. 75th Ave NE will be extended to 44th St NE, and Road A and Road B will be constructed to access the new lots. The project includes frontage improvements to 44th St NE.
12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.
Address: 7315 44th St NE, Marysville, WA 98270, Parcel Number: 30053500303600 SE¼ of the SW¼ of Sec 35, T30N, R05E Address: 7417 44TH St NE, Marysville, WA 98270, Parcel Number: 30053500303700 SE¼ of the SW¼ of Sec 35, T30N, R05E Address: will front 75th Ave, Marysville, WA 98270 extension (Address not assigned), Parcel Number: 00590700018101 SW¼ of the SE¼ of Sec 35, T30N, R05E

B. Environmental Elements

1. EARTH Find help answering earth questions
a. General description of the site, check all that apply:
☐ **Flat** ☐ **Rolling** ☒ **Hilly** ☐ **Steep Slopes** ☐ **Mountainous** ☐ **Other:**
b. What is the steepest slope on the site (approximate percent slope)?
20%+
c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them, and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.
Tokul gravelly medial loam (Soil Survey, USDA Natural Resources Conservation Service), which is composed of gravel, sand, silt, and clay. The site geotechnical document reports glacial till across the site, which is composed of gravelly, silty sand.
d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.
There are no unstable soils known in the immediate vicinity.
e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.
Rough grading of approximately 40,000 cubic yards of cut and 35,000 cubic yards of fill. This will be done in order to install the lots and improvements at grades necessary for the site to function. Fill will come from local sources.
f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
Erosion will be minimized using erosion control measures. Walls and lots with two pad elevations will be constructed to minimize the land area with a sloping surface.
g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?
The site will have 5.24 AC of impervious (approximately 40.0% of the gross site) impervious surfacing after construction of the site improvements.
h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
Erosion control measures during construction may include stockpiling cleared vegetation, silt fencing, temporary sediment ponds, intercepting swales, berms, straw bales, plastic covers, or other standard controls.
2. AIR Find help answering air questions
a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.
Anticipated emissions consist of exhaust from equipment used to construct the site. While the actual quantities are unknown, the impact is expected to be minimal at a level consistent with other vehicles operating within the neighborhood.
b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
No off-site sources of emissions or odor are anticipated.
c. Proposed measures to reduce or control emissions or other impacts to air, if any.
Construction is expected to be conducted during regular business hours, limiting the impact of emissions, odors, or noise to the time of day when many are away at work, or might expect reasonable construction activity.

3. WATER Find help answering water questions

a. Surface Water: Find help answering surface water questions

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The wetland report notes 4 separate wetlands in the vicinity of site development. Wetland A is located north of 44th St and west of lots 1-47. It is a Category II wetland with 100' buffer. Wetland B is Category III with a 75' buffer located just east of Wetland A and north of 44th St NE. Wetland C is a Category II wetland with 100' buffer and is located south of 44th St NE. Wetland D is Category III with a 75' buffer and is

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The project will require no work over or in the adjacent wetlands. However, site construction will occur within 200 feet of the wetlands. Buffer averaging of wetland buffers is proposed and detailed in the critical areas report prepared by Wetland Resources. Erosion protection measures will ensure there will be no impact to the wetlands during construction.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill or dredge material is required.

(4) Will the proposal require surface water withdrawals or diversions? Give a general description, purpose, and approximate quantities if known.

No surface water withdrawals or diversions are required.

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The proposed site is not within a 100-year floodplain.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The project will not require any discharges of waste materials to surface waters.

b. Ground Water: Find help answering ground water questions

(1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn from a well. The City of Marysville will provide water service via an extension of the city's current water infrastructure.

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material will be discharged into the ground. Domestic sewage will drain to the City of Marysville's sanitary sewer system.

c. Water Runoff (including stormwater):

(1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff on this site is primarily from rainfall. A minor amount of upstream flow (approximately 1.0 AC) adjacent to the project will be captured by the project site and routed through the easterly detention pond. The site's proposed hard surfaces are mitigated as required by the 2019 DOE stormwater manual. Runoff from roofs, roads, driveways, and walkway surfaces will be captured via downspouts, tightlines, catch

(2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste materials are expected to enter surface or ground waters on this site. No illicit discharges are allowed or expected. Water quality treatment of detained stormwater runoff is provided prior to discharge.

(3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The proposal expects to maintain existing drainage patterns. There are two threshold discharge basins that are being developed within. Lots 1-47, Road A, the 75th ROW extension and a portion of the 44th St ROW are collected, mitigated in a proposed detention pond and discharged to a threshold discharge basins that flows north and west towards Jones Creek. Lots 48-59, Road B and a portion of 44th St

(4) Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any.

This development is subject to stormwater review under 2019 Department of Ecology Storm Water Manual for Western Washington. As such, stormwater LID BMPs are evaluated on the site and are provided where feasible. No drainage patterns are expected to change.

4. PLANTS Find help answering plants questions

a. Check the types of vegetation found on the site:

- [x] Deciduous Tree: alder, maple, aspen, other
- [x] Evergreen Tree: fire, cedar, pine, other
- [x] Shrubs
- [x] Grass
- [ ] Pasture
- [ ] Crop or grain
- [ ] Orchards, vineyards, or other permanent crops
- [x] Wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
- [ ] Water plants: water lily, eelgrass, milfoil, other
- [ ] Other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Forest vegetation is to be removed from the site to include: evergreen trees, deciduous trees, and miscellaneous undergrowth.

c. List threatened and endangered species known to be on or near the site.

No threatened or endangered species are known to be on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any.

A landscape plan will be prepared for this project.

e. List all noxious weeds and invasive species known to be on or near the site.

There are no known noxious weeds or invasive species on this site.

5. ANIMALS Find help answering animal questions

a. Check any birds and other animals that have been observed on or near the site or are known to be on or near the site.

Birds:

- [ ] Hawk
- [ ] Heron
- [ ] Eagle
- [x] Songbirds
- [ ] Other:

Mammals:

- [x] Deer
- [ ] Bear
- [ ] Elk
- [ ] Beaver
- [ ] Other:

Fish:

- [ ] Bass
- [ ] Salmon
- [ ] Trout
- [ ] Herring
- [ ] Shellfish
- [ ] Other:

b. List any threatened and endangered species known to be on or near the site.

There are no known threatened or endangered species on or near the site.

c. Is the site part of a migration route? If so, explain.

All of western Washington is covered by the Pacific Flyway Migration Route. This is one of the four major North American migration routes for birds, especially waterfowl. It extends from Alaska and Canada to Mexico and South America.

d. Proposed measures to preserve or enhance wildlife, if any.

At this point in time, there are no proposed measures to preserve or enhance wildlife included in the plans of this proposal.

e. List any invasive animal species known to be on or near the site.

There are no known invasive animal species on or near the site.

6. ENERGY AND NATURAL RESOURCES Find help answering energy and natural resource questions

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Electricity will likely be used for heating, cooking, lighting, and general maintenance of homes.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No, the proposed development will not impact the potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.

At this point, no proposed energy conservation features are included in the plans for this proposal. The property owner will decide on any energy conservation features at the time of the building permit application.

7. ENVIRONMENTAL HEALTH Find help with answering environmental health questions

a. Potential Site Contamination

(1) Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur because of this proposal? If so, describe.

There are no known or possible contaminants or health hazards on site that could result from this proposal.

(2) Describe any known or possible contamination at the site from present or past uses.

There is no known or possible contamination at the site from present or past uses.

(3) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no known existing hazardous chemicals/conditions that might affect project development and design.

(4) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

There will be no toxic or hazardous chemicals that might be stored, used, or produced during the project's development, construction, or life of operation.

(5) Describe special emergency services that might be required.

Other than normal police, emergency aid, and fire protection services, no special emergency services are anticipated.

(6) Proposed measures to reduce or control environmental health hazards, if any.

There are currently no proposed measures to reduce or control environmental health hazards.

b. Noise

(1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

This project would be impacted by minimal off-site noise generated from nearby housing developments and from traffic on 44th St NE.

(2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site)?

Noise levels would be intermittently high throughout construction but should be limited to normal waking hours. These construction-related sounds will be from large machinery and ground-disturbing activities. In the long term, there will be normal daily noise associated with single-family residential developments.

(3) Proposed measures to reduce or control noise impacts, if any.

The project will adhere to City noise generation and impact limits.

8. LAND AND SHORELINE USE Find help answering land and shoreline use questions

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The project site is zoned R-6.5, with a single-family residence on three of the four parcels. The development surrounding the site is:
•North: Sunnyside West and Jefferson Hill developments, 44th St NE ROW
•East: Single-family parcel, City of Marysville parcel

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses because of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or non-forest use?

There is no evidence that the site has been used for agriculture or working forest lands.

(1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how?

The proposal should not affect or be affected by surrounding working farms or forest land. Equipment access will be via 44th St NE.

c. Describe any structures on the site.

There are three single-family houses and related outbuildings.

d. Will any structures be demolished? If so, what?

The two single-family houses and related outbuildings north of 44th St NE and the garage related to the single-family house south of 44th St NE will be demolished.

e. What is the current zoning classification of the site?

R-6.5, High-Density, Single-Family

f. What is the current comprehensive plan designation of the site?

Urban Low Residential

g. If applicable, what is the current shoreline master program designation of the site?

There is no current shoreline master program designation on the site.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The City's Critical Areas map printed in December 2019 identifies a category 3 wetland, wetland buffers, and stream buffers along the western portion of the site. The project plans reflect the wetlands and buffers identified by the site-specific critical areas report.

i. Approximately how many people would reside or work in the completed project?

At 2.53 persons per household (US Census 2021) this project would house approximately 149 people.

j. Approximately how many people would the completed project displace?

Considering the demolition of two single-family residences and assuming 2.53 people per household, approximately 5 people would be

k. Proposed measures to avoid or reduce displacement impacts, if any.

No measures are currently proposed to avoid or reduce displacement impacts. The project would provide additional housing, resulting in a net gain of approximately 144 residents.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.

The proposed project's extension of 75th Ave NE provides a connection between the development to the north and 44th St NE for traffic and pedestrian access. The City of Marysville's Comprehensive Plan identifies high-density residential housing for the parcels included in this project. The proposed project is consistent with the zoning requirements and the intent of the Comprehensive Plan designation and

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

The project is consistent with zoning requirements and is not expected to impact nearby agricultural and forest lands.

9. HOUSING Find help answering housing questions

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

The completed project will provide 59 housing units at market-value (medium income housing).

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

This project will eliminate two single-family units. One is a wood-framed house that is considered middle-income housing. The other is a

c. Proposed measures to reduce or control housing impacts, if any.

All required traffic, park, and school impact fees will be paid in full before building permits are issued for the proposed residential units.

10. AESTHETICS Find help answering aesthetics questions

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

Building height will follow the regulations for building height within the R-6.5 zone as listed in Marysville Municipal Code Chapter

b. What views in the immediate vicinity would be altered or obstructed?

There are no views in the immediate vicinity that will be altered or obstructed because of the proposed development.

c. Proposed measures to reduce or control aesthetic impacts, if any.

The observance of building setbacks, retention of as much native vegetation as practical during construction, and provision of ornamental and native landscaping would reduce the project's aesthetic impacts. Due to the presence of critical areas on the project site, much of the gross project site will be kept within protected buffers, which will provide a natural look and feel to the project and provide screening of the

11. LIGHT AND GLARE Find help answering light and glare questions

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

The proposal would produce light from automobile headlights, street, and interior lighting primarily at night

b. Could light or glare from the finished project be a safety hazard or interfere with views?

Light or glare from the finished project should not be a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

Light from surrounding residential developments and automobile traffic on 44th Ave NE will likely be the only light or glare that could potentially impact the proposed development.

d. Proposed measures to reduce or control light and glare impacts, if any.

No special measures to reduce or control light and glare impacts are proposed as they are not expected to be necessary.

12. RECREATION Find help answering recreation questions

a. What designated and informal recreational opportunities are in the immediate vicinity?

Deering Wildflower Acres is approximately 600 feet northeast of the northeast corner of the site. Verda Ridge Park is approximately 2,500 feet north of the site. Shasta Ridge Park is approximately 2,650 feet east-southeast of the site. Kiwanis Park is approximately 1,900 feet southwest of the site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

The project will not displace any existing recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any.

There are no proposed measures to reduce or control impacts on recreational opportunities, as the project will not displace any existing recreational uses.

13. HISTORIC & CULTURAL PRESERVATION Find help with historic/cultural preservation questions

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

No buildings, structures, or sites eligible for listing in the national, state, or local preservation register were found in Washington State's Department of Archaeology and Historic Preservation's WISAARD Online GIS map.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no known landmarks, features, or other evidence of Indian or historic use on site.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

The Washington Information System for Architectural and Archeological Records Data (WISAARD) online database was queried, and no records were found pertaining to the proposed site or its vicinity.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

There are no indications of historic or cultural resources on or near the site.

14. TRANSPORTATION Find help with answering transportation questions

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Both areas of this project will be accessed from 44th St NE. The northern part of the project can also be accessed from the north via 75th Ave NE.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Community Transit operates a bus line in the City of Marysville. The closest transit stop is a walking distance of approximately 2 miles towards the north.

c. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle, or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

Half-street improvements on 44th St NE are required as part of the proposed project. These improvements include half-width pavement, curb, gutter and sidewalk along 44th St NE SW and are to extend along the full frontage of the originating parcels. Full street improvements, including pavement, curb, gutter and sidewalk are proposed for the extension of 75th Ave through the project to make connection with the

d. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project will not use water or air transportation in the immediate area.

e. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

537 average daily vehicle trips would be generated by the completed project. PM Peak hour trips would be 57 while AM Peak hour trips are anticipated to be 40.

f. Will the proposal interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No, the project will not interfere as roads associated with the project are not typically used as thru-ways to transport agricultural and forest products.

g. Proposed measures to reduce or control transportation impacts, if any.

The project proposes right-turn only vehicle movements from the 75th Ave access out onto 44th St using curbing to prevent left turns due to a lack of upgradient sight distance to the east along 44th St. An acceleration lane along 44th St has been added to assist in traffic merging with westbound traffic along 44th St. Traffic impact fees will be paid for each unit constructed on this project.

15. PUBLIC SERVICES Find help answering public service questions

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

It is anticipated that current services are sufficient to serve the project with little potential impact to the community.

b. Proposed measures to reduce or control direct impacts on public services, if any.

No measures are proposed as the project will cause minimal impact on services.

16. UTILITIES Find help answering utilities questions

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:

Electricity, water, refuse service, telephone, sanitary sewer

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Water and sewer will be provided by the City of Marysville via developer extensions of the City's current water and sewer infrastructure in 44th St NE. An offsite extension of sewer coming from parcel #29050200206500 (owned by the City of Marysville) will be constructed in order to serve the project. Puget Sound Energy will provide electricity. Utilities will be placed in trenches.

C. Signature Find help about who should sign

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.
X Thomas Abbott **Name of signee:** Tom Abbott **Position and agency/organization:** Senior Project Manager/Solid Ground Engineerin **Date submitted:** 4/29/2024

D. Supplemental sheet for non-project actions Find help for the nonproject actions worksheet

IT IS NOT REQUIRED to use this section for project actions.

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?
Proposed measures to avoid or reduce such increases are:
2. How would the proposal be likely to affect plants, animals, fish, or marine life?
Proposed measures to protect or conserve plants, animals, fish, or marine life are:
3. How would the proposal be likely to deplete energy or natural resources?
Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection, such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?
Proposed measures to protect such resources or to avoid or reduce impacts are:
5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?
Proposed measures to avoid or reduce shoreline and land use impacts are:
6. How would the proposal be likely to increase demands on transportation or public services and utilities?
Proposed measures to reduce or respond to such demand(s) are:
7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

TRAFFIC IMPACT ANALYSIS

WILLIAMS POINTE

JURISDICTION: CITY OF MARYSVILLE, WA
LOCATION: 44TH STREET NE, WEST OF 79TH AVENUE NE

Prepared for:
East Sound Investors LLC
PO Box 1930
Woodinville, Washington 98072

Prepared by:
Kimley»Horn

April 2024
090224041
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TRAFFIC IMPACT ANALYSIS

FOR

WILLIAMS POINTE

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1. DEVELOPMENT IDENTIFICATION

Kimley-Horn and Associates, Inc. (Kimley-Horn) has been retained to provide a traffic impact analysis for the Williams Pointe Development (Development). This report is intended to provide the City of Marysville (City) and Snohomish County (County) with the necessary traffic generation, trip distribution, and mitigation fee determination to facilitate their reviews of the Development. The Development is located north and south of 44th Street NE, west of 79th Avenue NE. A site vicinity map is included in **Figure 1**. The Development is proposed to consist of 59 single-family detached residential units, 47 units on the north side and 12 units on the south side. The site is currently listed as developed with two single-family detached residential units per the *Snohomish County Online Property Information (SCOPI)* web map. The site will primarily access the City street network via 44th Street NE. The north side will extend 75th Avenue NE from the existing stub south to 44th Street NE. The south side is proposed to have one public road access to 44th Street NE.

Brad Lincoln, responsible for this report and traffic analysis, is a licensed professional engineer (Civil) in the State of Washington and member of the Washington State section of the Institute of Transportation Engineers (ITE).

2. METHODOLOGY

Congestion at intersections and along arterials is generally measured in terms of level of service (LOS). In accordance with *Highway Capacity Manual (HCM), 6th Edition* by the Transportation Research Board, road facilities and intersections are rated between LOS A and LOS F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The LOS at signalized, roundabout, and all-way stop-controlled intersections is based on the average delay of all approaches. The LOS for two-way stop-controlled intersections is based on average delays for the critical stopped approach. Geometric characteristics and conflicting traffic movements are taken into consideration when determining LOS values. A summary of the intersection LOS criteria is included in **Table 1**.

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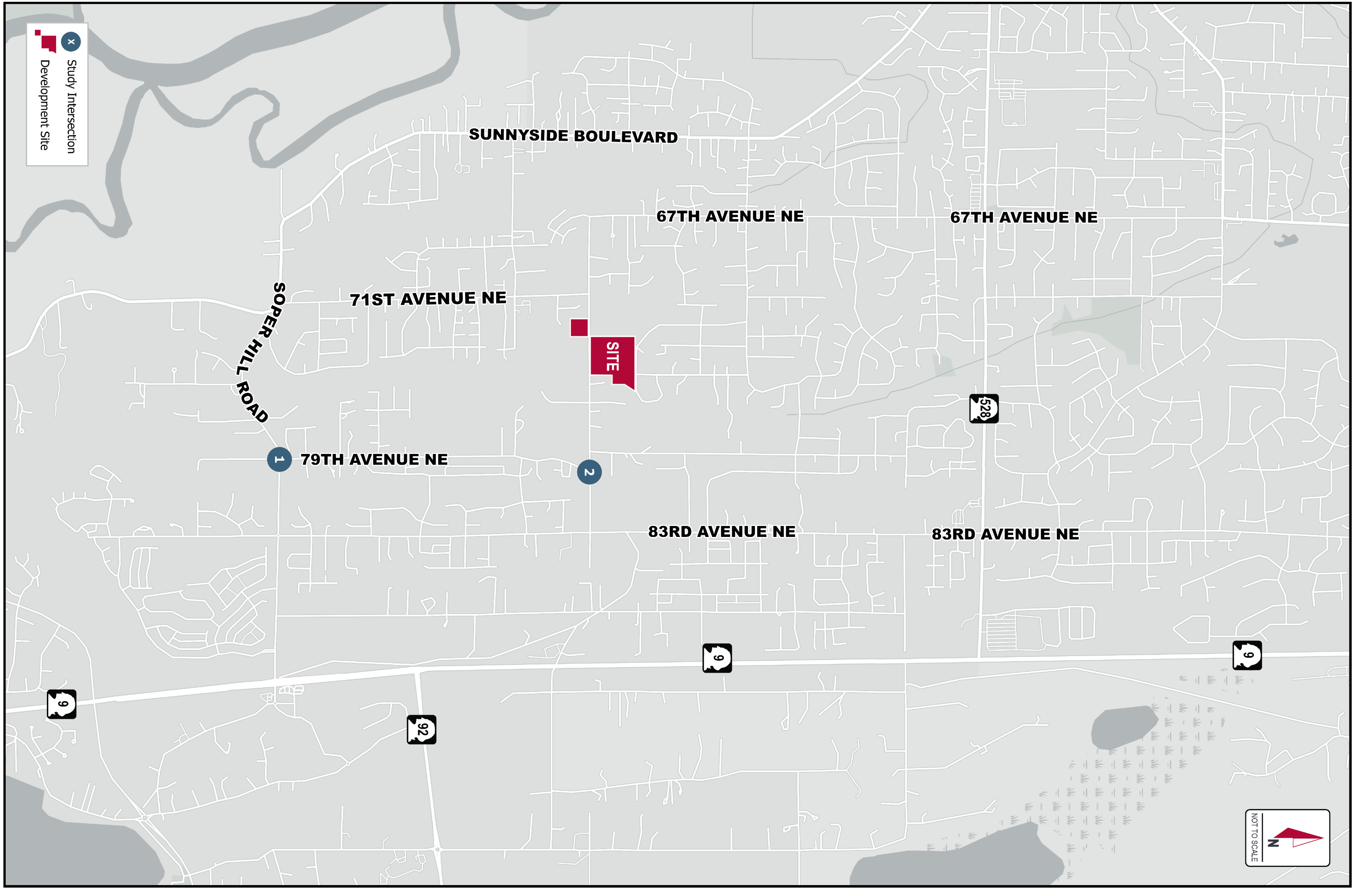


FIGURE 1: SITE VICINITY MAP

WILLIAMS POINTE - CITY OF MARYSVILLE, WA (090224041)

Table 1: Level of Service Criteria

Level of Service[1]	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	Signalized Intersections
A	Little/No Delay	≤10	≤10
B	Short Delays	>10 and ≤15	>10 and ≤20
C	Average Delays	>15 and ≤25	>20 and ≤35
D	Long Delays	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>35 and ≤50	>55 and ≤80
F	Extreme Delays[2]	>50	>80

The LOS at two-way stop-controlled intersections is based on the average delay for the stopped approach with the highest delay. The LOS at all-way stop-controlled intersections and signalized intersections is based on the average delay for all vehicles. The LOS analysis for unsignalized and signalized intersections has been performed utilizing the *Synchro 11* software. The City identifies acceptable level of service for intersections as LOS D for all intersections in the vicinity of the Development.

The trip generation calculations for the Development are based on average trip generation rates published in the ITE's *Trip Generation Manual, 11th Edition (2021)*. The opening year has been estimated for the year 2027, which accounts for a three-year construction window. The horizon year has therefore been evaluated for the year 2033.

[1] **Source:** *Highway Capacity Manual, 6th Edition.*

LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).
LOS B: Generally stable traffic flow conditions.
LOS C: Occasional back-ups may develop but delay to vehicles is short term and still tolerable.
LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e., vehicles delayed one cycle or less at signal).
LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.
LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

[2] When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

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3. TRIP GENERATION

The Development is proposed to consist of 57 single-family detached units. The site is currently developed with two single-family detached residential units that will be removed during construction. The trip generation calculations have been performed using data published by the ITE *Trip Generation Manual, 11st Edition* (*2021*) and the City rate of 1.0 PM peak-hour trips per single-family residential unit. The average trip generation rates for ITE Land Use Codes (LUC) 210, Single-Family Detached Housing, have been used for the daily and AM peak-hour trip generation calculations. The trip generation calculations for the Development are summarized in **Table 2**.

Table 2: Trip Generation Summary

Land Use	Size	Average Daily Trips (ADTs)	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Single-Family Detached Housing ITE LUC 210	59 Units	556	10	31	41	37	22	59
Single-Family Detached Housing ITE LUC 210 (Removed)	-2 Units	-19	0	-1	-1	-1	-1	-2
TOTAL		**537**	**10**	**30**	**40**	**36**	**21**	**57**

The Development is anticipated to generate approximately 537 new ADTs with approximately 40 new AM peak-hour trips and 57 new PM peak-hour trips. The trip generation calculations are provided in **Appendix A**.

4. TRIP DISTRIBUTION

The trip distribution for the Development is based on of the Whiskey Ridge East distributions established by the City. The trip distribution for the 2027 opening year is:

- 52% to and from the south along 79th Avenue NE
  - 31% along Sunnyside Boulevard
  - 20% along Soper Hill Road to and from the east
  - 1% along Soper Hill Road to and from the west
- 41% to and from the east along 44th Street NE
  - 21% along 67th Avenue NE
  - 19% along Sunnyside Boulevard
  - 1% along local roadways from 52nd Street NE
- 7% to and from the west along 44th Street NE
  - 4% along 83rd Avenue NE
  - 3% along E Sunnyside School Road

The trip distribution for the 2033 horizon year is:

- 41% to and from the east along 44th Street NE
  - 21% along 67th Avenue NE
  - 19% along Sunnyside Boulevard
  - 1% along local roadways from 52nd Street NE
- 33% to and from the south along 79th Avenue NE
  - 30% along Sunnyside Boulevard
  - 2% along Soper Hill Road to and from the east
  - 1% along Soper Hill Road to and from the west
- 21% to and from the west along 44th Street NE
  - 17% along SR-9
  - 4% along SR 92
- 5% to and from the north along 83rd Avenue NE
  - 2% along SR-9
  - 2% along 83rd Avenue NE
  - 1% along local roadways 83rd Avenue NE

Detailed trip distributions for the AM peak-hour and PM peak-hour during existing conditions are shown in **Figure 2** and **Figure 3**, respectively. Detailed trip distributions for the AM peak-hour and PM peak-hour during horizon-year conditions are shown in **Figure 4** and **Figure 5**, respectively. The established distributions are provided in **Appendix B**.

5. INTERSECTION LEVEL OF SERVICE ANALYSIS

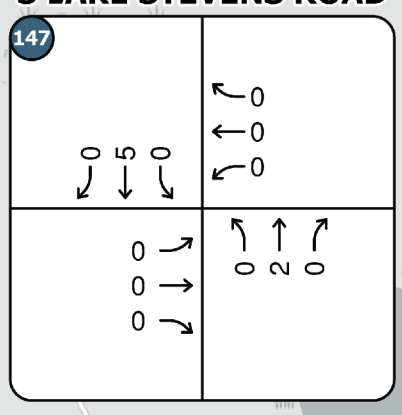
The following intersections have been analyzed based on an impact of 25 trips generated by the Development:

1. 79th Avenue NE at Soper Hill Road
2. 79th Avenue NE at 44th Street NE

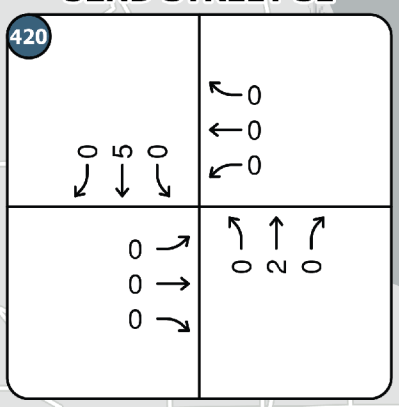
These intersections have been analyzed for the weekday PM peak-hour.

NOT TO SCALE

SR-9 AT
S LAKE STEVENS ROAD



SR-9 AT
32ND STREET SE



67TH AVENUE NE
83RD AVENUE NE
SUNNYSIDE BOULEVARD
71ST AVENUE NE
79TH AVENUE NE
SOPER HILL ROAD
528
9
92
147
420
SITE

10% 52 3 1
10% 4 52 1
21% 109 7 2
19% 5 99 2
1% LOCAL 5 0 0
1% LOCAL 5 0 0
2% 10 0
2% 10 1
4% 20 1
41% 12 213 4
7% 1 36 2
52% 270 16 5
3% 16 9 1
4% 0 21 1
1% 0 5 0
1% 0 5 0
20% 2 104 6
31% 161 10 3
2% 0 11 1
17% 88 5 2

XX% Trip Distribution %
XXX Key Intersection
Development Site
Inbound Trip Path
Outbound Trip Path
XX Turning Movement Volumes
AWDT
Outbound Trips
Inbound Trips

NOT TO SCALE

SR-9 AT
S LAKE STEVENS ROAD

SR-9 AT
32ND STREET SE

67TH AVENUE NE

83RD AVENUE NE

SUNNYSIDE BOULEVARD

71ST AVENUE NE

79TH AVENUE NE

SOPER HILL ROAD

SITE

Trip Distribution %
Key Intersection
Development Site
Inbound Trip Path
Outbound Trip Path
Turning Movement Volumes
AWDT

FIGURE 3: 2027 OPENING YEAR TRIP DISTRIBUTION - PM PEAK HOUR
WILLIAMS POINTE - CITY OF MARYSVILLE, WA (090224047)

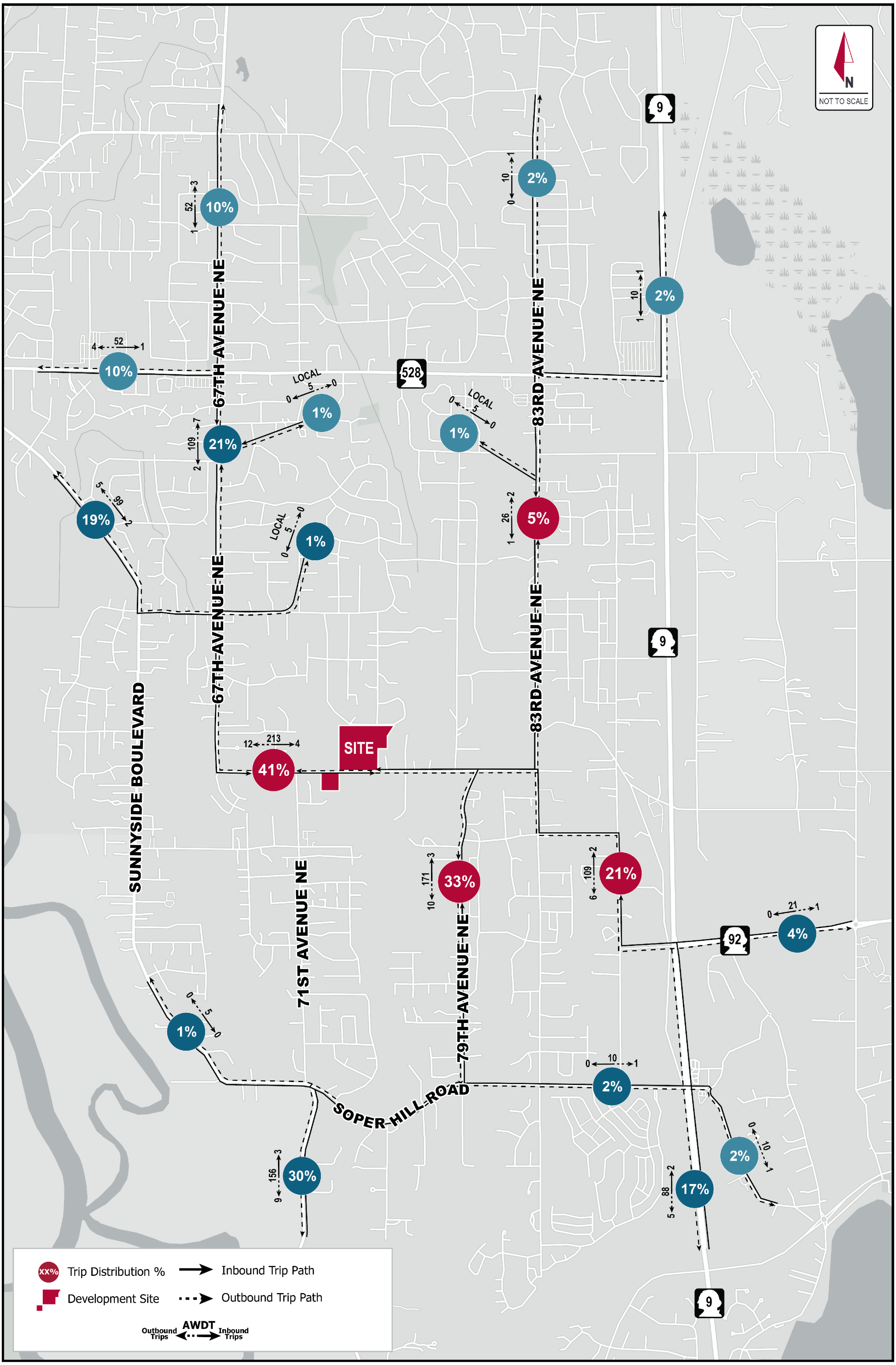


FIGURE 4: 2033 HORIZON YEAR TRIP DISTRIBUTION - AM PEAK HOUR

WILLIAMS POINTE - CITY OF MARYSVILLE, WA (09022404.)

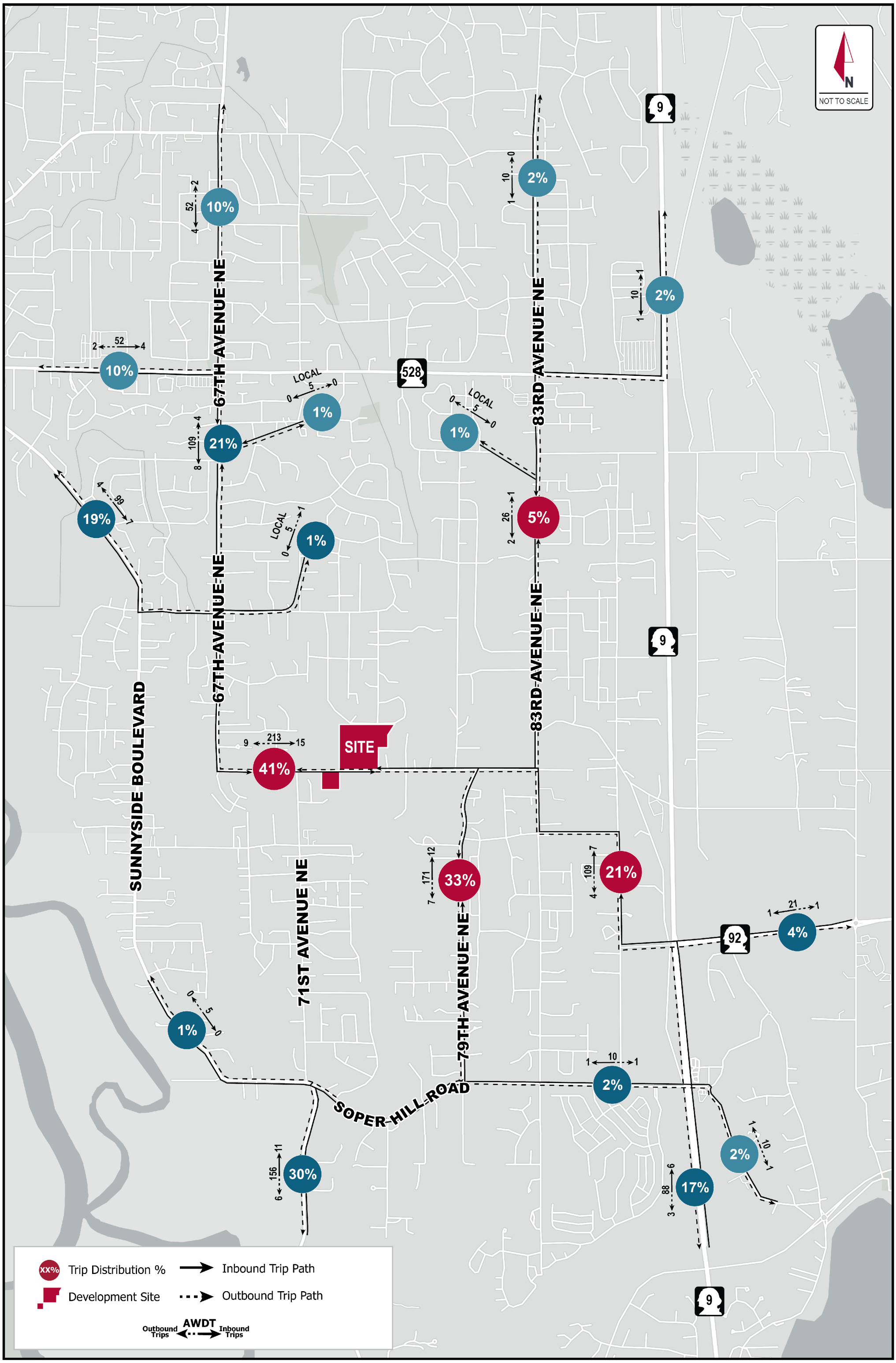


FIGURE 5: 2033 HORIZON YEAR TRIP DISTRIBUTION - PM PEAK HOUR

WILLIAMS POINTE - CITY OF MARYSVILLE, WA (09022404.)

5.1. Turning Movement Calculations

5.1.1. Snohomish County Intersections

The interlocal agreement between the City and County requires detailed development trip turning movement data at County key intersections impacted with three or more directional trips on an approach or departure. The Development will impact two key intersections during the AM peak-hour and PM Peak-hour. The AM peak-hour key intersection impacts are shown in tabular form in **Table 3** and the PM peak-hour key intersection impacts are shown in tabular form in **Table 4**.

Table 3: Key Intersection Volumes – AM Peak Hour

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#147: SR-9 at S Lake Stevens Road	0	0	0	0	0	0	0	2	0	0	5	0
#420: SR-9 at 32nd Street SE	0	0	0	0	0	0	0	2	0	0	5	0

Table 4: Key Intersection Volumes – PM Peak Hour

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#147: SR-9 at S Lake Stevens Road	0	0	0	0	0	0	0	6	0	0	3	0
#420: SR-9 at 32nd Street SE	0	0	0	0	0	0	0	6	0	0	3	0

The key intersection impacts are also shown in graphical form in **Figure 2** and **Figure 3** for the AM and PM peak-hours, respectively.

5.1.2. Intersection Volumes

The existing PM peak-hour turning movements at the study intersections were collected by the independent count firm Traffic Data Gathering (TDG) in April 2024. The 2024 existing turning movements at the study intersections are shown in **Figure 6**. The count data is included in **Appendix B**.

The future analysis has been performed for an opening year of 2027, which represents when the Development is expected to be constructed and occupied. The 2027 opening year baseline turning movements have been calculated by applying a 3% annually compounding growth rate applied to the 2024 existing turning movements and adding trips generated by the following pipeline developments:

- Taylor Property – Kimley-Horn (January 2024)
- Feizbakhsh PRD – Kimley-Horn (February 2024)
- Minor PRD – Kimley-Horn (February 2024)
- Cornelius Lacey – Kimley-Horn (March 2024)

The application of a 3% annually compounding growth rate and pipeline data is a conservative analysis since the City guidelines identify that a 2% annually compounding growth rate should be used when pipeline trips are being added. The 2027 opening year baseline turning movements at the study intersections are shown in **Figure 7**. The 2027 opening year future with development turning movements at the study intersections have been calculated by adding the trips generated by the Development to the 2027 opening year baseline turning movements, which include development trips from the three pipeline projects. The

2027 opening year future with development turning movements are shown in **Figure 8**. The pipeline data is included with the existing count data in **Appendix B**.

The study intersections have also been analyzed for the 2033 horizon year conditions (baseline and with Development). The horizon year analysis accounts for the typical six-year concurrency period after the expected opening year. The 2033 horizon year baseline turning movements have been calculated using the same 3% annually compounding growth rate. The 2033 horizon year baseline turning movements at the study intersections are shown in **Figure 9**. The 2033 horizon year future with development turning movements at the study intersections have been calculated by adding the trips generated by the Development to the 2033 horizon year baseline turning movements. The 2033 horizon year future with development turning movements are shown in **Figure 10**. The turning movement calculations are included in **Appendix C**.

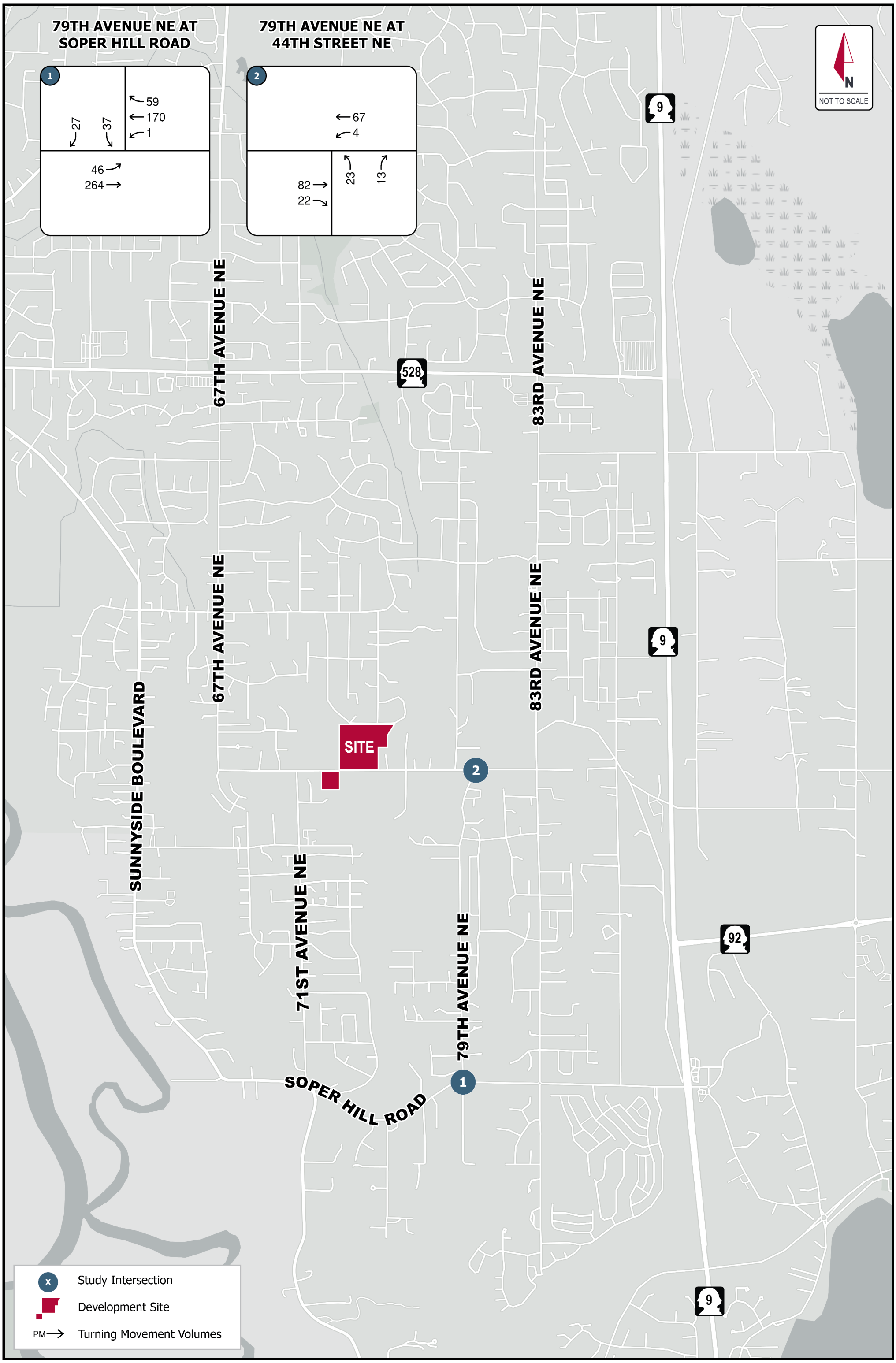
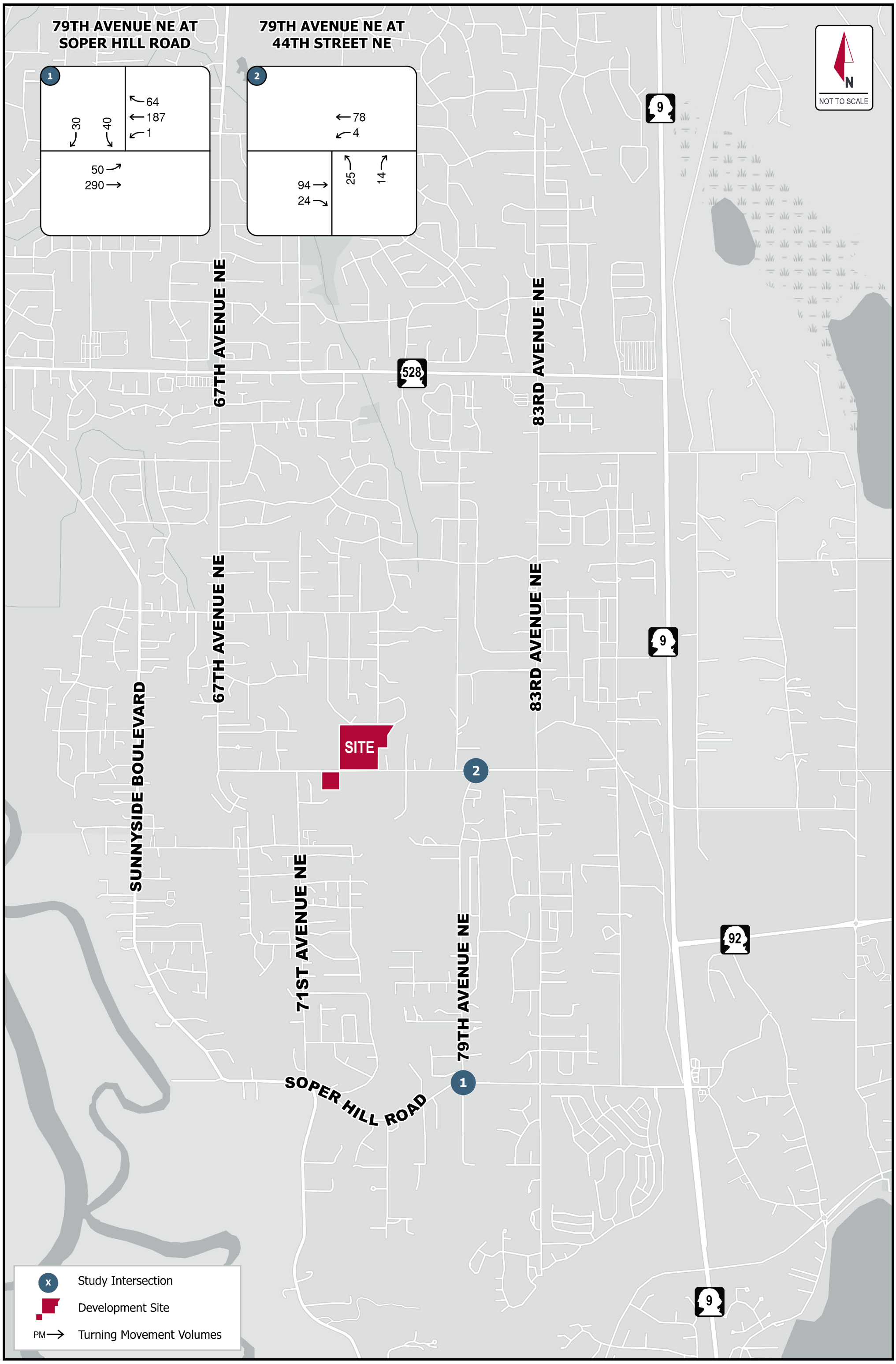


FIGURE 6: 2024 EXISTING TURNING MOVEMENTS

WILLIAMS POINTE - CITY OF MARYSVILLE, WA (090224041)



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FIGURE 7: 2027 OPENING-YEAR NO-BUILD TURNING MOVEMENTS

WILLIAMS POINTE - CITY OF MARYSVILLE, WA (090224047)

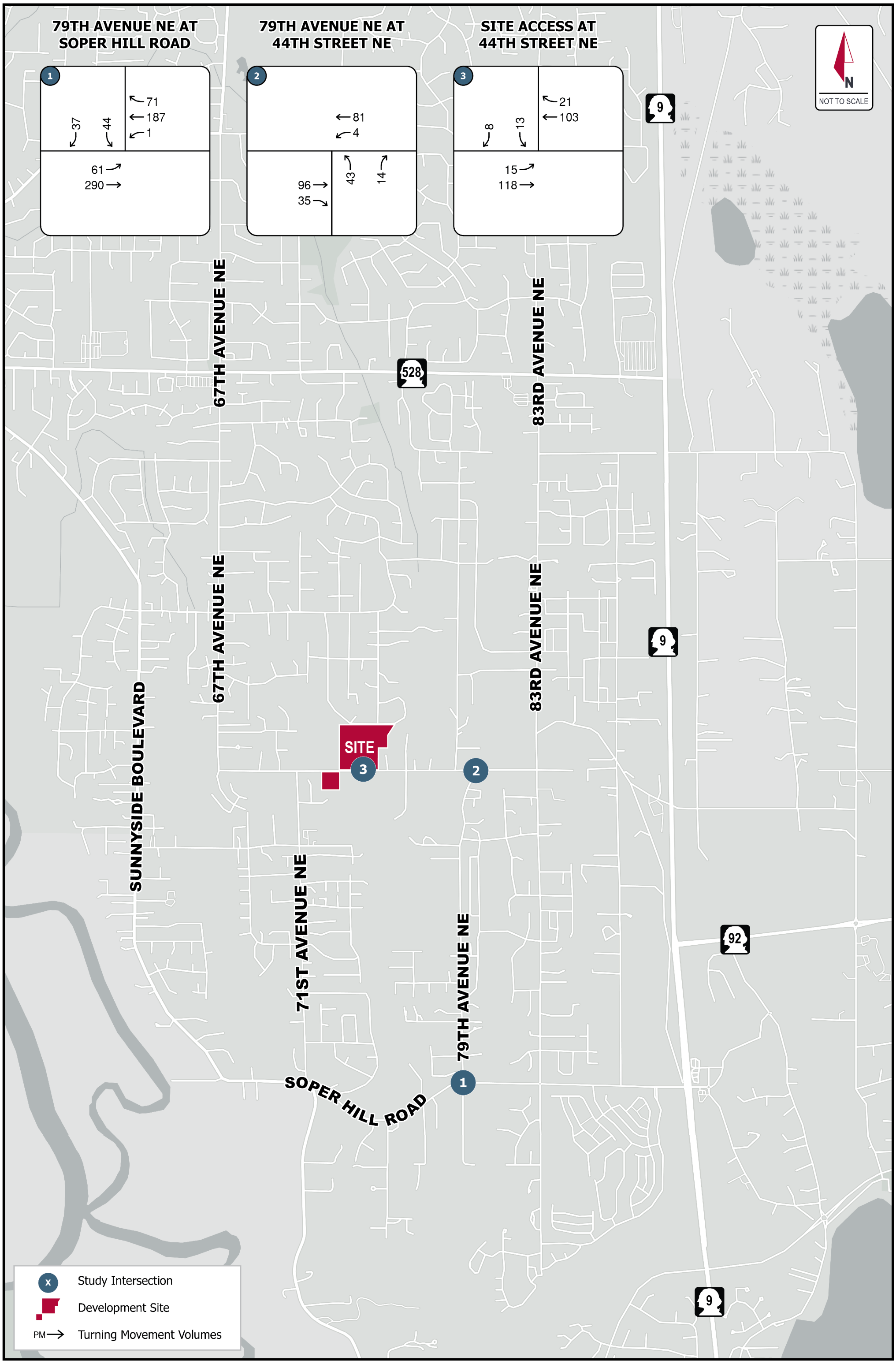


FIGURE 8: 2027 OPENING-YEAR FULL-BUILD TURNING MOVEMENTS

79TH AVENUE NE AT SOPER HILL ROAD

1

34
47
75
216
1
58
336

79TH AVENUE NE AT 44TH STREET NE

2

90
5
112
28
29
16

NOT TO SCALE

67TH AVENUE NE

83RD AVENUE NE

528

9

SUNNYSIDE BOULEVARD

SITE

2

71ST AVENUE NE

79TH AVENUE NE

SOPER HILL ROAD

1

92

9

x Study Intersection

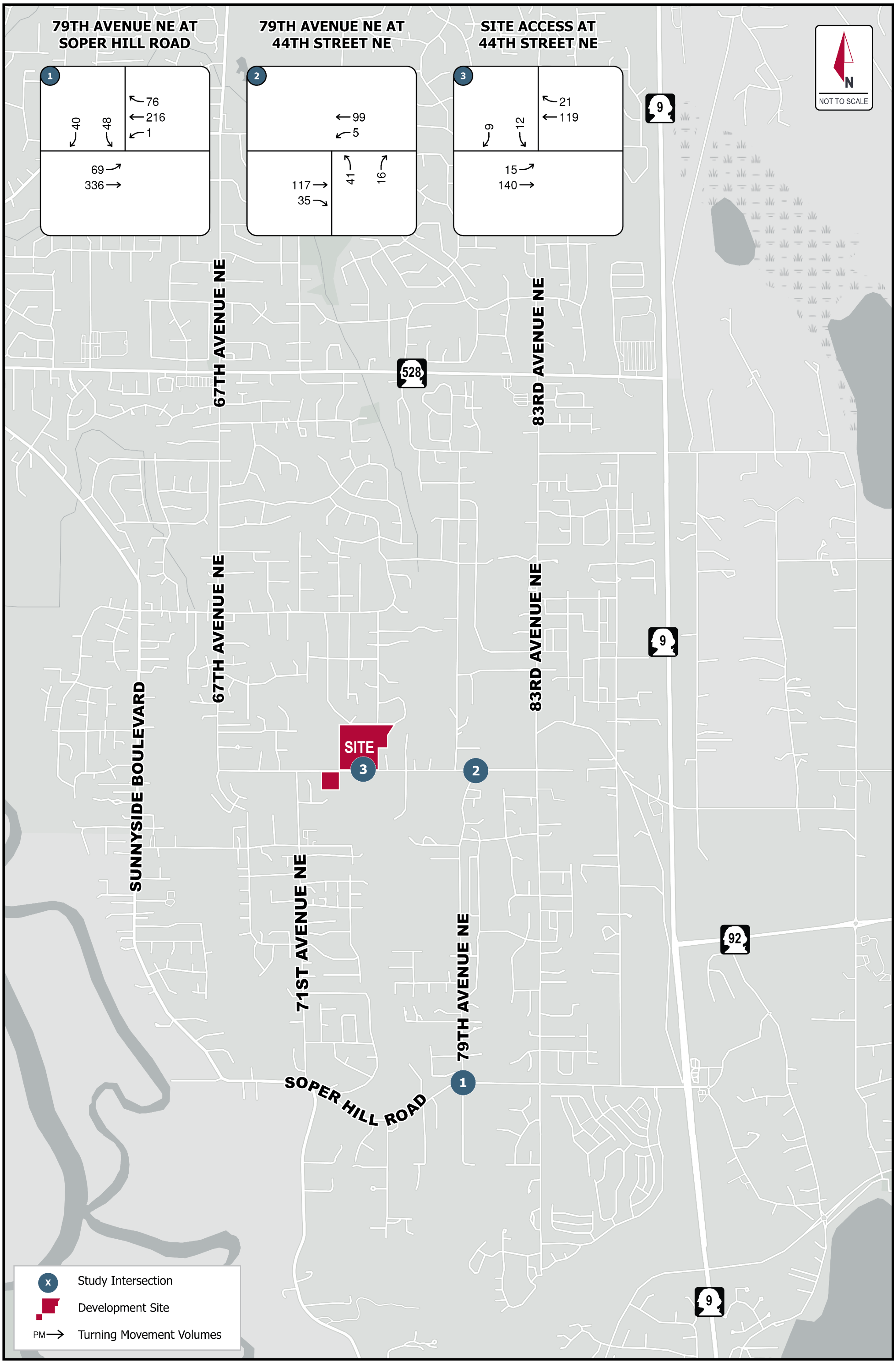
Development Site

PM → Turning Movement Volumes

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FIGURE 9: 2033 HORIZON-YEAR NO-BUILD TURNING MOVEMENTS

WILLIAMS POINTE - CITY OF MARYSVILLE, WA (090224047)



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FIGURE 10: 2033 HORIZON-YEAR FULL-BUILD TURNING MOVEMENTS

WILLIAMS POINTE - CITY OF MARYSVILLE, WA (090224047)

5.2. Level of Service Calculations

The level of service calculations have been performed utilizing the existing channelization, existing intersection control and peak-hour factors and heavy vehicle factors from the 2024 turning movement counts. All Development trips during both the opening year and horizon year conditions have been assigned to the north access to 44th Street NE for feasibility and demonstrate the "worst-case" delay scenario. The level of service summary for the opening-year is included in **Table 5** and the level of service summary for the horizon-year is included in **The analysis** shows that the study intersections currently operate at LOS B or better during the PM peak-hour. In the 2027 opening-year no-build and full-build conditions, all study intersections are anticipated to continue operating at LOS B or better with the Development.

Table 6 for the PM peak-hour.

Table 5: Level of Service Summary – Opening-Year

Intersections	2024 Existing Conditions		2027 Conditions			
			No-Build		Full-Build	
	LOS	Delay	LOS	Delay	LOS	Delay
1. 79th Avenue NE at Soper Hill Road	B	13.2 sec	B	14.1 sec	B	14.6 sec
2. 79th Avenue NE at 44th Street NE	A	9.4 sec	A	9.6 sec	A	9.9 sec
3. Site Access at 44th Street NE	-	-	-	-	A	9.8 sec

The analysis shows that the study intersections currently operate at LOS B or better during the PM peak-hour. In the 2027 opening-year no-build and full-build conditions, all study intersections are anticipated to continue operating at LOS B or better with the Development.

Table 6: Level of Service Summary – Horizon-Year

Intersections	2024 Existing Conditions		2033 Conditions			
			No-Build		Full-Build	
	LOS	Delay	LOS	Delay	LOS	Delay
1. 79th Avenue NE at Soper Hill Road	B	13.2 sec	C	16.3 sec	C	16.7 sec
2. 79th Avenue NE at 44th Street NE	A	9.4 sec	A	9.8 sec	B	10.1 sec
3. Site Access at 44th Street NE	-	-	-	-	B	10.0 sec

In the 2033 opening-year no-build and full-build conditions, all study intersections are anticipated to continue operating at acceptable LOS C or better with the Development. The intersection LOS calculations are provided in the **Appendix D**.

6. SITE ACCESS

The Development is proposed to have one access to 44th Street NE that will extend the 75th Avenue NE stub road that will serve 47 units. The remaining 12 units will have access via a public road on the south side of 44th Street NE. There are improvements to 44th Street NE that will create sufficient pavement for an additional westbound lane for approximately 600 feet west of the 75th Avenue NE alignment, if the City decides to stripe the roadway as such.

7. TRANSPORTATION IMPACT FEES

The City has interlocal agreements with the County and Washington State Department of Transportation (WSDOT) for transportation impact fees. These transportation impact fees are based on the area wide traffic mitigation fee or actual impacts to improvement projects.

7.1. City of Marysville

The City traffic mitigation fees have been calculated using the residential rates of $6,300 per new single-family unit. The Development is proposed to construct 59 single-family units with credit for 2 existing single-family detached unit for a total of 57 new single-family units. The City traffic mitigation fees for the Development should therefore be $359,100.00.

7.2. Snohomish County

The City and County have an interlocal agreement that provides for the payment of traffic mitigation for impacts to County roadways by City developments. Traffic mitigation fees are based on predetermined area impacts or impacts to actual improvement projects. The only County improvement project in the area is along 88th Street NE, between approximately 44th Drive NE and 66th Drive NE. This improvement project is not anticipated to be impacted by three directional PM peak-hour trips from the Development. County traffic mitigation fees should therefore not be required for the Development.

7.3. Washington State Department of Transportation

The WSDOT mitigation fees are based on impacts to improvement projects identified in the Exhibit C List included in the interlocal agreement between the County and WSDOT. There are not any WSDOT intersections on the Exhibit C List that will be impacted by three directional PM peak-hour trips generated by the Development. WSDOT transportation impact fees should therefore not be required for the Development.

8. CONCLUSIONS

The Development is proposed to consist of 59 single-family detached residential units. The site is currently listed as occupied with 2 single-family detached residential units that will be removed during construction. The Development is anticipated to generate approximately 519 new ADTs with approximately 39 new AM peak-hour trips and 55 new PM peak-hour trips. The analysis shows that the study intersections currently operate at LOS B or better during the PM peak-hour, and will continue to operate at LOS C during the 2033 no-build and full-build conditions. The Development is anticipated to construct 57 new single-family units. The City traffic mitigation fees of $6,300 per new single-family unit for the Development should therefore be $359,100.00. Neither County nor WSDOT traffic mitigation fees should be required for the Development.

APPENDIX A

TRIP GENERATION CALCULATIONS

Williams Pointe
090224041

Trip Generation for: **Weekday**
(a.k.a.): **Average Weekday Daily Trips (AWDT)**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detached Housing	59 units	210	9.43	50%	50%	556	0%	0	556	0%	0	0%	0	556	0	0	0	0	278	278
Single-Family Detached Housing (Removed)	-2 units	210	9.43	50%	50%	-19	0%	0	-19	0%	0	0%	0	-19	0	0	0	0	-10	-9
Total						537		0	537		0		0	537	0	0	0	0	268	269

Williams Pointe
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Trip Generation for: **Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 7 and 9 AM**
(a.k.a.): **Weekday AM Peak Hour**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detached Housing	59 units	210	0.70	25%	75%	41	0%	0	41	0%	0	0%	0	41	0	0	0	0	10	31
Single-Family Detached Housing (Removed)	-2 units	210	0.70	25%	75%	-1	0%	0	-1	0%	0	0%	0	-1	0	0	0	0	0	-1
Total						40		0	40		0		0	40	0	0	0	0	10	30

Williams Pointe
090224041

Trip Generation for: **Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 4 and 6 PM**
(a.k.a.): **Weekday PM Peak Hour**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detached Housing	59 units	210	1.00	63%	37%	59	0%	0	59	0%	0	0%	0	59	0	0	0	0	37	22
Single-Family Detached Housing (Removed)	-2 units	210	1.00	63%	37%	-2	0%	0	-2	0%	0	0%	0	-2	0	0	0	0	-1	-1
Total						57		0	57		0		0	57	0	0	0	0	36	21

APPENDIX B

DISTRIBUTION AND COUNT DATA

WHISKEY RIDGE WEST - EXISTING

City of Marysville

November 2017

- Marysville City Limits
- Other City Limits
- Urban Growth Boundary
- Tulalip Reservation
- Parks and open space
- Interstate Highway
- State Highway
- Arterial
- Schools

N

0 2,000 4,000 6,000 Feet

produced by City of Marysville GIS

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1% 1% 1% 1% 3% 1% 4% 1% 2% 1% 2% 2% 3% 1% 4% 3% 2% 3% 1% 5% 9% 1% 10% 2% 2% 2% 10% 1% 1% 3% 19% 2% 21% 19% 1% 4% 7% 19% 41% 41% 3% 48% 3% 17% 2% 3% 1% 4% 1% 52% 32% 2% 31% 20% 17%

WHISKEY RIDGE WEST - HORIZON

N

1%
1%
1%
1%
3%
1%
4%
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1%
19%
21%
19%
1%
4%
5%
19%
41%
17%
17%
1%
33%
21%
4%
17%
2%
2%
31%
17%
30%

City of Marysville

City Limits
City of Marysville Urban Growth Area
Tulalip Reservation
Park
City Park

Fire Station
Police Station
School
Street
Burlington Norther RR
Trails

Marysville Street Classification
Interstate
State Highway
Principal Arterial
Minor Arterial
Collector Arterial
Future Arterial

0 1,250 2,500 5,000 7,500 10,000 Feet

Map Plotted: May, 2018

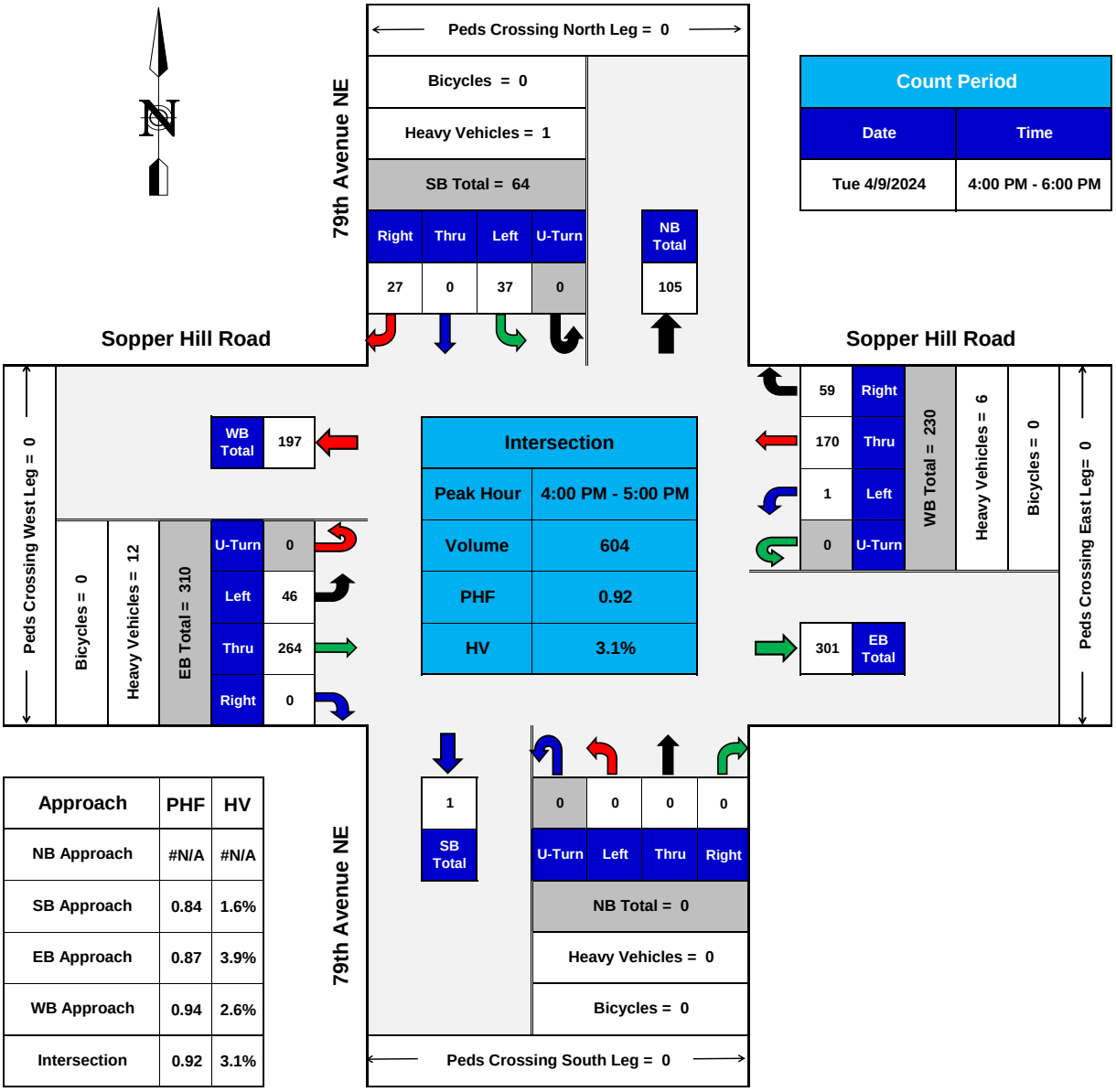
CITY OF Marysville WASHINGTON

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P:\GIS\CHudson\Projects\Maps\COM_11_17_11292010.mxd

79th Avenue NE @ Sopper Hill Road

Marysville, WA



Approach	PHF	HV
NB Approach	#N/A	#N/A
SB Approach	0.84	1.6%
EB Approach	0.87	3.9%
WB Approach	0.94	2.6%
Intersection	0.92	3.1%

PHF = Peak Hour Factor
HV = Heavy Vehicles

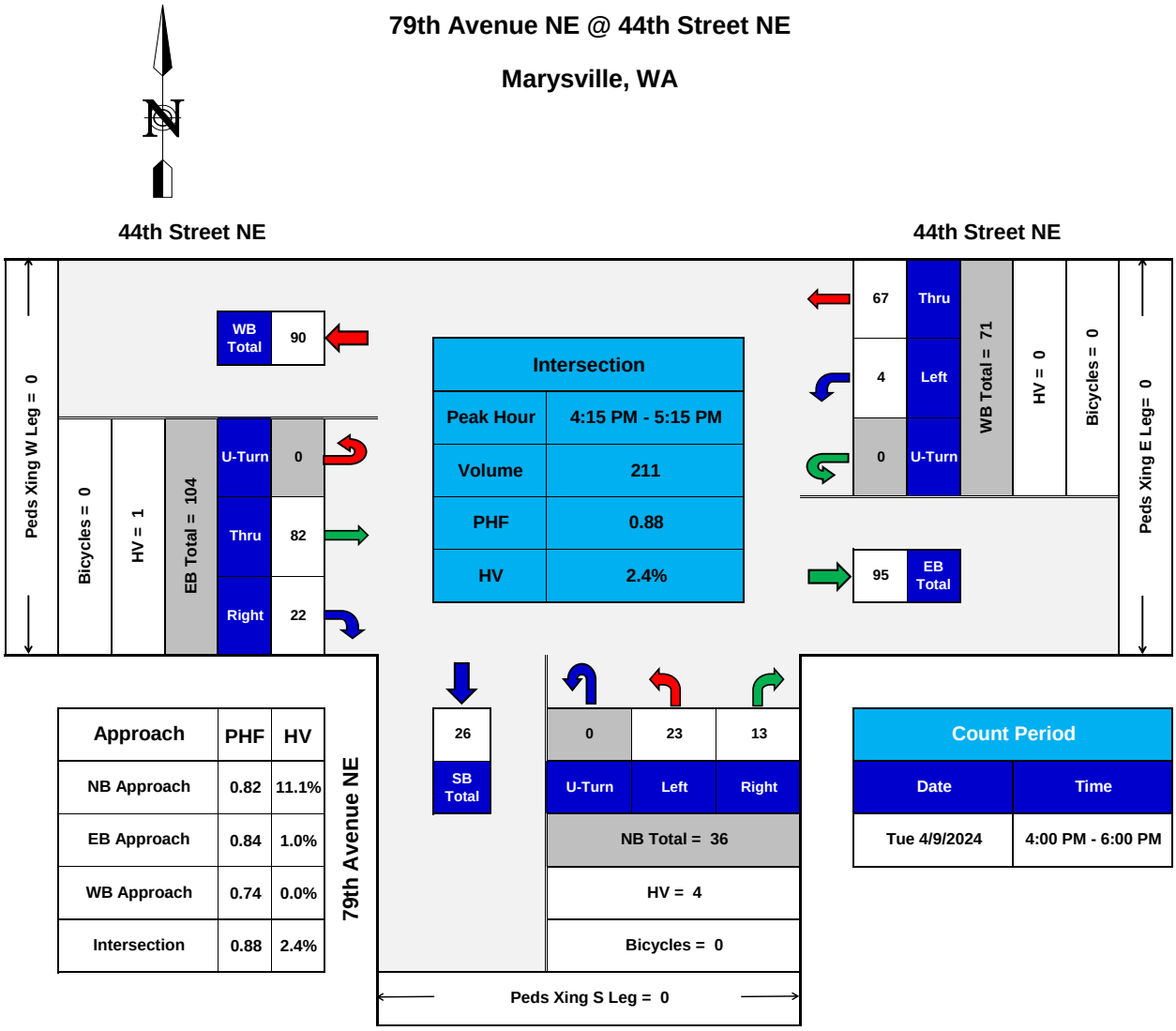
TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY

TRAFFIC DATA GATHERING

79th Avenue NE @ 44th Street NE

Marysville, WA



Approach	PHF	HV
NB Approach	0.82	11.1%
EB Approach	0.84	1.0%
WB Approach	0.74	0.0%
Intersection	0.88	2.4%

Count Period	
Date	Time
Tue 4/9/2024	4:00 PM - 6:00 PM

PHF = Peak Hour Factor
HV = Heavy Vehicles

TURNING MOVEMENTS DIAGRAM

PEAK HOUR SUMMARY

TRAFFIC DATA GATHERING

TRAFFIC IMPACT ANALYSIS

TAYLOR PROPERTY

JURISDICTION: CITY OF MARYSVILLE, WA
LOCATION: 49TH STREET NE, WEST OF 83RD AVENUE NE

Prepared for:

Keystone Land
13805 Smokey Point Boulevard
Suite 102
Marysville, Washington 98258

Prepared by:

Kimley»Horn

January 2024
090223167
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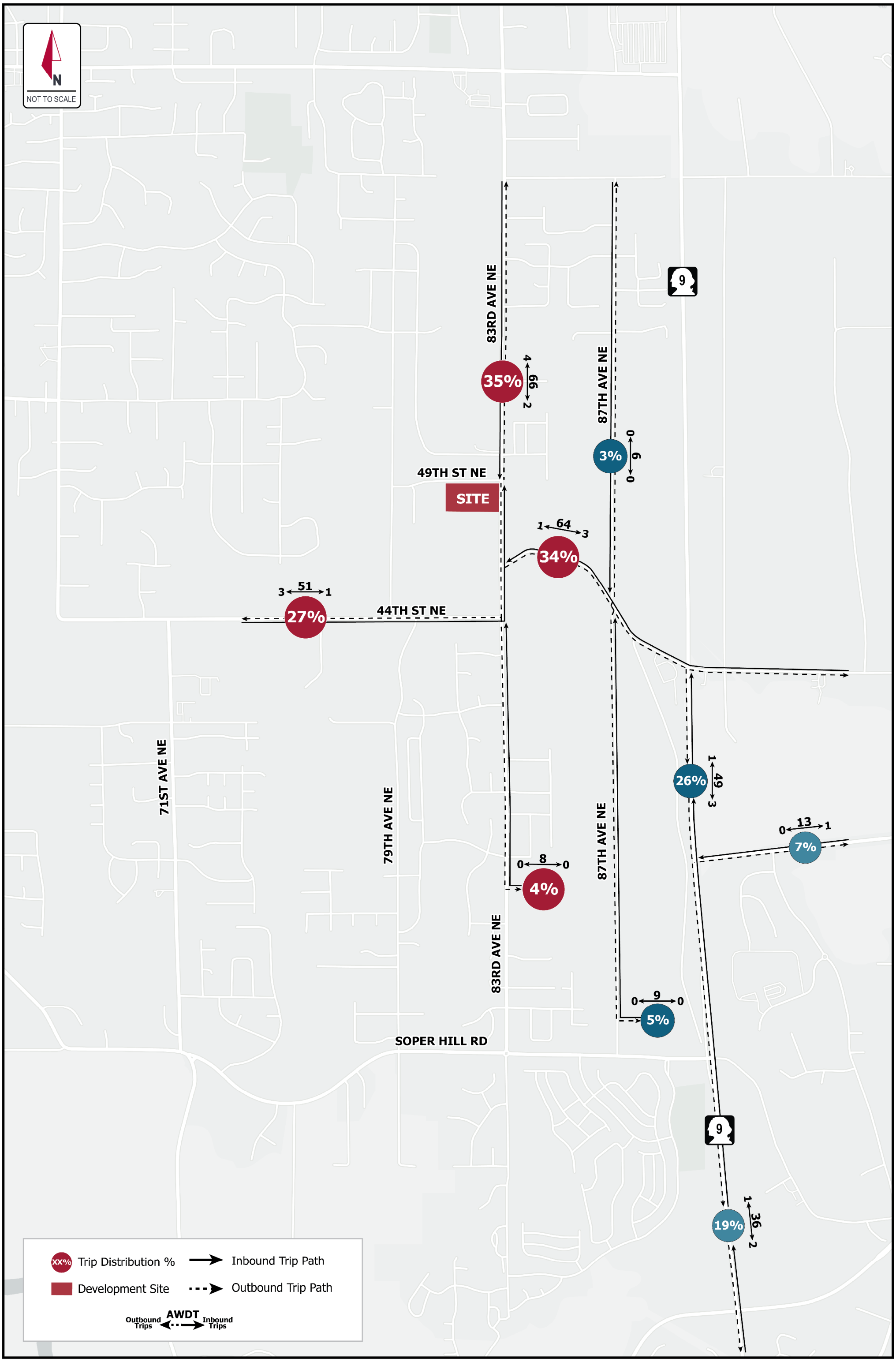


FIGURE 2: TRIP DISTRIBUTION - AM PEAK HOUR

TAYLOR PROPERTY - CITY OF MARYSVILLE, WA (090223161

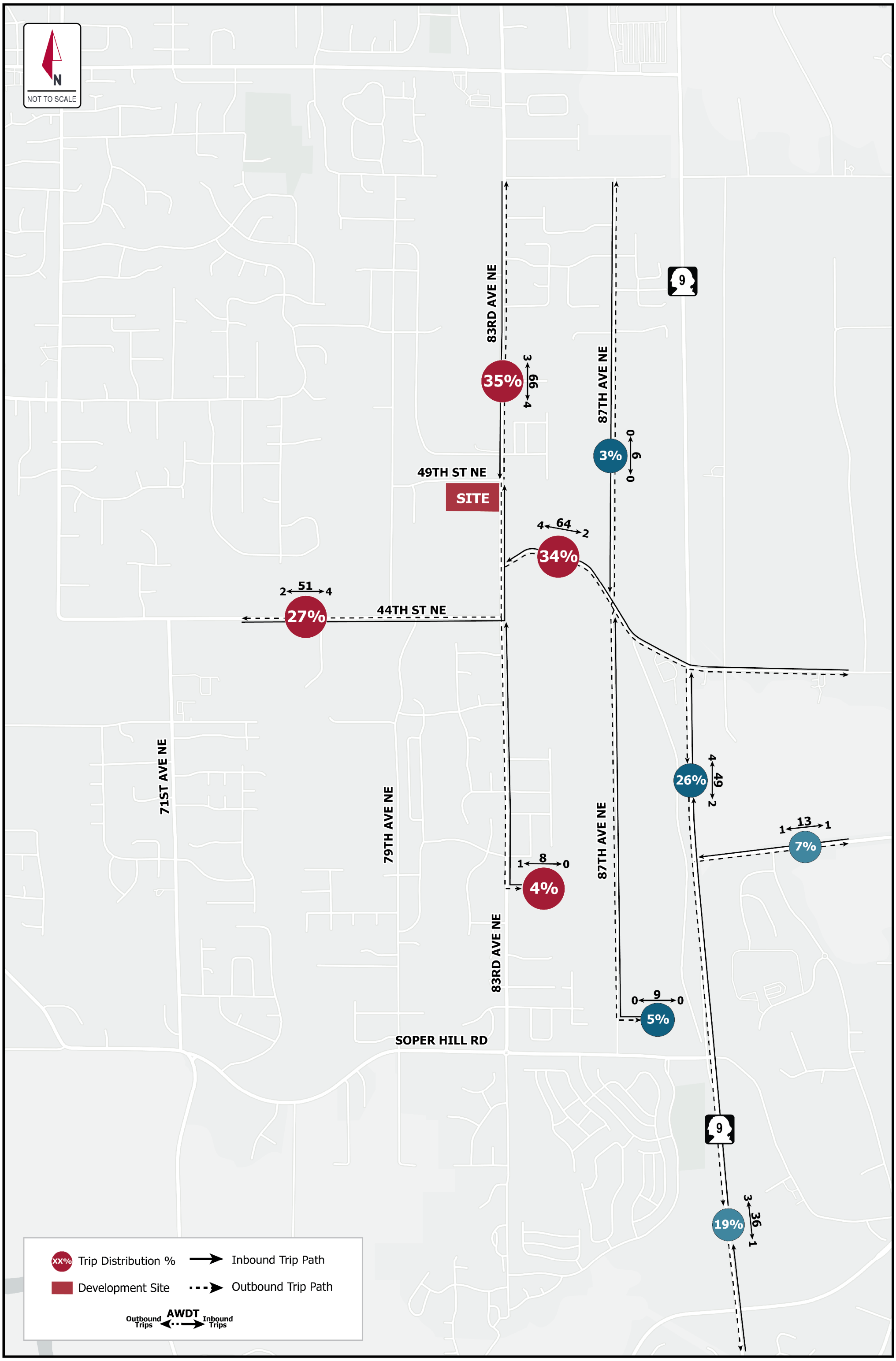


FIGURE 3: TRIP DISTRIBUTION - PM PEAK HOUR

TAYLOR PROPERTY - CITY OF MARYSVILLE, WA (090223162

TRAFFIC IMPACT ANALYSIS

FEIZBAKHSH PRD

JURISDICTION: CITY OF MARYSVILLE, WA
LOCATION: 3211 83RD AVENUE NE

Prepared for:

Keystone Land, LLC
13805 Smokey Point Boulevard
Suite 102
Marysville, Washington 98271

Prepared by:

Kimley»Horn

February 2024
KH #090223209
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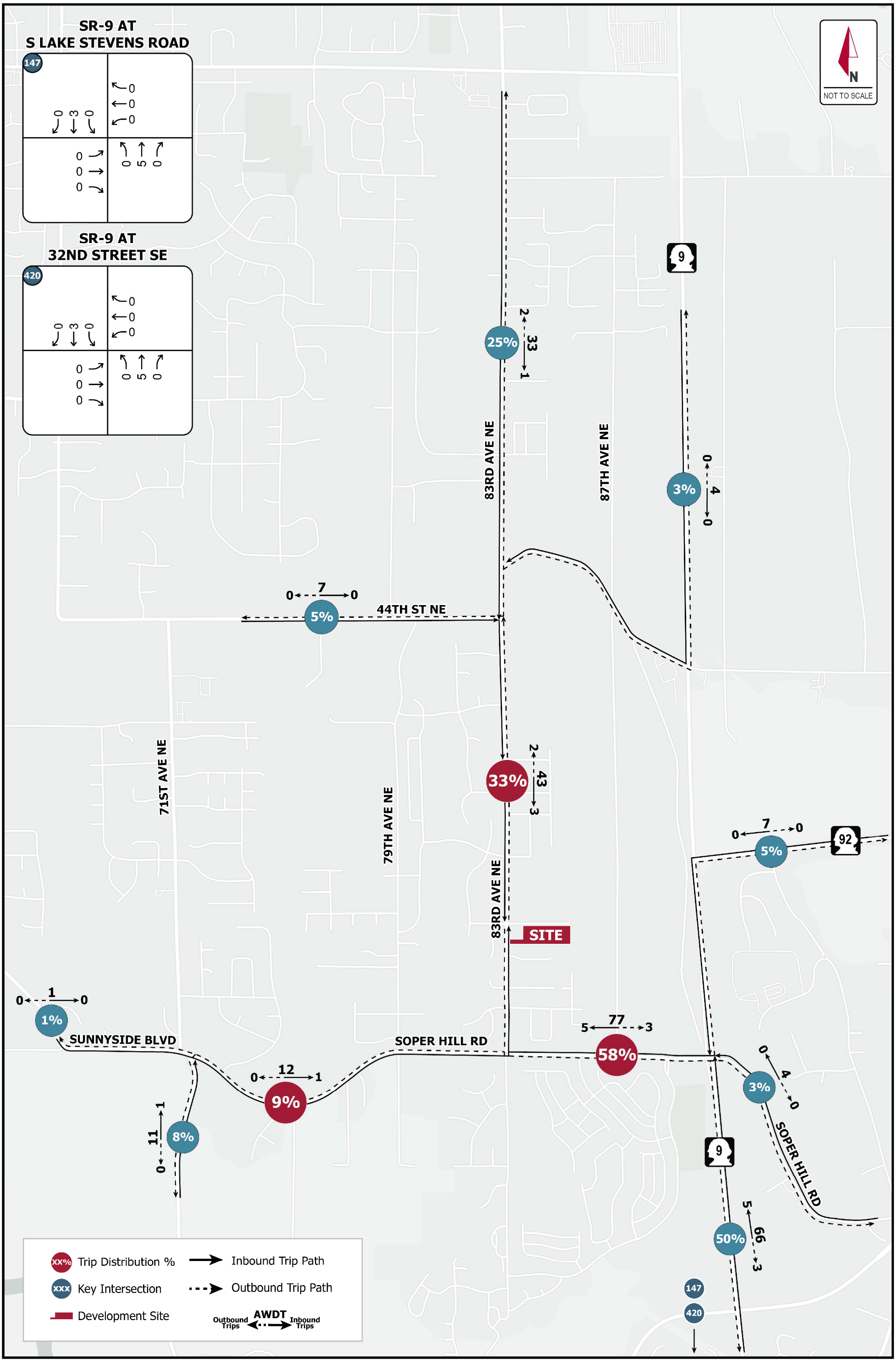


FIGURE 3 - PM PEAK HOUR OPENING YEAR TRIP DISTRIBUTION

FEIZBAKHSH PRD - CITY OF MARYSVILLE, WA KH #090223264

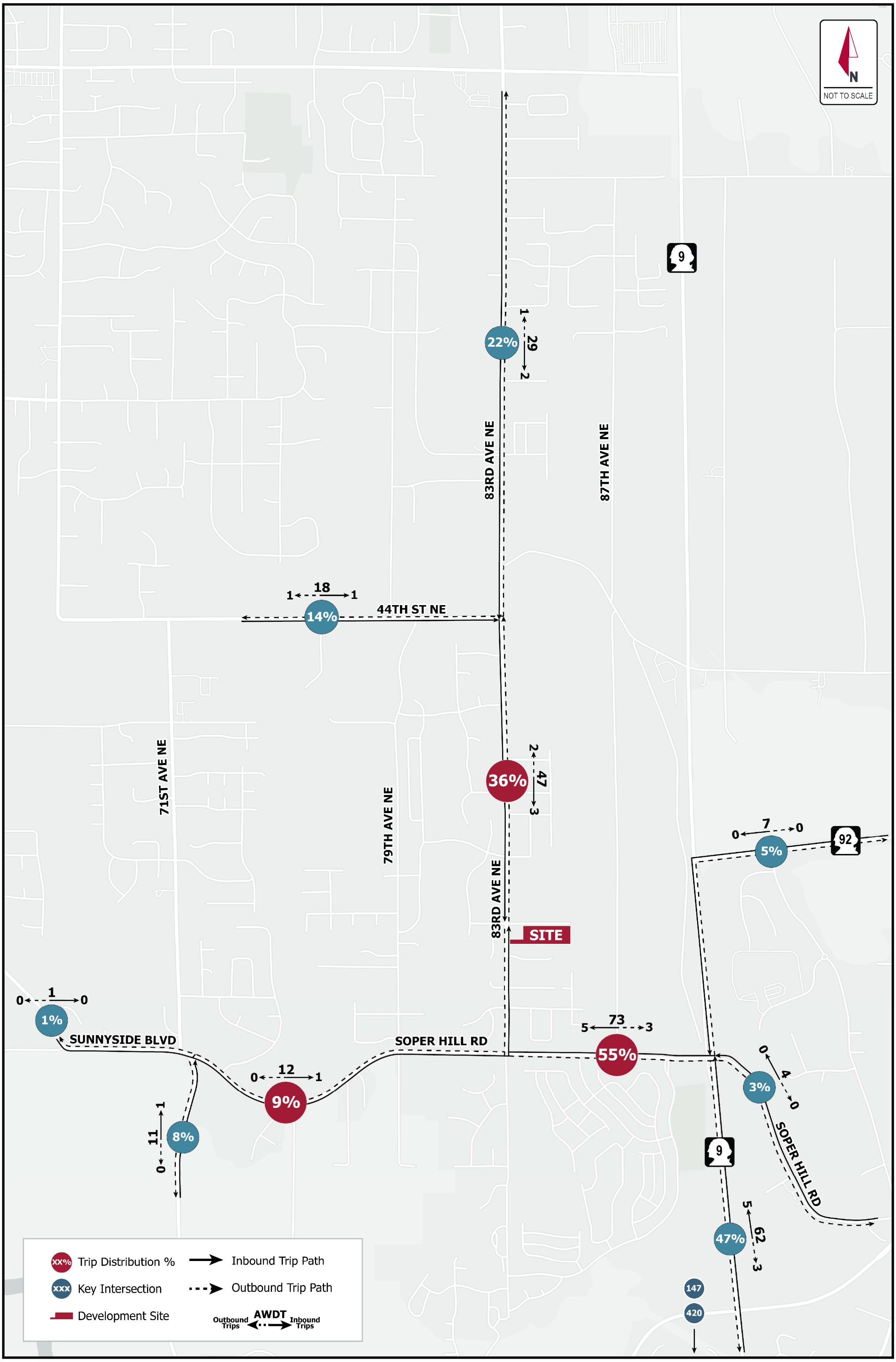


FIGURE 5 - PM PEAK HOUR HORIZON YEAR TRIP DISTRIBUTION

FEIZBAKHSH PRD - CITY OF MARYSVILLE, WA KH #090223265

TRAFFIC IMPACT ANALYSIS

MINOR PRD

JURISDICTION: CITY OF MARYSVILLE, WA
LOCATION: 83RD AVE NE, SOUTH OF E SUNNYSIDE SCHOOL RD

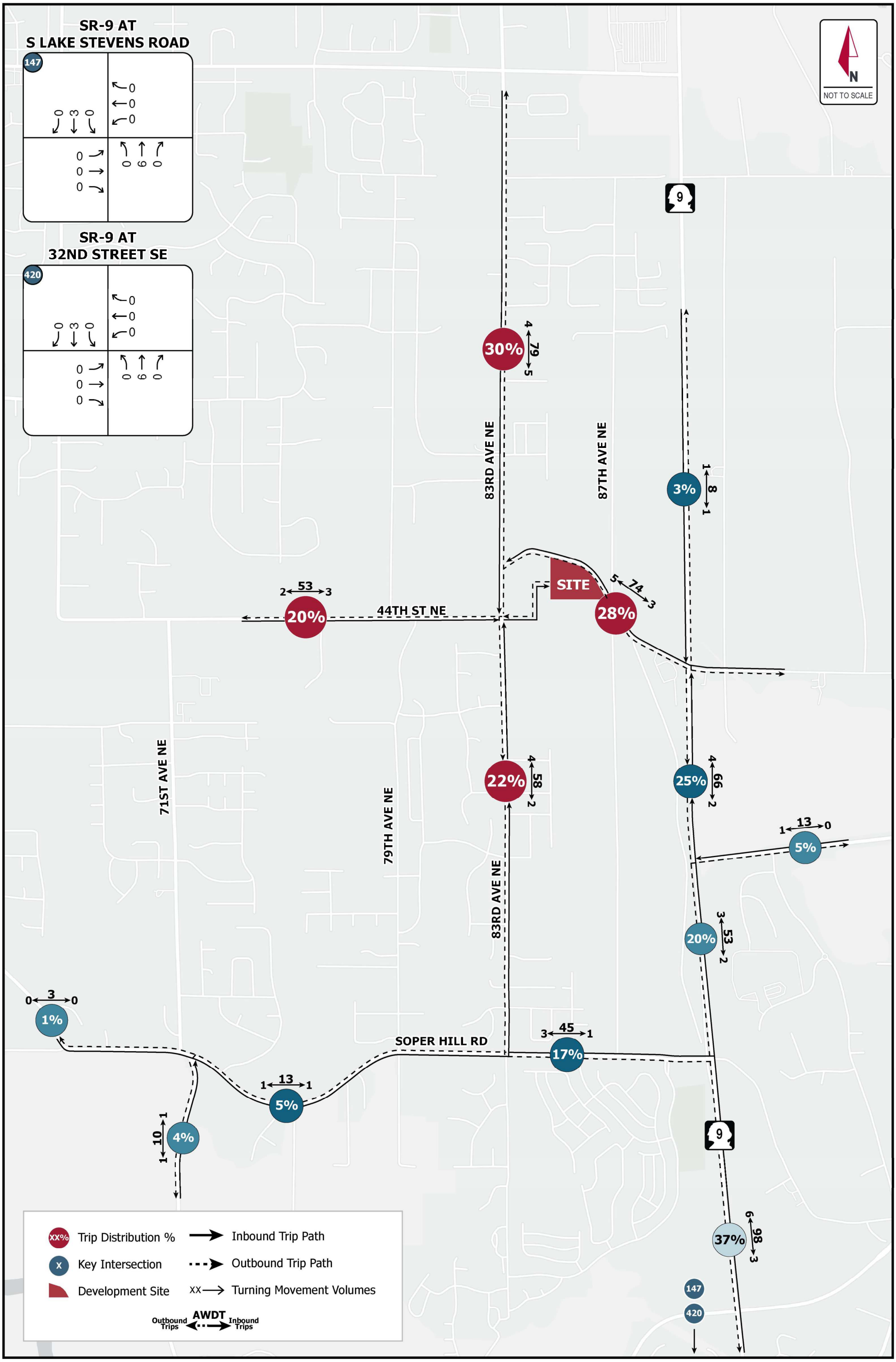
Prepared for:

South Lake Ridge, LLC
10515 20th Street SE
Suite 202
Lake Stevens, Washington 98258

Prepared by:

Kimley»Horn

February 2024
090223206
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Kimley»Horn

FIGURE 3 - PM PEAK HOUR OPENING YEAR TRIP DISTRIBUTION

MINOR PRD - CITY OF MARYSVILLE, WA 090223267

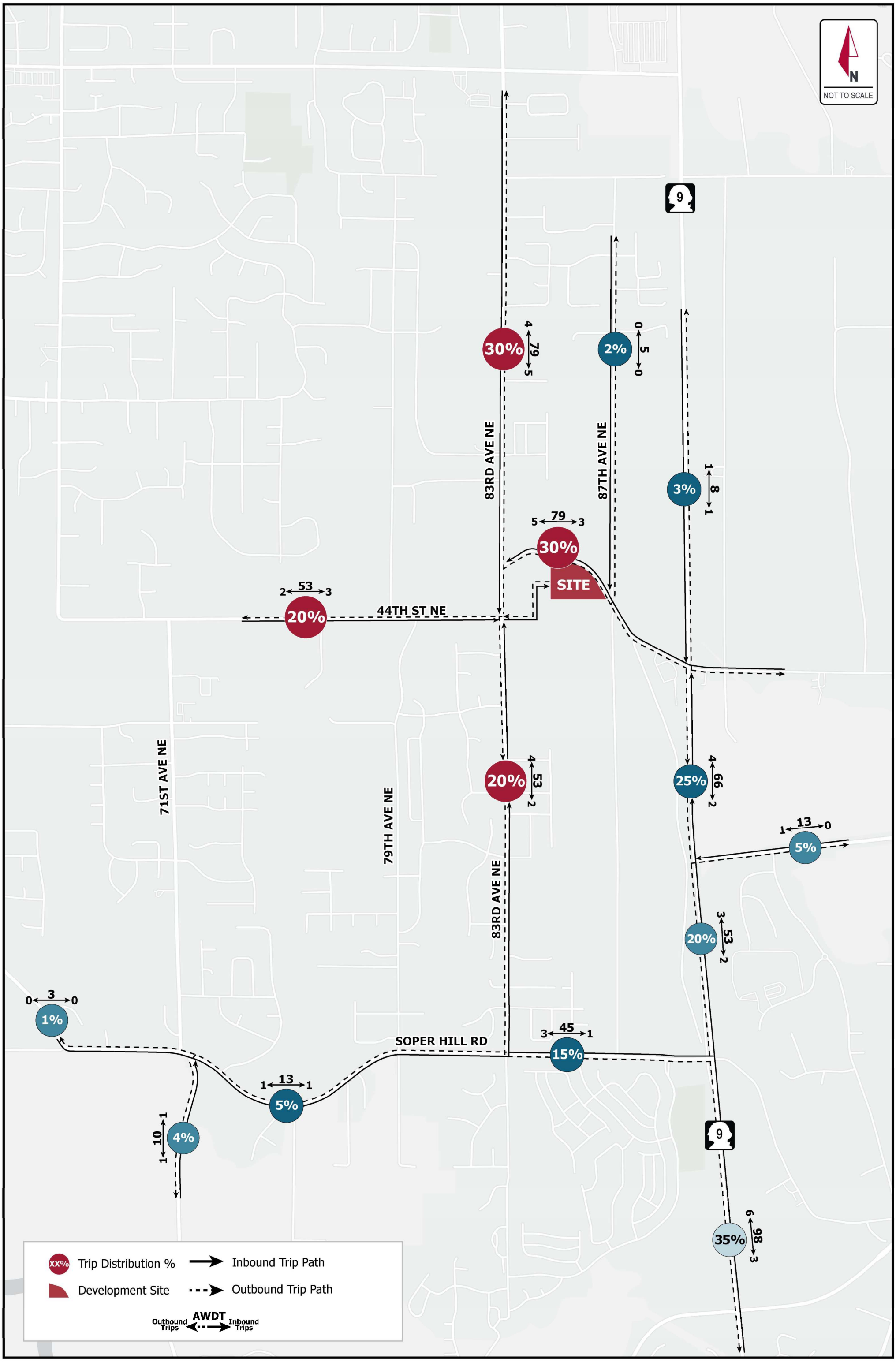


FIGURE 5 - PM PEAK HOUR HORIZON YEAR TRIP DISTRIBUTION

MINOR PRD - CITY OF MARYSVILLE, WA 0902232

TRAFFIC IMPACT ANALYSIS

CORNELIUS LACEY

JURISDICTION: CITY OF MARYSVILLE, WA
LOCATION: 83RD AVE NE, SOUTH OF E SUNNYSIDE SCHOOL RD

Prepared for:

Land Pro Group Inc.
10515 20th Street SE
Suite 202
Lake Stevens, Washington 98258

Prepared by:

Kimley»Horn

March 2024
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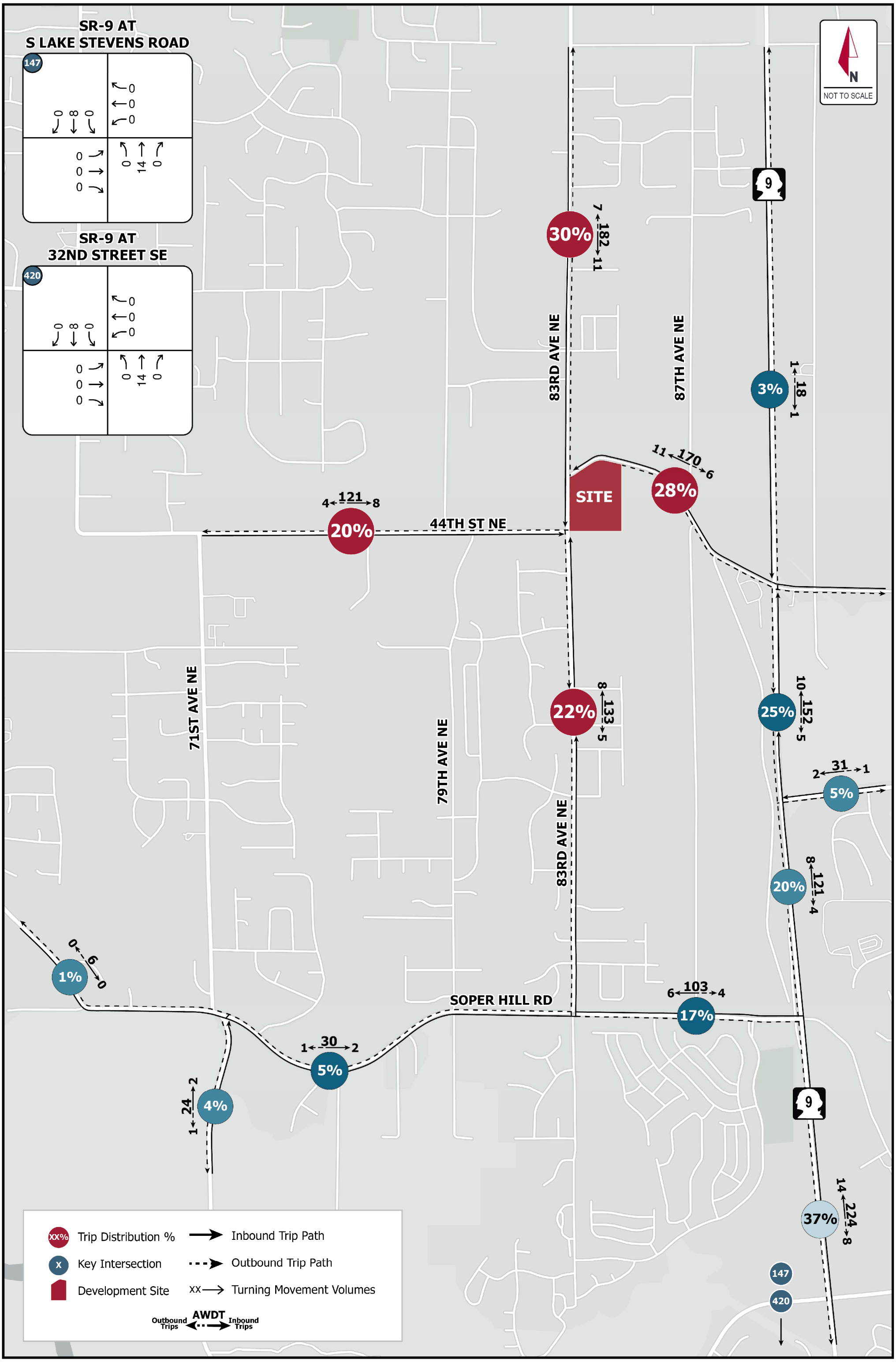


FIGURE 3 - PM PEAK HOUR OPENING YEAR TRIP DISTRIBUTION

090223146 CORNELIUS LACEY - CITY OF MARYSVILI70

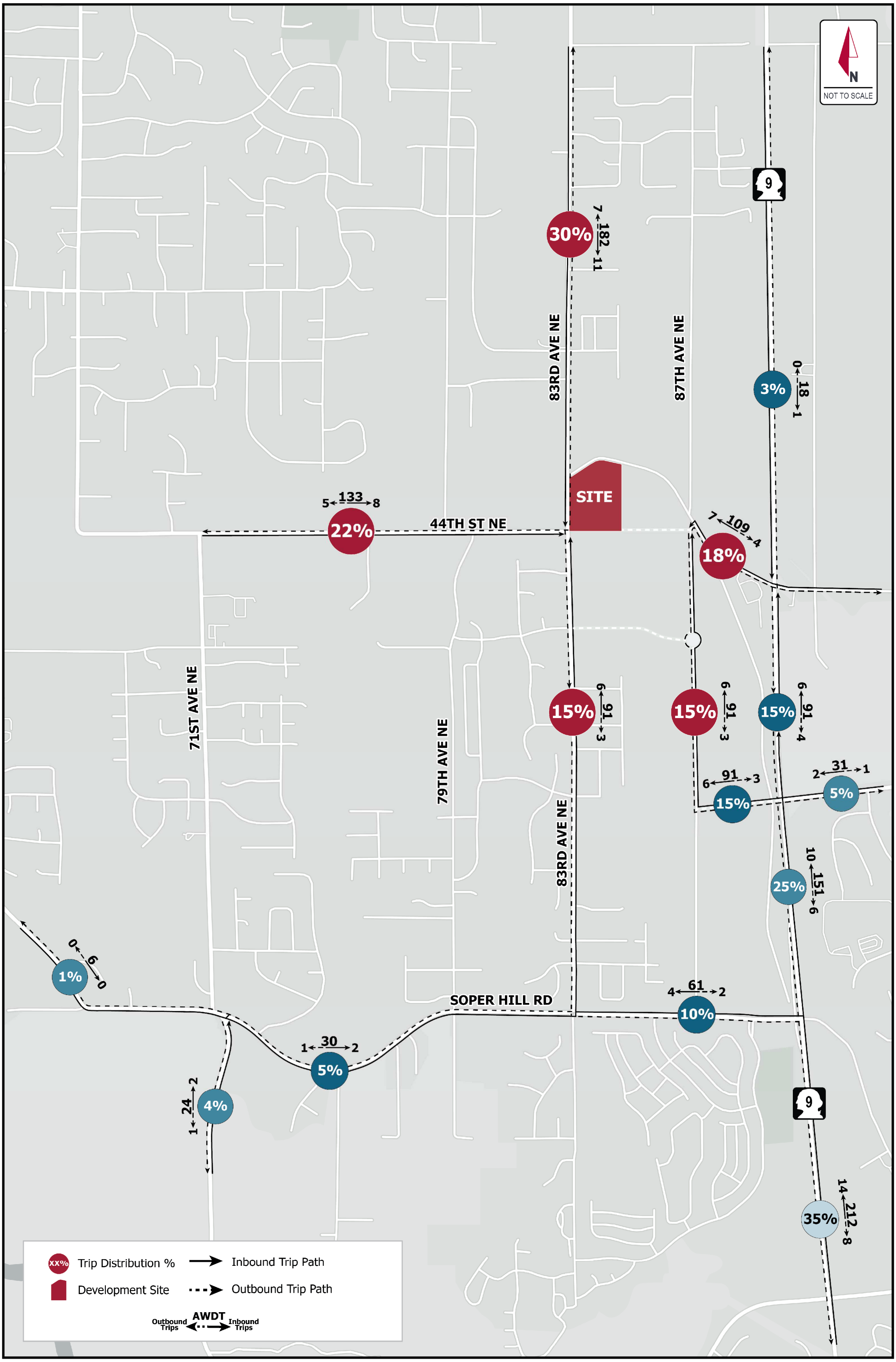


FIGURE 5 - PM PEAK HOUR HORIZON YEAR TRIP DISTRIBUTION

090223146 CORNELIUS LACEY - CITY OF MARYSVILI71

APPENDIX C

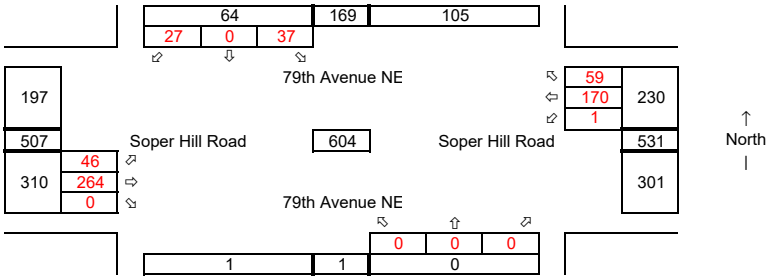
TURNING MOVEMENT CALCULATIONS

Synchro ID: 1

Existing
Average Weekday
PM Peak-Hour

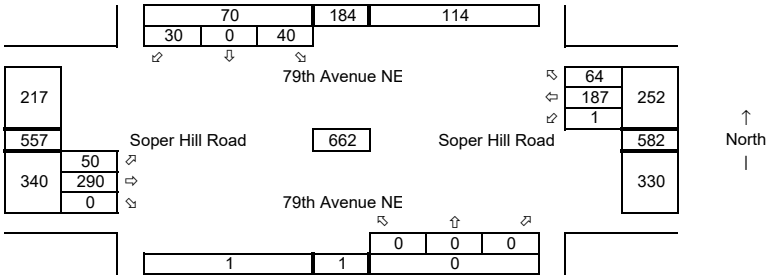
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Data Source: **TDG**

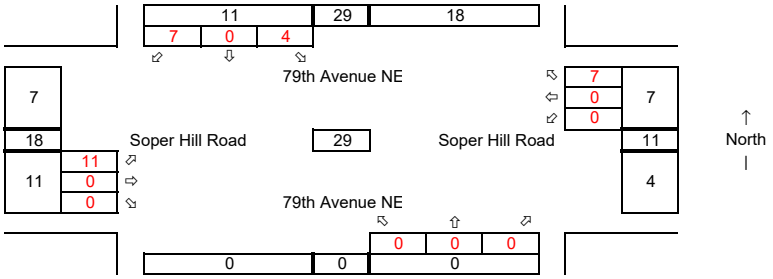


Future without Development
Average Weekday
PM Peak-Hour

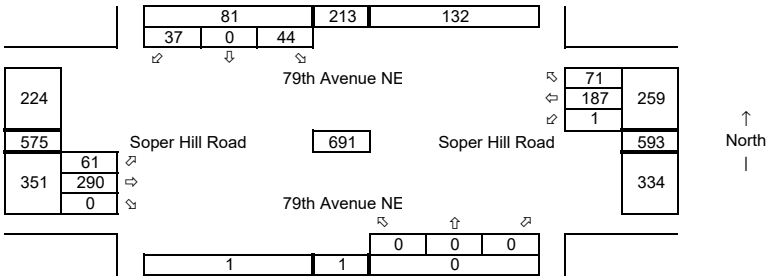
Year: 2027
Growth Rate = 3.0%
Years of Growth = 3
Total Growth = 1.0927



Total Development Trips
Average Weekday
PM Peak-Hour

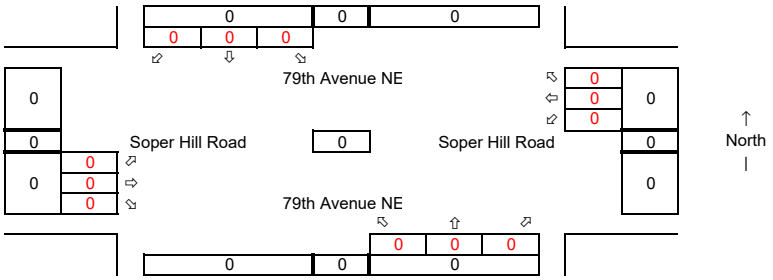


Future with Development
Average Weekday
PM Peak-Hour



Pipeline Trips
Average Weekday
PM Peak-Hour

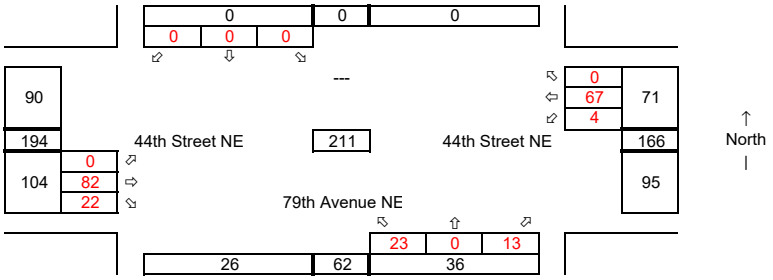
Taylor Property



Synchro ID: 2
Existing
Average Weekday
PM Peak-Hour

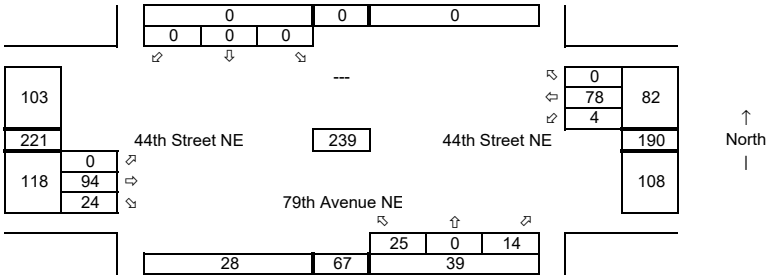
Year: **4/9/2024**

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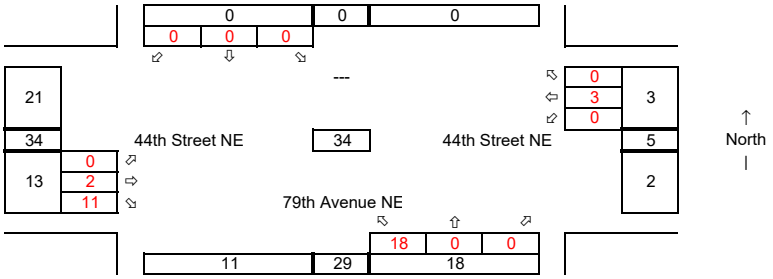


Future without Development
Average Weekday
PM Peak-Hour

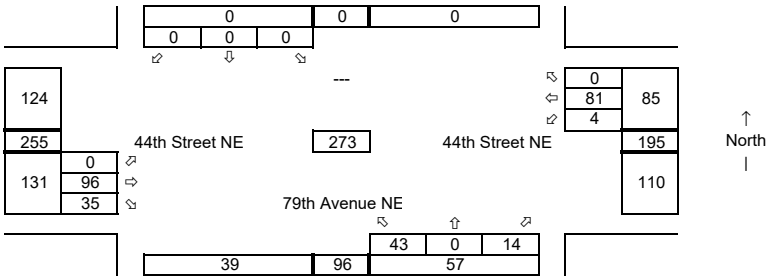
Year: 2027
Growth Rate = 3.0%
Years of Growth = 3
Total Growth = 1.0927



Total Development Trips
Average Weekday
PM Peak-Hour

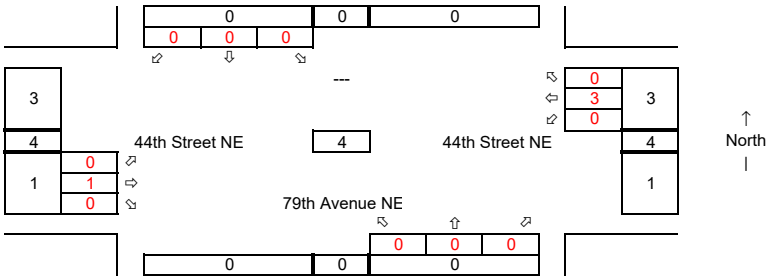


Future with Development
Average Weekday
PM Peak-Hour



Pipeline Trips
Average Weekday
PM Peak-Hour

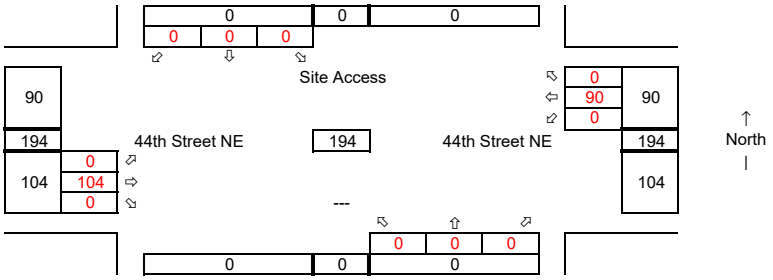
Taylor Property



Synchro ID: 3
Existing
Average Weekday
PM Peak-Hour

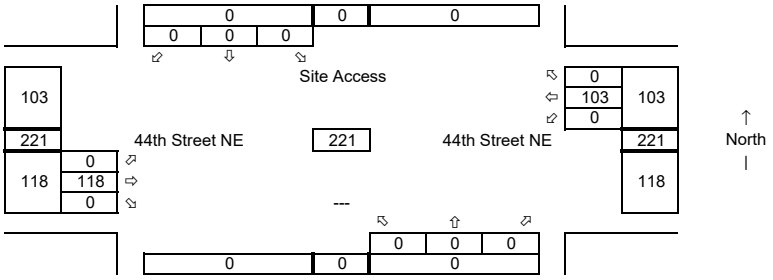
Year: **4/9/2024**

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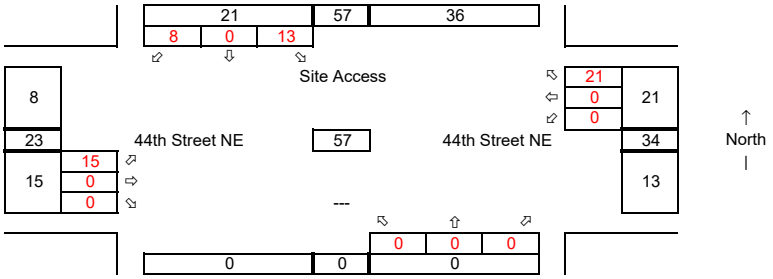


Future without Development
Average Weekday
PM Peak-Hour

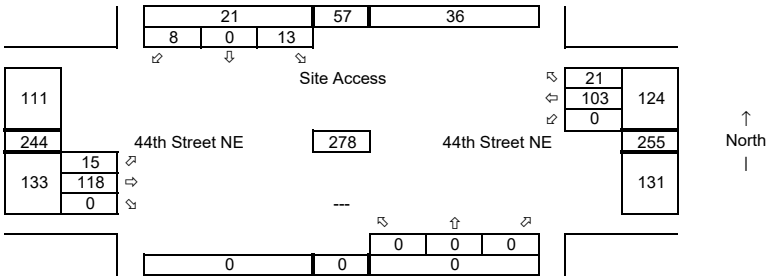
Year: 2027
Growth Rate = 3.0%
Years of Growth = 3
Total Growth = 1.0927



Total Development Trips
Average Weekday
PM Peak-Hour

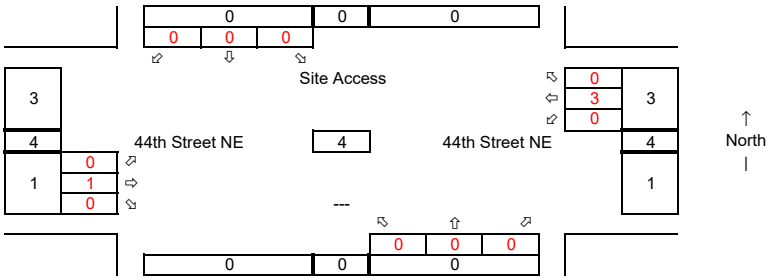


Future with Development
Average Weekday
PM Peak-Hour



Pipeline Trips
Average Weekday
PM Peak-Hour

Taylor Property

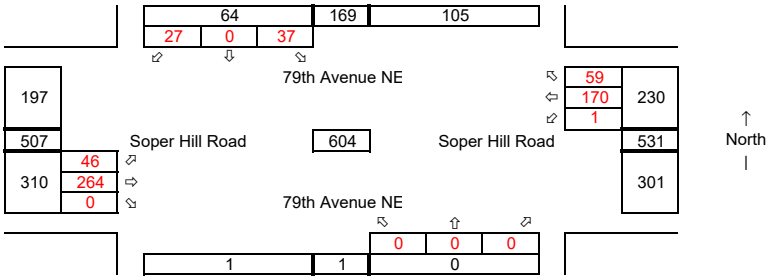


Synchro ID: 1

Existing
Average Weekday
PM Peak-Hour

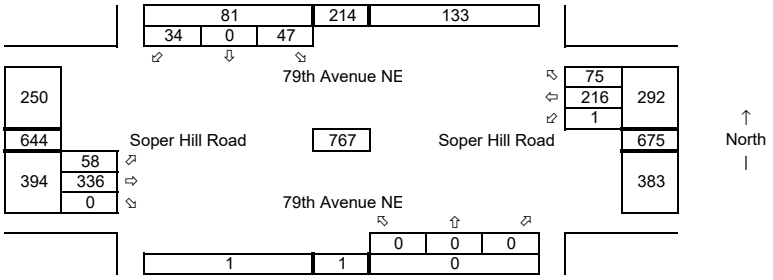
Year: **4/9/2024**

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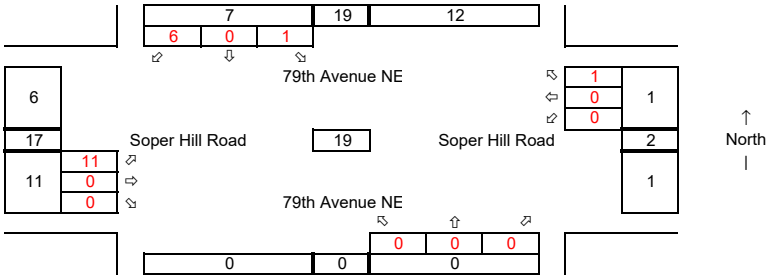


Future without Development
Average Weekday
PM Peak-Hour

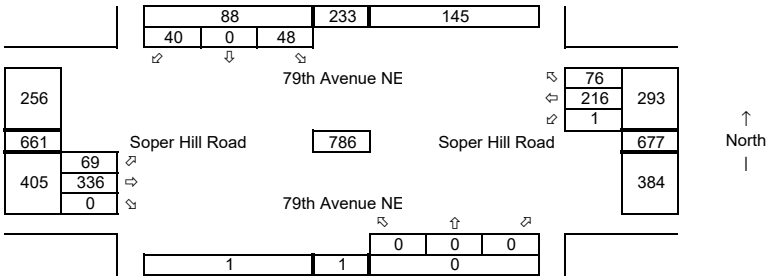
Year: 2032
Growth Rate = 3.0%
Years of Growth = 8
Total Growth = 1.2668



Total Development Trips
Average Weekday
PM Peak-Hour

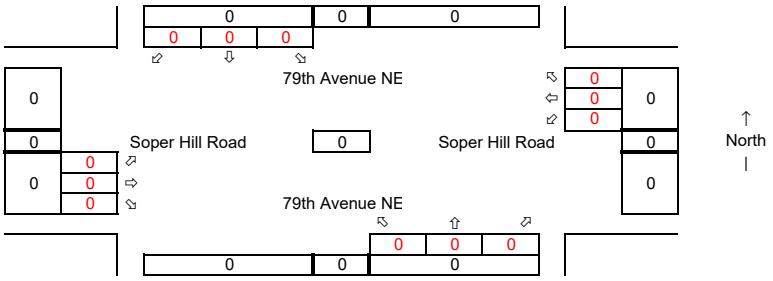


Future with Development
Average Weekday
PM Peak-Hour



Pipeline Trips
Average Weekday
PM Peak-Hour

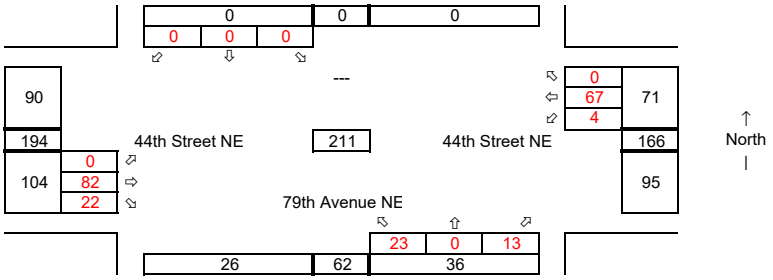
Taylor Property



Synchro ID: 2
Existing
Average Weekday
PM Peak-Hour

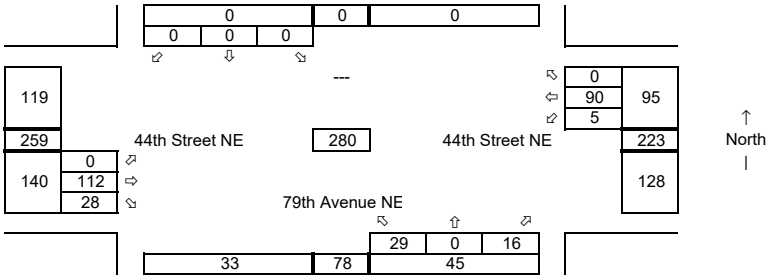
Year: **4/9/2024**

Data Source: **TDG**

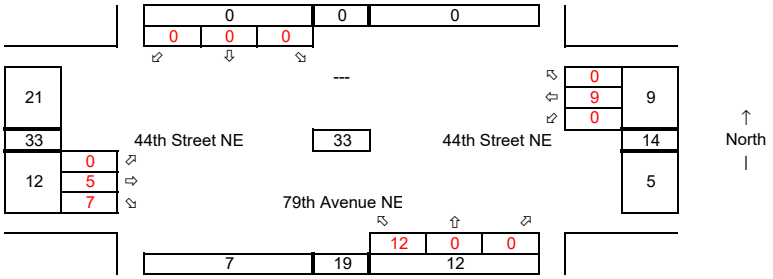


Future without Development
Average Weekday
PM Peak-Hour

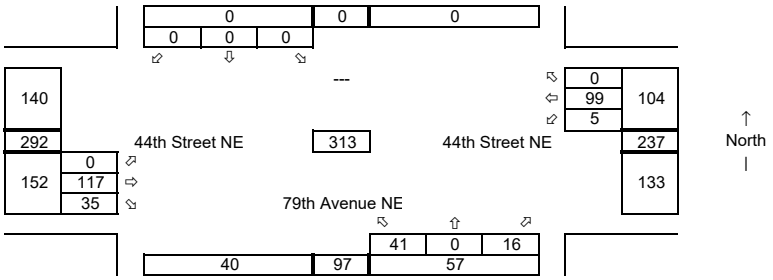
Year: 2032
Growth Rate = 3.0%
Years of Growth = 8
Total Growth = 1.2668



Total Development Trips
Average Weekday
PM Peak-Hour

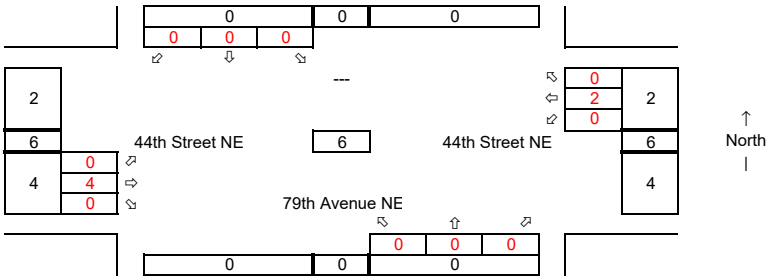


Future with Development
Average Weekday
PM Peak-Hour



Pipeline Trips
Average Weekday
PM Peak-Hour

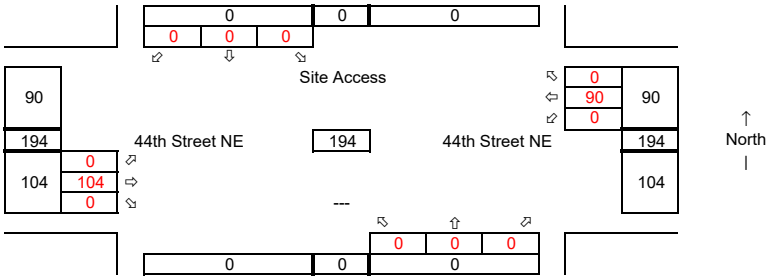
Taylor Property



Synchro ID: 3
Existing
Average Weekday
PM Peak-Hour

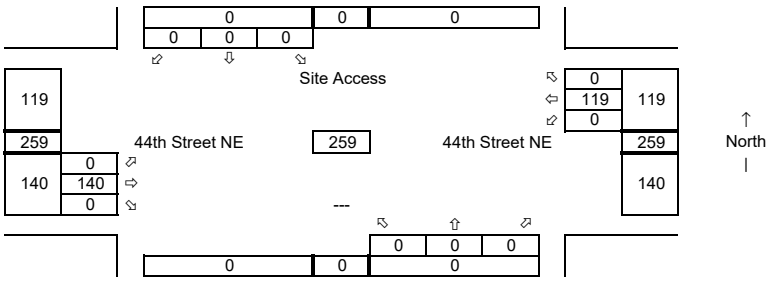
Year: **4/9/2024**

Data Source: **TDG**

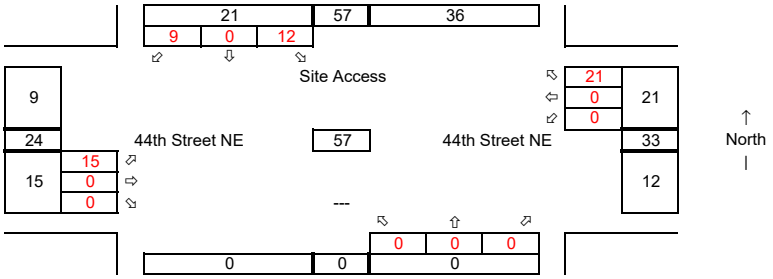


Future without Development
Average Weekday
PM Peak-Hour

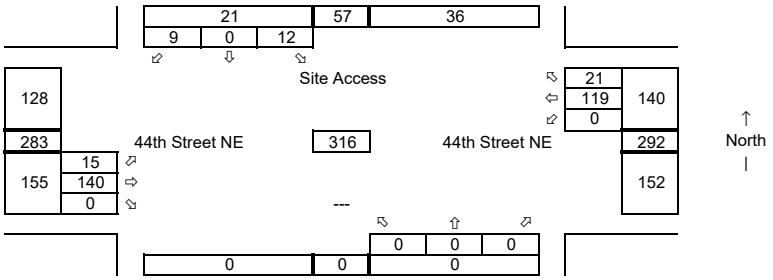
Year: 2032
Growth Rate = 3.0%
Years of Growth = 8
Total Growth = 1.2668



Total Development Trips
Average Weekday
PM Peak-Hour

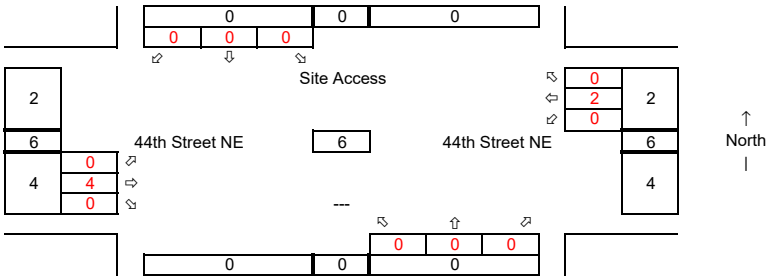


Future with Development
Average Weekday
PM Peak-Hour



Pipeline Trips
Average Weekday
PM Peak-Hour

Taylor Property



APPENDIX D

LEVEL OF SERVICE CALCULATIONS

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	46	264	0	1	170	59	0	0	0	37	0	27
Future Vol, veh/h	46	264	0	1	170	59	0	0	0	37	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	287	0	1	185	64	0	0	0	40	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	249	0	0	287	0	0	621	638	287	606	606	217
Stage 1	-	-	-	-	-	-	387	387	-	219	219	-
Stage 2	-	-	-	-	-	-	234	251	-	387	387	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1317	-	-	1275	-	-	400	394	752	409	411	823
Stage 1	-	-	-	-	-	-	637	610	-	783	722	-
Stage 2	-	-	-	-	-	-	769	699	-	637	610	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1317	-	-	1275	-	-	372	376	752	395	392	823
Mov Cap-2 Maneuver	-	-	-	-	-	-	372	376	-	395	392	-
Stage 1	-	-	-	-	-	-	608	583	-	748	721	-
Stage 2	-	-	-	-	-	-	741	698	-	608	583	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	0	13.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1317	-	-	1275	-	-	506
HCM Lane V/C Ratio	-	0.038	-	-	0.001	-	-	0.137
HCM Control Delay (s)	0	7.8	0	-	7.8	0	-	13.2
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.5

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	82	22	4	67	23	13
Future Vol, veh/h	82	22	4	67	23	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	24	4	73	25	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	113	0	182	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	81	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1476	-	807	954
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	942	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1476	-	805	954
Mov Cap-2 Maneuver	-	-	-	-	805	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1476	-
HCM Lane V/C Ratio	0.046	-	-	0.003	-
HCM Control Delay (s)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	50	290	0	1	187	64	0	0	0	40	0	30
Future Vol, veh/h	50	290	0	1	187	64	0	0	0	40	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	54	315	0	1	203	70	0	0	0	43	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	273	0	0	315	0	0	680	698	315	663	663	238
Stage 1	-	-	-	-	-	-	423	423	-	240	240	-
Stage 2	-	-	-	-	-	-	257	275	-	423	423	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1290	-	-	1245	-	-	365	364	725	375	382	801
Stage 1	-	-	-	-	-	-	609	588	-	763	707	-
Stage 2	-	-	-	-	-	-	748	683	-	609	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1290	-	-	1245	-	-	336	345	725	360	362	801
Mov Cap-2 Maneuver	-	-	-	-	-	-	336	345	-	360	362	-
Stage 1	-	-	-	-	-	-	578	558	-	724	706	-
Stage 2	-	-	-	-	-	-	717	682	-	578	558	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	0	14.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1290	-	-	1245	-	-	471
HCM Lane V/C Ratio	-	0.042	-	-	0.001	-	-	0.162
HCM Control Delay (s)	0	7.9	0	-	7.9	0	-	14.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	24	4	78	25	14
Future Vol, veh/h	94	24	4	78	25	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	102	26	4	85	27	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	208	115
Stage 1	-	-	-	-	115	-
Stage 2	-	-	-	-	93	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1458	-	780	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	931	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1458	-	778	937
Mov Cap-2 Maneuver	-	-	-	-	778	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	928	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	828	-	-	1458	-
HCM Lane V/C Ratio	0.051	-	-	0.003	-
HCM Control Delay (s)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	61	290	0	1	187	71	0	0	0	44	0	37
Future Vol, veh/h	61	290	0	1	187	71	0	0	0	44	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	315	0	1	203	77	0	0	0	48	0	40

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	280	0	0	315	0	0	711	729	315	691	691	242
Stage 1	-	-	-	-	-	-	447	447	-	244	244	-
Stage 2	-	-	-	-	-	-	264	282	-	447	447	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1283	-	-	1245	-	-	348	350	725	359	368	797
Stage 1	-	-	-	-	-	-	591	573	-	760	704	-
Stage 2	-	-	-	-	-	-	741	678	-	591	573	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1283	-	-	1245	-	-	315	328	725	342	345	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	315	328	-	342	345	-
Stage 1	-	-	-	-	-	-	554	537	-	713	703	-
Stage 2	-	-	-	-	-	-	703	677	-	554	537	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	0	14.6
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1283	-	-	1245	-	-	463
HCM Lane V/C Ratio	-	0.052	-	-	0.001	-	-	0.19
HCM Control Delay (s)	0	8	0	-	7.9	0	-	14.6
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	96	35	4	81	43	14
Future Vol, veh/h	96	35	4	81	43	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	38	4	88	47	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	142	0	219	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1441	-	769	928
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1441	-	767	928
Mov Cap-2 Maneuver	-	-	-	-	767	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	925	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	801	-	-	1441	-
HCM Lane V/C Ratio	0.077	-	-	0.003	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	118	103	21	13	8
Future Vol, veh/h	15	118	103	21	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	128	112	23	14	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	135	0	-	0	284	124
Stage 1	-	-	-	-	124	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1449	-	-	-	706	927
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1449	-	-	-	698	927
Mov Cap-2 Maneuver	-	-	-	-	698	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1449	-	-	-	771
HCM Lane V/C Ratio	0.011	-	-	-	0.03
HCM Control Delay (s)	7.5	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	58	336	0	1	216	75	0	0	0	47	0	34
Future Vol, veh/h	58	336	0	1	216	75	0	0	0	47	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	365	0	1	235	82	0	0	0	51	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	317	0	0	365	0	0	788	810	365	769	769	276
Stage 1	-	-	-	-	-	-	491	491	-	278	278	-
Stage 2	-	-	-	-	-	-	297	319	-	491	491	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1243	-	-	1194	-	-	309	314	680	318	332	763
Stage 1	-	-	-	-	-	-	559	548	-	728	680	-
Stage 2	-	-	-	-	-	-	712	653	-	559	548	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1243	-	-	1194	-	-	279	294	680	302	310	763
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	294	-	302	310	-
Stage 1	-	-	-	-	-	-	523	513	-	681	679	-
Stage 2	-	-	-	-	-	-	677	652	-	523	513	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0	0	16.3
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1243	-	-	1194	-	-	405
HCM Lane V/C Ratio	-	0.051	-	-	0.001	-	-	0.217
HCM Control Delay (s)	0	8.1	0	-	8	0	-	16.3
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	112	28	5	90	29	16
Future Vol, veh/h	112	28	5	90	29	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	30	5	98	32	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	152	0	245	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1429	-	743	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1429	-	740	911
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	793	-	-	1429	-
HCM Lane V/C Ratio	0.062	-	-	0.004	-
HCM Control Delay (s)	9.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	69	336	0	1	216	76	0	0	0	48	0	40
Future Vol, veh/h	69	336	0	1	216	76	0	0	0	48	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	75	365	0	1	235	83	0	0	0	52	0	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	365	0	0	815	835	365	794	794	277
Stage 1	-	-	-	-	-	-	515	515	-	279	279	-
Stage 2	-	-	-	-	-	-	300	320	-	515	515	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1242	-	-	1194	-	-	296	304	680	306	321	762
Stage 1	-	-	-	-	-	-	543	535	-	728	680	-
Stage 2	-	-	-	-	-	-	709	652	-	543	535	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1242	-	-	1194	-	-	263	281	680	288	296	762
Mov Cap-2 Maneuver	-	-	-	-	-	-	263	281	-	288	296	-
Stage 1	-	-	-	-	-	-	502	494	-	673	679	-
Stage 2	-	-	-	-	-	-	668	651	-	502	494	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	0	16.7
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1242	-	-	1194	-	-	402
HCM Lane V/C Ratio	-	0.06	-	-	0.001	-	-	0.238
HCM Control Delay (s)	0	8.1	0	-	8	0	-	16.7
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	0.9

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	117	35	5	99	41	16
Future Vol, veh/h	117	35	5	99	41	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	38	5	108	45	17

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	165	0	264	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	118	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1413	-	725	901
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1413	-	722	901
Mov Cap-2 Maneuver	-	-	-	-	722	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	903	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	765	-	-	1413	-
HCM Lane V/C Ratio	0.081	-	-	0.004	-
HCM Control Delay (s)	10.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	140	119	21	12	9
Future Vol, veh/h	15	140	119	21	12	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	152	129	23	13	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	152	0	-	0	325	141
Stage 1	-	-	-	-	141	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1429	-	-	-	669	907
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1429	-	-	-	661	907
Mov Cap-2 Maneuver	-	-	-	-	661	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	848	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1429	-	-	-	748
HCM Lane V/C Ratio	0.011	-	-	-	0.031
HCM Control Delay (s)	7.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Traffic Mitigation Offer to Snohomish County

The applicant completes part one and submits it to the city with a completed county traffic worksheet. The city completes part two and sends it to the county. The county completes part three and sends it back to the city.

Part One to be completed by Applicant

Basic Development Information

Name of City in which development is located City of Marysville

Name of Proposed Development Williams Pointe

City Project File Number (if known)

Name of Applicant

Address of Applicant

Proportionate Share Calculation: *Choose Option A or B*

☐ Option A: Based on a percentage of the County's adopted impact fee (Attach traffic worksheet.)

1. The applicable percentage of the County's fee: _____%

2. Net New Average Daily Traffic: _____ADT

3. The adopted County impact fee for this development: _____$/ADT

4. Total Proportionate Share Amount: $_____

☒ Option B: Based on a comprehensive traffic study (Attach traffic worksheet and traffic study)

__X__ No road improvements are impacted. Hence, proportionate share amount is zero.

_____T he following road improvements are impacted. The calculation of proportionate shares is summarized below.

List by Names/Description the Impacted County Projects (attach other pages if necessary)	County Project ID#	PHTs Impacting Project	Capacity Cost per PHT	Proportionate Share Obligation per Impacted Project
1. There are not any Snohomish County improvement projects that will be impacted by 3 directional PM peak-hour trips generated by the development. Snohomish County traffic mitigation fees should therefore not be required for the development according to the provisions of the interlocal agreement.				

4. Total Proportionate Share Amount (sum of obligations for each impacted project) $ 0.00

☐ **Trip Distribution and Assignment if Required**

If required, attach AM and PM peak-hour trip distribution and assignment. (Attach traffic worksheet showing whether or not it is required and traffic study).

☒ **Mitigation of Other Impacts if Required for Developments Generating More than 50 Peak-Hour Trips**

Mitigation of Impacts on Level of Service

__X__No impact or not applicable ____ Mitigation as described in attached traffic study.

Mitigation of Impacts on Inadequate Road Conditions

__X__No impact or not applicable ____ Mitigation as described in attached traffic study.

Mitigation for Impacts on Access or Circulation

__X__No impact or not applicable ____ Mitigation as described in attached traffic study.

☒ **Written Offer**

The Applicant hereby voluntarily agrees to pay the total proportionate share amount shown above for impacts of the proposed development on the capacity of Snohomish County roads and provide mitigation of all other impacts as indicated above and described in attached documents.

BY: _____Date_____

Signature by Authorized Official of Applicant or Authorized Representative

Print Name and Title _____

Instructions to Applicant. Submit this offer, a completed county traffic worksheet, and any other attachments to the city with your initial application or send directly to Deb Werdal, Snohomish Co. DPW Traffic, 3000 Rockefeller M/S 607, Everett WA 98201.

Part Two: To be completed by the City

Receipt of Written Offer and Attachments by City and Routing to County

Name of Proposed Development Williams Pointe Subdivision

City Project File Number PA24-014

Date Received 5.1.2024

City Staffer Assigned to Project Emily Morgan

Address 501 Delta Ave, Marysville, WA 98270

Phone 360.363.8216

Instructions to City. Send this offer and all attachments to Deb Werdal, Snohomish Co. DPW Traffic Operations, 3000 Rockefeller M/S 607, Everett WA 98201. Send copy to staffer shown above.

BY: EM Date 5.1.2024 Emily Morgan, Senior Planner

Initialed by City Staffer | Print Name and Title

Part Three: To be completed by Snohomish County

Receipt of Offer and Attachments by Snohomish County and Routing Back to City

Name of Proposed Development

City Project File Number

Received by:

_____Date_____ _____

Initialed by County Staffer | Print Name and Title

Snohomish County Mitigation Request to City

Snohomish County has reviewed the traffic study worksheet and mitigation offer submitted by the applicant and has determined as follows:

☐ Snohomish County requests that the City impose the mitigation offered above as a condition of approval for the Development. Snohomish County agrees to accept changes in the mitigation payment amount shown above resulting from TDM or lot-yield adjustments approved by the City.

☐ Snohomish County requests that the City require additional supplemental information to adequately evaluate the proposed development's impacts. ☐ The information requested is shown in the notes below.

BY:

_____Date_____ _____

Signature by Authorized County Staffer | Print Name and Title

Routing Back to City

Instructions to County Send this offer and all attachments to the City Staffer shown in Part Two above.

Sent by:

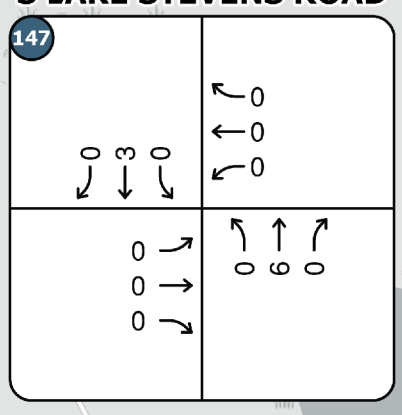
_____Date_____ _____

Initialed by City Staffer | Print Name and Title

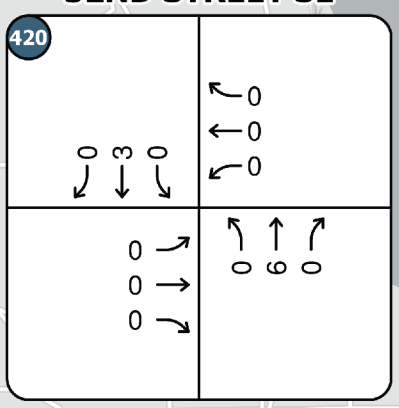
Notes

NOT TO SCALE

SR-9 AT
S LAKE STEVENS ROAD



SR-9 AT
32ND STREET SE



67TH AVENUE NE
83RD AVENUE NE
SUNNYSIDE BOULEVARD
71ST AVENUE NE
79TH AVENUE NE
SOPER HILL ROAD
SITE
LOCAL
9
528
92
147
420

10%
2%
10%
1%
21%
19%
1%
4%
41%
7%
52%
3%
1%
20%
31%
2%
17%
4%

Trip Distribution %
Key Intersection
Development Site
Inbound Trip Path
Outbound Trip Path
XX Turning Movement Volumes
AWDT (Outbound Trips / Inbound Trips)

Kimley»Horn

FIGURE 3: 2027 OPENING YEAR TRIP DISTRIBUTION - PM PEAK HOUR
WILLIAMS POINTE - CITY OF MARYSVILLE, WA (09022404.)

Snohomish County Traffic Worksheet and Traffic Study Requirements for Developments in the City of Marysville

Snohomish County government, through an interlocal agreement (ILA) with the City of Marysville, may request traffic mitigation measures from any new development in the city that impacts roads in the unincorporated county. The City will impose the requested mitigation to the extent that the City determines that the mitigation is reasonably related to the impacts of the development. To determine the impacts, and to determine reasonable mitigation measures, the City of Marysville requires a traffic study from any development in the city that may have impacts on county roads. This 'traffic study' may be as simple as completing sections one and two of the county traffic worksheet below, or having a professional traffic engineer conduct a formal traffic study consistent with the requirements in section three below.

- If a development generates less than ten peak-hour trips and the applicant chooses Option A for mitigation payment (standard payment by percent of county impact fee), then the applicant will generally only have to fill out the first two sections of this traffic worksheet and complete a mitigation offer (see section four).
- However, if a development generates more than ten peak-hour trips, or if the applicant chooses Option B for mitigation payment (comprehensive impact analysis), then the applicant will have to fill out the first section of this worksheet, complete a separate traffic study consistent with the requirements in section three, and complete a mitigation offer (see Section Four).
- Applicants should submit all documents *to the City* as part of their initial submittal.
- Traffic study requirements for impacts on county roads are based on the County's traffic mitigation ordinance (Chapter 30.66B) and the city/county ILA. At the end of this document find references to the county contacts and county web site (sources for may of the documents related to traffic mitigation).
- Following review of the documents submitted, the County may request supplemental information and analysis as necessary to determine the impacts of the development in accordance with the city/county ILA. The City will require the proposed development to submit the supplemental information and analysis to the extent that the City determines that it is necessary to determine the impacts of the development.

Section One (1) Worksheet General Information

1. Name of Proposed Development Williams Pointe

   City Development File Number (if known)_____

2. Name, Address and Phone Number of Applicant_____

3. Development Site Address 44th Street NE at 75th Avenue NE alignments

4. Is it a residential or commercial development? Residential

5. Description of Development (size and specific type)_____
   57 new Single-Family Detached Residential Units

6. How many new vehicle trips are expected to be generated by the proposed development? (For many common types of developments this information can be provided by the city or the county. For more complex developments trip generation may have to be determined under section three below)

   40 AM Peak Hour 57 PM Peak Hour 537 Average Daily Trips (ADT)

7. Proportionate Share Impact Mitigation: All applicants have two options in determining the amount of their traffic mitigation payment:

   _____ For determining the amount based on a percentage of the county fee go to section two.

   _X_ For determining the amount based on a comprehensive traffic study go to section three.

Section Two (2) Proportionate Share Determined by Percentage of County Impact Fee

2(a) Calculation of Payment Amount

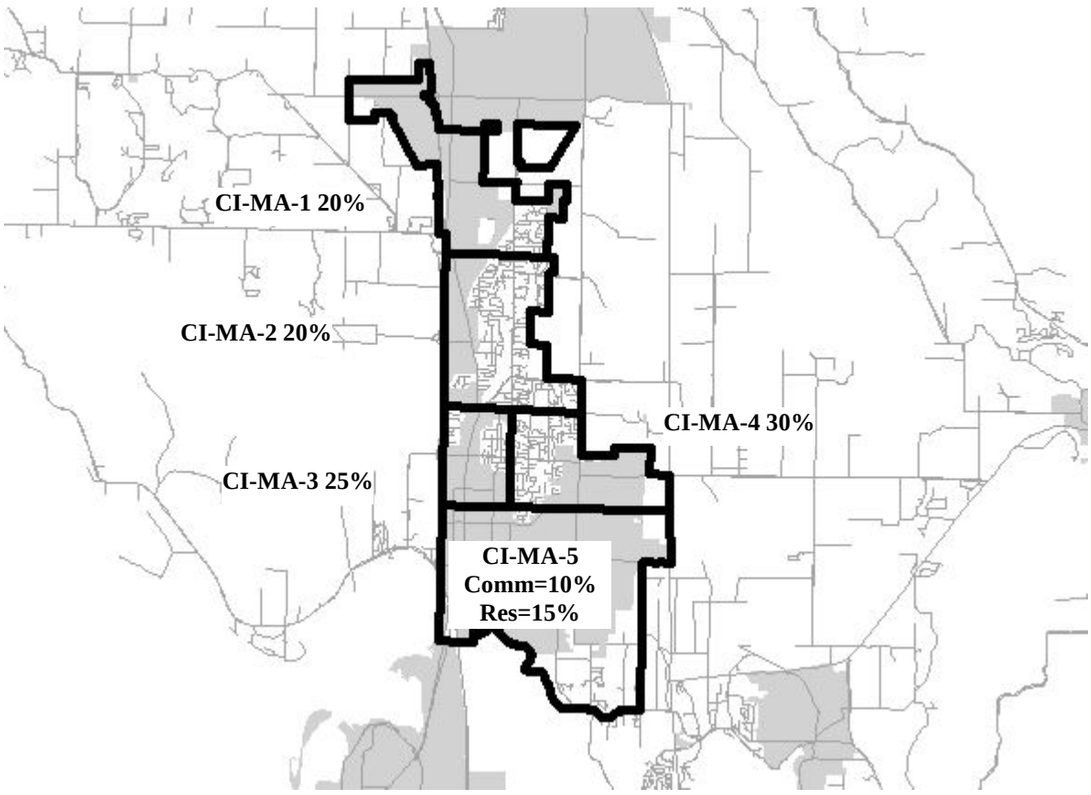
1. Standard default estimated percentage of trips impacting the City streets based on subareas (See below) _____%

or

2. Other Percentage: (Note: See author's qualifications in section three below.) Estimated percentage of trips impacting county roads from attached trip distribution: _____ %

Sub-Area ID #	* City Subarea Description	Residential Developments	Commercial Developments
CI-MA-1	North of 136th ST SE.	20%	20%
CI-MA-2	North of 100th ST NE and South of 136th ST SE.	20%	20%
CI-MA-3	North of 76th ST NE, South of 100th ST SE, and West of 51st AV NE.	25%	25%
CI-MA-4	North of 76th ST NE, South of 100th ST SE, and East of 51st AV NE.	30%	30%
CI-MA-5	South of 76th ST NE.	15%	10%

* Note: Boundaries are either street centerlines or imaginary extensions of street centerlines in places where the actual streets do not exist.



3. Development New Average Daily Trip Generation (ADT)_____

4. Type of Development (Residential or Commercial)_____

5. County Commercial Fee Rate $_____ 6. County Residential Fee Rate $_____

(Note: Consistent with county code and the ILA, developments pay the rate in effect at the time of their submittal. As of 07/13/11 the rates were $39 for commercial developments and $46 for residential developments. Through ordinance, the County Council can change these rates at any time, so consult with the County or look at Snohomish County Code 30.66B.330 to find the latest fee rates.)

7. Calculation of Proportionate Share Impact Mitigation

_____	×	_____	×	_____	=	$_____
#1 or #2 above: % of trips		#3 above: ADT		#5 or #6 above: Fee Rate		proportionate share mitigating payment

2(b) Determining whether or not an additional traffic study is necessary

Will the development generate more than 10 peak-hour trips *or* are there other impacts that need to be addressed (e.g., level of service, safety, or access and circulation)

_____ No. Skip section three and go to section four.

_____ Yes. Read the introduction to section three and skip to section 3(b).

Section Three (3) Traffic Study Requirements

Introduction: This section outlines requirements for traffic studies for impacts on County roads. If an applicant chooses (or is required) to complete a traffic study, then it should be submitted along with this worksheet and a mitigation offer. (Note on Author's Qualifications: A traffic study under this section must be conducted by an engineer licensed to practice in the state of Washington with special training and experience in traffic engineering and, preferably, membership in the institute of transportation engineers. For individuals/firms not on the City's approved list, the developer will provide, with the traffic study, the credentials of the individual or firm performing the traffic study certifying compliance with these qualifications.)

3(a) Proportionate share impact mitigation based on comprehensive traffic study

1. Development's Trip Generation and Distribution. Determine the PM peak-hour trip generation and distribution for the development consistent with Section 3(b) below.
2. Impacted Improvements. Determine which of the road sections with planned improvements in the county's impact fee cost basis (Transportation Needs Report Appendix D) are impacted by three or more development-generated *directional* PM peak hour trips (PM PHT).
3. Current Counts. For each impacted improvement, provide current traffic counts to determine the PM PHT.
4. Reserve Capacity. Determine "reserve capacity" for each impacted improvement by subtracting the current PM PHT from the maximum service volume (MSV) for the existing facility. Reserve capacity is set to zero if current PM PHT exceeds the MSV. For MSVs see County DPW Rule 4224.
5. New Capacity. New capacity is the incremental increase in PHT that could be accommodated with the planned improvement. Determine the new capacity of each impacted improvement by subtracting the current MSV from the future MSV after the improvement.
6. Chargeable Capacity. For each impacted improvement, add the reserve capacity to the new capacity.
7. Final Adjusted Cost. Find the cost of each impacted improvement and make any adjustments used by the County for tax credits (see Transportation Needs Report Appendix D).
8. Capacity Cost per Peak-Hour Trip. For each impacted improvement, determine the capacity cost per PM PHT by dividing the final adjusted improvement cost by the chargeable capacity.
9. Traffic Impacts. From step one above, take the *total* number of PM PHT (in both directions) impacting each planned improvement.
10. Proportionate Share. For each impacted improvement, determine the proportionate share impact mitigation by multiplying the capacity cost per peak-hour trip by the number of PM PHT impacting the improvement.

3(b) Trip Generation and AM and PM Peak Hour Trip Distribution and Assignment

Calculate AM, PM and Daily trip generation consistent with the ITE Trip Generation Handbook and Snohomish County Public Works Rule 4220. Determine the trip distribution and assignments consistent with the County's document titled "Format for Trip Distributions"(available at County web site, see below).

- Within the developments transportation service area (TSA) the distributions will be carried out to each key intersection at which the approach or departure volumes on any leg have three (3) or more peak hour trips. Get the most current list of key intersections on the web site described below. Trips should be distributed onto the road system as it is expected to be in six years.
- The distribution should be a schematic map showing the broad distributions of trips in terms of percentages on different roads. Show all City boundaries.
- The assignment should be a schematic map with the impacted key intersections identified by ID# and turning movements for each shown in separate diagrams on the same page or on different pages. The assignment should also be presented in tabular form listing each intersection by intersection ID#, and the number of trips at each movement.

3(c) Additional Analysis for Developments Generating More Than Fifty (50) Peak Hour Trips

For large developments (i.e., those generating more than 50 peak-hour trips), the County may request mitigation for impacts on the level of service of County roads, documented safety locations (the County calls such locations "inadequate road conditions" or "IRCs"), and access or circulation. The traffic study requirements below are intended to disclose impacts. Based on this information the County may request through the City that the applicant provide additional information showing possible mitigation measures. If any off-site improvements were needed for mitigation the County would work with the applicant to determine requirements for right-of-way, construction plans, right-of-way use permits, construction/maintenance bonds, and other issues.

Impacts on Level of Service (LOS) of County Arterials

Contact Snohomish County Public Works for the most current list of arterial units in arrears and critical arterial units. Identify any arterial units in arrears or critical arterial units impacted by three or more directional peak-hour trips.

Impacts on Inadequate Road Conditions

Contact Snohomish County Public Works for a list of the current IRCs. Identify any IRCs impacted by three or more peak-hour trips. Note: Unlike LOS impacts in which at least three or more peak hour trips have to be added in one direction to require disclosure (e.g., 3 westbound), for IRCs, any three peak hour trips added to IRC locations are considered an impact for which disclosure is necessary (e.g., 2 westbound plus 1 eastbound).

Impacts on Access or Circulation

The County may request improvements to existing roads to provide safe and efficient access and/or circulation. In some instances, the County may request provisions for future County roads identified in the Comprehensive Plan or in Small Area Transportation Studies. If so, the County will request specific additional information through the City.

Section Four (4) Traffic Mitigation Offer to Snohomish County

The applicant should complete a traffic mitigation offer to Snohomish County that summarizes the mitigation identified in the county traffic worksheet and any additional traffic study. This will facilitate timely review of the development and processing of the application. The form to use for the mitigation offer is titled "Traffic Mitigation Offer to Snohomish County." This form is typically provided to all applicants along with this traffic study checklist. In addition, copies are available from the county contacts or the Snohomish County web site shown below.

Additional Information

County Web Site

Snohomish County Public Works has a web site with many documents related to traffic studies and mitigation requirements for developers. From the Snohomish County Home Page go to:

Departments/Public Works/Divisions/TES/ProgramPlanning/3066B

County Contacts

- Elbert Esparza, Snohomish County DPW Traffic, 3000 Rockefeller M/S 607, Everett WA 98201, (425) 388-3184, elbert.esparza@snoco.org

Williams Pointe

Drainage Report

Presented to: City of Marysville

Williams Pointe

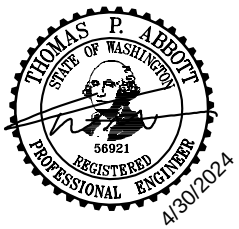
Drainage Report

Prepared for
Keystone Land, LLC
Contact: Joe Long
13805 Smokey Point Blvd., Suite 102
Marysville, WA 98271

Prepared by

Riley Mckee

Approved by
Tom Abbott, PE



April 2024 ***Job No: 23-0010***

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SECTION 1: PROJECT OVERVIEW

The proposed Williams Pointe project is an approximately 13.09-acre site. The proposed project is a 59-lot single-family development on parcel numbers 30053500303600, 30053500303700, 00590700018101, and 29050200200400 in Marysville, WA. Access drives along with associated private and public utilities are proposed to serve project development. Frontage improvements along 75th Ave NE and 44th ST NE consisting of pavement, planter, and sidewalk improvements to City standards are proposed. See the Vicinity Map in Appendix 1 for visual representation of the subject property.

Existing Site

The parcel number 00590700018101 is currently unoccupied while parcel numbers 30053500303600, 30053500303700, and 29050200200400 are occupied by an existing house and associated out buildings on each lot. The project parcels are currently zoned R-6.5 high-density single-family residential. Existing ground cover consists of forested areas along with two wetland areas on the project site.

The proposed development will exist within the bounds of two stormwater threshold discharge basins as all site runoff from developed surfaces meets within ¼ mile from the project site downstream. Wetland Resources has prepared a Wetlands Critical Areas Report dated April 2024 on the site. The findings indicate that there are two wetlands in the project (located offsite on parcel #29050200206500 and parcel #30053500303600). Lots 1-47 are located within Threshold Discharge Basin A, while Lots 48-59 are located in Threshold Discharge Basin B.

A Geotechnical Report has been prepared by Earth Solutions NW in April 2024 on the site. Please reference the geotechnical report for detailed soils information. The larger portion of the site containing lots 1-47 generally slopes westward toward the onsite wetland. Lots 48-59 slopes eastward towards the offsite wetland on parcel #29050200206500. A portion of offsite property adjacent to the site slopes onto the site from parcel #00590700018200. This area will be considered upstream run-on in the stormwater flow control modeling to be done for Threshold Discharge Basin A.

Proposed Development

The proposed development will construct 59 single-family lots and associated driveways, and roads. Access drives along with associated private and public utilities are proposed to serve project development. Frontage improvements along 44th ST NE and 75th Ave NE are proposed.

Proposed Drainage System

This project is designed to comply with the 2019 Department of Ecology Stormwater Manual for Western Washington (2019 DOE SWMWW). Lots 1-47 are located within Threshold Discharge Basin A while lots 48-59 are located in Threshold Discharge Basin B. A portion of offsite property adjacent to the site slopes onto the site from parcel #00590700018200. This area will be considered upstream run-on in the stormwater flow control modeling to be done for Threshold Discharge Basin A. Stormwater will be mitigated for flow control in both Threshold Discharge Basins (TDAs) via detention ponds that are proposed to be located in tracts 996 and 998.

Within either TDA, a perkfilter water quality treatment unit located downstream of either pond will be used to treat stormwater runoff to water quality treatment requirements. Onsite development will disturb 7.24 AC of that will be collected to the detention ponds for mitigation and stormwater quality treatment. Frontage improvements consisting of new sidewalk pavement and planters along 44th St NE and 75th Ave NE will drain to the detention ponds unless noted to bypass detention due to topographical restraints. 5.24 AC of new/replaced impervious is proposed for project improvements.

See Section 4.0 for additional discussion regarding proposed stormwater management and water quality treatment measures.

Erosion/Sedimentation Control

Erosion control measures that will be utilized during construction will include a combination of silt fence, storm drain inlet protection, interceptor swales, and sediment ponds. See Section 2.0 for discussion of how SWPPP Elements are addressed.

Minimum Requirements

Per the 2019 DOE Manual, Minimum Requirements 1-9 apply to the proposed development.

Minimum Requirement #1: Preparation of Stormwater Site Plans

This report along with the preliminary plans satisfies the minimum requirement.

Minimum Requirement #2: Construction Stormwater Pollution Prevention
See Section 2 of this Report for the SWPPP BMP Elements, and the SWPP (submitted as a separate document) for a complete discussion of erosion control BMP's and their use specific to the site.

Minimum Requirement #3: Source of Pollution
Permanent source control BMPs are not applicable for the subject site since the associated activities for the new residence do not fall within the types of facilities listed within Volume IV of the DOE Manual (Residential developments are not required to implement source control BMP's). BMPs for erosion and sedimentation control will be specified in the Construction Plans and the CSWPP.

Minimum Requirement #4: Preservation of Natural Drainage Systems and Outfalls
Runoff from developed site areas will continue to discharge into each of Threshold Discharge Basins A and B.

Minimum Requirement #5: On-Site Stormwater Management
The project proposes BMP T5.13 soils to be underlain within all pervious areas that are disturbed by development. Generally, all other infiltration related BMPs are infeasible due to the presence of onsite till soils. Generally, other dispersion related BMPs are considered infeasible due to the proximity of slopes to the developed impervious coverage of the site and the lack of available dispersion length. Please see Section 4.5 for additional discussion of Onsite Stormwater Management and Low Impact Development BMP feasibility.

Minimum Requirement #6: Runoff Treatment
As the project will exceed the 5,000 SF threshold of new/replaced PGIS, the project is required to provide basic water quality treatment per the DOE Manual. A Perkfilter water quality treatment unit will be installed downstream of each detention pond to meet this requirement. Additionally, a third Perkfilter catch basin will be located within the 44th St NE curbline to treat bypassed stormwater runoff in the 44th St ROW Bypass Basin.

Minimum Requirement #7: Flow Control
The project will exceed the 10,000 SF new/replaced impervious threshold and is required to provide flow control for each TDA. Two concrete detention ponds will be located in tract 996 and tract 998 on the site. These ponds will gravity discharge at a historic, mitigated rate into each respective TDA. Please see Section 4.0 for additional flow control modeling and parameters for detention sizing.

Minimum Requirement #8: Wetlands Protection
Wetland Resources has prepared a Critical Areas Report dated April 2024 on the project site. The findings indicate two on-site wetlands both located on parcel #30053500303600. Two additional wetlands are noted offsite. There was no stream channelization identified on site. Buffer averaging is planned within the buffer areas associated with the wetlands. Stormwater from the site will be discharged to the onsite wetland. Wetland areas will not be disturbed during site construction and will be protected with silt fencing and other BMPs throughout construction.

Minimum Requirement #9: Operation and Maintenance
See Operations and Maintenance in Section 6 of this report.

SECTION 2: TEMPORARY EROSION AND SEDIMENT CONTROL DESIGN

SWPPP Design Elements

A Construction Stormwater Pollution Prevention Plan (SWPPP) will be provided prior to construction. The SWPPP report is modeled under the guidelines of the DOE Manual. Construction SWPPP Elements #1 through #13 are addressed below.

Element #1 – Mark Clearing Limits

All clearing limits will be delineated with high visibility plastic fence and/or silt fence. See sheets ER-01 of the construction plans for locations and details.

Element #2 – Establish Construction Access

Stabilized construction accesses will be installed as shown on the preliminary plans. See sheets ER-01 and ER-02 of the construction plans for locations and details.

Element #3 – Control Flow Rates

Detention of construction period runoff will be provided by means of sediment ponds on the site. See sheets ER-01 of the construction plans for location and details for flow and sediment control BMP's.

Element #4 – Install Sediment Controls

Silt fence, catch basin protection, and the temporary sediment pond will be utilized to contain sediments within the project's clearing limits. See sheets ER-01 and ER-02 of the construction plans for locations and details.

Element #5 – Stabilize Soils

Exposed soils will be stabilized as specified in the Grading and Erosion Control Notes with temporary and permanent seeding, mulching, and plastic covering. See sheet ER-02 of the construction plans for notes.

Element #6 – Protect Slopes

Slopes are minor on the subject site. Slopes shall be protected as specified under Element #5.

Element #7 – Protect Drain Inlets

Storm drain inlet protection will be utilized to contain sediments within the project's clearing limits. See sheets ER-01 and ER-02 of the construction plans for locations and details.

Element #8 – Stabilize Channels and Outlets

Temporary channels shall be stabilized with check dams. See sheets ER-01 and ER-02 of the construction plans for locations and details.

Element #9 – Control Pollutants

Pollutants shall be controlled as specified in Volume IV of the 2019 DOE Manual—Source Control BMPs to address potential sources of pollution which may exacerbate possible soil/groundwater contamination identified onsite.

Element #10 – Control De-Watering

There will be no de-watering as a part of this project. See sheet ER-02 of the construction plans for notes.

Element #11 – Maintain BMPs

Maintenance of the BMPs is specified within the Construction Sequence and Grading and Erosion Control Notes. See sheets ER-01 and ER-02 of the construction plans for the Construction Sequence and notes.

Element #12: Manage the Project

The Grading and Erosion Control Notes specify seasonal work limitations. Maintenance of the BMPs is specified within the Construction Sequence and Grading and Erosion Control Notes. See sheets ER-01 and ER-02 of the construction plans for the Construction Sequence and notes.

Element #13: Protect on-site stormwater management BMPs

On-site stormwater management BMPs used for runoff from roofs and other hard surfaces are not feasible due to soil conditions and proposed project density.

SECTION 3: DOWNSTREAM ANALYSIS

Task 1. Study Area Definition and Maps

Snohomish County Bare Earth LiDAR, survey, and 2021 aerial photography were the best topographical references available for the area containing the site. The limits of the downstream analysis extend roughly 0.25 miles beyond the subject property's natural discharge location.

Task 2. Resource Review

All of the resources below have been reviewed for existing and potential issues near the project site:

Adopted Basin Plans

No Adopted Basin Plans were located that include the project site.

Drainage Basin

This site is in the Kings Creek subbasin, as well as the Allen Creek Basin. Discharge from the proposed development will discharge into wetland areas tributary to Kings Creek and Jones Creek.

Floodplain / Floodway (FEMA) maps

Per FEMA Floodplain map #53061C0717G the subject property is not within a floodplain.

Critical Areas Map

The wetland report notes 4 separate wetlands in the vicinity of site development. Wetland A is located north of 44th St and west of lots 1-47. It is a Category II wetland. Wetland B is Category III located just east of Wetland A and north of 44th St NE. Wetland C is a Category II and is located south of 44th St NE. Wetland D is Category III and is located offsite southwest of lots 48-59.

Drainage Complaints

No relevant issues were identified near the proposed site.

Road Drainage Problems

No issues were identified near the proposed site.

Soil Survey

Site soils are classified as Tokul gravelly medial loam (0 to 8 percent slopes, and 8 to 15 percent slopes) which are classified as Hydrologic Soil Group C.

Wetland Inventory Maps

Wetlands are identified to be on, or immediately adjacent to, the project site. Reference the critical areas report submitted with this report for additional information regarding the wetland areas onsite.

Migrating River Studies

Migrating River Studies are not considered applicable to the proposed development.

Section 303d List of Polluted Waters

There are no applicable 303(d) listings for this site due to all stormwater being discharged into on site/ adjacent wetlands.

Water Quality Problems

There are no known water quality problems associated with this site.

Stormwater Compliance Plans

Not applicable to the proposed project.

Task 3. Field Inspection/Downstream Analysis
On April 18th, 2024, a Downstream Analysis was performed at the site. The weather consisted of 53ºF and sunny. The following observations were verified during the visit.

The subject property areas consist primarily of forested vegetation, along with existing homes and associated outbuildings on three of the project parcels. The west portion of parcel #30053500303600 consists of two wetlands along with wetland buffers along the north and southwestern portions of the parcel.

The flow from the site will flow into two threshold discharge areas TDAs A and B. All flow from the lots on the north side of 44th St NE flow to the southwest into the onsite wetlands (TDA A). Flows from the lots on the south side of 44th St NE flow to the southeast into existing wetland adjacent to the site on parcel #29050200206500 (TDA B).

Flowpath 1 (TDA B) originates from the west side of the southern parcel (#29050200200400) and travels east approximately 500ft via existing culvert pipes before joining an adjacent wetland to the southeast (Images 1-4). Flow then travels as channelized wetland flow for approximately 820 ft to the SE until reaching the quarter mile boundary of analysis. Flow eventually reaches King Creek.

Flowpath 2 (TDA A) originates from the eastern most parcel (#00590700018101) and travels to the west for approximately 800ft before dispersing into the existing category I wetland on the western portion of parcel #30053500303600 (Images 5-10). Flow then travels as channelized wetland flow for approximately 520ft to the NE until reaching the quarter mile boundary of analysis. Flow eventually reaches Jones Creek. See Figure 3.0, “Downstream Analysis Map” in Appendix 3 for a visual representation of current discharge.

Task 4. Drainage System Description and Problem Descriptions
Based on the information available and all the resources available including visual inspection of the downstream flow path to the ¼-mile boundary, there is no evidence of existing or anticipated downstream drainage problems. All flows are adequately carried through natural channels to the quarter mile buffer of analysis.

Task 5. Mitigation of Existing or Potential Drainage Problems
No evidence of existing or potential problems with downstream drainage conveyance infrastructure was found. Mitigation is not required.

SECTION 4: DETENTION AND WATER QUALITY TREATMENT DESIGN

4.1 Predeveloped Site Hydrology

The pre-developed and developed conditions were modeled in WWHM for the purpose of peak flow determination for direct discharge. Based on the site location, the WWHM used the Everett Gage with a Precipitation Scale factor of 1.00. For visual representation of the listed basins, see Figure 4.0, "Predeveloped Hydrology Map".

Upstream Basin:

The property on parcel #00590700018200 is upstream of the project site and some flow from this property will travel onto the project site. This area has been modeled as upstream flow through in WWHM in both predeveloped and developed conditions. The values as modeled in WWHM are as follows:

Table 1: Predeveloped Conditions: Upstream Basin

Upstream Basin	
Ground Cover	Area (acre)
Lawn, Flat	0.74
Roads, Flat	0.15
Roof, Flat	0.14
Total	**1.03**

West Onsite Basin:

The predeveloped condition applied to the West Onsite Basin results in forested land cover condition. It contains an area to be developed for lots 48-59 and associated ROW and frontage improvements to support that development. This basin is tributary to TDA B. Note that Lot 50 contains an existing house to remain. Only 1,500 SF of this lot is considered for disturbance for the purpose of new driveway and garage construction. All lots were designed to account for the maximum 50% impervious coverage allowed by the zoning code. The values as modeled in WWHM are as follows:

Table 2: Predeveloped Conditions: West Onsite Basin

West Onsite Basin	
Ground Cover	Area (acre)
Forest, steep	1.60
Total	**1.60**

East Onsite Basin:

The predeveloped condition applied to the East Onsite Basin results in a forested land cover condition. It does not include the wetland buffer area onsite that will not be disturbed for development, nor any other undisturbed areas onsite. It contains areas to be developed for lots 1-47 and associated ROW and frontage improvements to support that development, this basin is tributary to TDA A. The values as modeled in WWHM are as follows:

Table 3: Predeveloped Conditions: East Onsite Basin

East Onsite Basin	
Ground Cover	Area (acre)
Forest, steep	7.24
Total	**7.24**

4.2 Developed Site Hydrology

In the developed condition, the project proposes 59 new single-family lots along with associated private and public utilities proposed to serve the development. Access drives along with associated private and public utilities are proposed to serve project development. Frontage improvements along 44th St NE and 75th Ave NE are also proposed.

In compliance with the 2019 DOE Manual, all runoff from onsite developed/disturbed surfaces will be collected, treated, and discharged directly to existing/historic flow paths or will bypass detention and be mitigated within the proposed flow control system.

West Onsite Basin:

The developed West Onsite Basin is 1.60 acres and includes the majority of the developed site within its boundaries. It contains area to be developed for lots 48-59 and associated ROW and frontage improvements to support that development. This basin is tributary to TDA B. All lots were designed to account for the maximum 50% impervious coverage allowed by the zoning code. In the developed condition, the West Onsite Basin has been modeled using WWHM with the following areas and ground cover designations:

Table 4: Developed Conditions: West Onsite Basin

West Onsite Basin	
Ground Cover	Area (acre)
Pasture, flat	0.65
Roads, flat	0.37
Roof, flat	0.49
Sidewalks, flat	0.09
Total	**1.60**

East Onsite Basin:

The developed East Onsite Basin is 6.48 acres and includes the majority of the developed site within its boundaries. It contains the area to be developed for lots 1-47 and associated ROW and frontage improvements to support that development. This basin is tributary to TDA A. In the developed condition, the East Onsite Basin has been modeled using WWHM with the following areas and ground cover designations:

Table 5: Developed Conditions: East Onsite Basin

East Onsite Basin	
Ground Cover	Area (acre)
Pasture, flat	2.60
Roads, flat	1.46
Roof, flat	1.59
Driveways, flat	0.43
Sidewalks, flat	0.40
Total	**6.48**

44th ROW Bypass Basin:

The developed 44th ROW Bypass Basin is 0.23 acres and includes an area of ROW within 44th Ave that will be converted for ROW improvements. The bypass in this area cannot be collected due to topographical constraints. In the developed condition, the 44th ROW Bypass Basin has been modeled using WWHM with the following areas and ground cover designations:

Table 6: Developed Conditions: 44th ROW Bypass Basin

44th ROW Bypass Basin	
Ground Cover	Area (acre)
Pasture, steep	0.08
Roads, steep	0.10
Sidewalks, steep	0.05
Total	**0.23**

Lots 7-17 Bypass Basin:
The developed Lots 7-17 Bypass Basin is 0.53 acres and includes lower pad and 50% of the proposed roof areas on lots 7-17 that will discharge via dispersion trenches to the wetland within TDA A. In the developed condition, the Lots 7-17 Bypass Basin has been modeled using WWHM with the following areas and ground cover designations:

Table 7: Developed Conditions: Lots 7-17 Bypass Basin

Lots 7-17 Bypass Basin	
Ground Cover	Area (acre)
Pasture, flat	0.27
Roofs, flat	0.26
Total	**0.53**

4.3 Detention Facility Design

The proposed detention pond facilities used for mitigating developed condition flows were designed in compliance with the 2019 DOE requirements to model hydrologic conditions and detention in a continuous runoff model (WWHM2012) where the following evaluation parameters are employed:

> *"Flow duration is computed by counting the number of flow values that exceed a specified flow level. The specified flow levels used by WWHM in the flow duration*
> *analysis are listed below.*
> 1. *50% of the 2-year predevelopment peak flow.*
> 2. *100% of the 2-year predevelopment peak flow.*
> 3. *100% of the 50-year predevelopment peak flow.*
>
> *There are three criteria by which flow duration values are compared:*
> 1. *If the postdevelopment flow duration values exceed any of the predevelopment flow levels between 50% and 100% of the 2-year predevelopment peak flow values (100 Percent Threshold) then the flow duration requirement has not been met.*
> 2. *If the postdevelopment flow duration values exceed any of the predevelopment flow levels between 100% of the 2-year and 100% of the 50-year predevelopment peak flow values more than 10 percent of the time (110 Percent Threshold) then the flow duration requirement has not been met.*
> 3. *If more than 50 percent of the flow duration levels exceed the 100 percent threshold then the flow duration requirement has not been met."*

East Pond
The proposed cast in place concrete detention pond facilities detain and release collected storm water runoff from the East Onsite Basins. The facility is located within Tract 998. Flows from the East Onsite Basin are collected and conveyed to the detention wet pond via a proposed network of catch basins and storm water conveyance pipes. Detailed WWHM output is provided in Appendix 4. A summary of the detailed statistics and inputs used for modeling the system in WWHM2012 can be found below.

Table 8: East Detention Pond Design Summary

East Pond	
Live Storage Bottom Area (modeled)	*4,489 SF*
Live Storage Bottom Area (provided)	*4,520 SF*
Begin Live Storage Elevation	266.00
Riser Height	13.00'
Volume (modeled)	58,357 CF
Volume (provided)	58,760 CF
Top of Riser Elevation	279.00

See table below for the flow rates and water surface elevations by storm event for the detention pond.

Table 9: Flow Rates and Water Surface Elevations by Storm Event

Storm Event	Predeveloped Rate (cfs)	Mitigated Rates (cfs)	Water Surface Elevation (ft)
2-Year	0.3691	0.3107	272.54
10-Year	0.7104	0.4971	274.74
50-Year	1.0823	0.7042	277.93
100-Year	1.2618	0.8061	277.99

West Pond

The proposed cast in place concrete detention facility detains, and releases collected storm water runoff from the West Onsite Basin. The facility is located within Tract 996. Flows from the West Onsite Basin are collected and conveyed to the detention pond via a proposed network of catch basins and storm water conveyance pipes. Detailed WWHM output is provided in Appendix 4. A summary of the detailed statistics and inputs used for modeling the system in WWHM2012 can be found below.

Table 10: West Pond Design Summary

West Pond	
Live Storage Bottom Area (modeled)	*2,600 SF*
Live Storage Bottom Area (provided)	*2,670 SF*
Begin Live Storage Elevation	260.50
Riser Height	7.00'
Volume (modeled)	18,200 CF
Volume (provided)	18,690 CF
Top of Riser Elevation	267.50

See table below for the flow rates and water surface elevations by storm event for the detention pond.

Table 11: Flow Rates and Water Surface Elevations by Storm Event

Storm Event	Predeveloped Rate (cfs)	Mitigated Rates (cfs)	Water Surface Elevation (ft)
2-Year	0.0529	0.0338	267.63
10-Year	0.0985	0.0644	268.18
50-Year	0.1471	0.1025	270.54
100-Year	0.1702	0.1225	270.78

4.4 Water Quality Treatment

Perkfilter 1

Water Quality Treatment for the East Onsite Basin is accomplished through a Perkfilter structure located downstream of the east detention pond. A summary of design criteria is provided below:

Table 12: Perkfilter 1 Design Summary

6' X 8' Perkfilter Vault	
Tributary Area	*7.51 AC*
Tributary PGIS Area	*2.04 AC*
Water Quality Flow Rate (2 yr mitigated peak)	0.3108 cfs
WQ Treatment Capacity	1.0610 cfs
Number of Cartridges	9
Cartridge Height	12"+18"
Internal Drop	3.5'
Peak Flow Rate	0.8061 cfs
Peak Flow Storm Event	100-year

Perkfilter 2

Water Quality Treatment for the 44th Bypass Basin is accomplished through a Perkfilter structure located within the 44th St NE Curbline. A summary of design criteria is provided below:

Table 13: Perkfilter 2 Design Summary

Perkfilter Catch Basin	
Tributary Area	*0.23 AC*
Tributary PGIS Area	*0.15 AC*
Water Quality Flow Rate (2 yr mitigated peak)	0.0156 cfs
WQ Treatment Capacity	0.0400 cfs
Number of Cartridges	1
Cartridge Height	18"
Min. Depth	4.33'
Peak Flow Rate	0.2230 cfs
Peak Flow Storm Event	100-year

Perkfilter 3

Water Quality Treatment for the West Onsite Basin is accomplished through a Perkfilter structure located downstream of the west detention pond. A summary of design criteria is provided below:

Table 14: Perkfilter 3 Design Summary

60" Perkfilter Manhole	
Tributary Area	*1.60 AC*
Tributary PGIS Area	*0.48 AC*
Water Quality Flow Rate (2 yr mitigated peak)	0.0338 cfs
WQ Treatment Capacity	0.045 cfs
Number of Cartridges	3
Cartridge Height	12"
Internal Drop	1.7'
Peak Flow Rate	0.1125 cfs
Peak Flow Storm Event	100-year

4.5 Onsite Stormwater Management

The project does not meet LID performance standard, and minimum requirements 1-9 are required for the project but choose to implement List #2 to evaluate low impact design. The following BMP's below are assessed for implementation:

Lawn and Landscaped Areas:

1. *Post-Construction Soil Quality and Depth*
    - BMP T5.13 soils will be applied to all permeable and landscaped areas in developed condition.
        i. **Conclusion: Feasible**

Roofs:

1. *Downspout Full Infiltration per BMP T5.10A or Downspout Full Dispersion per BMP T5.30*
    - Infiltration is not feasible on site, which has been confirmed by testing found in the geotechnical report and thus BMP T5.10A is infeasible. Due to site specific constraints including building and fire lane location as well as the proximity of slopes and walls to the developed site improvements, there is inadequate flow path to disperse on site per BMP T5.30.
        i. **Conclusion: Infeasible**

2. *Bioretention*
    - Due to spatial constraints provide by the development footprint and infiltration infeasibility confirmed by testing in the geotechnical report, a bioretention facility cannot be designed to provide the required horizontally projected surface area.
        i. **Conclusion: Infeasible**

3. *Downspout Dispersion per BMP T5.10B.*
    - Due to site specific constraints including building and fire lane location as well as the proximity of slopes and walls to the developed site improvements, there is inadequate flow path to disperse on site.
        i. **Conclusion: Infeasible**

4. *Perforated Stub-Out Connections per BMP T5.10C.*
    - No stub-out connections will be implemented in the design as soils are not suitable for infiltration as well as the site's proximity to steep slopes.
        i. **Conclusion: Infeasible**

Other Hard Surfaces:

1. *Full Dispersion per BMP T5.30*
    - Due to site specific constraints including building and fire lane location as well as the proximity of slopes and walls to the developed site improvements, there is inadequate flow path to disperse on site.
        i. **Conclusion: Infeasible**

2. *BMP T5.15 Permeable Pavement*
    - Infiltration is not feasible on site which has been confirmed by testing found in the geotechnical report.
        i. **Conclusion: Infeasible**

3. *Bioretention*
    - Due to spatial constraints provide by the development footprint and infiltration infeasibility as confirmed by testing in the geotechnical report, a bioretention facility cannot be designed to provide the required horizontally projected surface area.
        i. **Conclusion: Infeasible**

4. *Sheet Flow Dispersion or Concentrated Flow Dispersion in accordance with BMP T5.12 or BMP T5.11*
    - Due to site specific constraints including building and fire lane location as well as the proximity of slopes and walls to the developed site improvements, there is inadequate flow path to disperse on site.
        i. **Conclusion: Infeasible**

4.6 Dispersion Trenches – Lots 7-17 Bypass Basin

For Lots 7-17, the rear yards, building foundation drains and 50% of the roof area of the site will not be collected to the onsite conveyance main as they will be topographically too low to be collected and routed to the east detention pond.

These drain systems will be collected together via tight lights and combine with rear yard drains to discharge vis dispersion trench to the buffer for wetland A, west of the developed site. Two 50' dispersion trenches are proposed. In order to verify trench capacity and ensure that trenches do not receive more than the 0.5 cfs maximum flow in the 100-year storm event. WWHM was utilized to show the peak flows for the entire basin. The entire basin has a peak flow of 0.30 cfs, therefore verifying that either of the two proposed dispersion trenches will not see greater than 0.5 cfs of flow in the 100-year storm event and therefore are sized adequately. See appendix 4 for WWHM output.

SECTION 5: CONVEYANCE DESIGN

The stormwater conveyance system is comprised of a network of open/closed grate catch basins, buried pipe, two detention ponds and 3 Perkfilter water quality units. Catch basins have been located such that each section of storm drainage pipe may adequately convey associated tributary area flows.

A fully prepared conveyance capacity analysis of the proposed pipes onsite will be prepared at a future submittal.

SECTION 6: OPERATIONS AND MAINTENANCE MANUAL

The proposed storm drainage system consists of buried pipes, catch basins, two detention ponds, 3 Perkfilter water quality treatment units and dispersion trenches. These facilities will require periodic maintenance and inspection. Inspection and maintenance procedures are contained on the following pages.

SECTION 7: SPECIAL REPORTS AND STUDIES

The following studies were conducted in preparation of this Report:

- Geotechnical Report, Earth Solutions NW, April 2024
- Critical Areas Report, Wetland Resources, April 2024

Appendix 1: Project Overview

1. Vicinity Map
2. Existing Conditions Map
3. Proposed Development Map

WILLIAMS POINTE
PRELIMINARY PLANS
MARYSVILLE, WA

LEGEND AND ABBREVIATIONS

EXISTING SYMBOLS	DESCRIPTION
●	SET 1/2" X 24" REBAR W/CAP "PCS 37536"
○	EXISTING CORNER MONUMENT AS NOTED
	QUARTER SECTION TIE
	SECTION TIE
	FOUND MONUMENT AS NOTED
	BLOW-OFF VALVE
	CATCH BASIN
	FIRE HYDRANT
	GUY ANCHOR
H.B.	HOSE BIB
	INVERT/CULVERT
	MAILBOX
P.M.	POWER METER
	POWER TRANSFORMER
	SANITARY SEWER MANHOLE
	SIGN POST
	STORM DRAIN MANHOLE
	TELEVISION RISER
	UTILITY/ POLE
	WATER MANHOLE
	WATER METER
	WATER VALVE
	WETLAND FLAG
	YARD LIGHT
	CONIFEROUS TREE
	DECIDUOUS TREE

ABBREVIATIONS	
CPP	CORRUGATED PLASTIC PIPE
IE	INVERT ELEVATION
INV	INVERT ELEVATION
OHP	OVERHEAD POWER LINE
TPM	TELEPHONE PAINT MARK
C	CEDAR
F	FIR
H	HEMLOCK
M	MAPLE

PROPOSED WATER SYMBOLS

SYMBOL	DESCRIPTION
	WATER CAP
	CONCRETE BLOCKING
	11.25° BEND
	22.5° BEND
	45° BEND
	90° BEND
	VALVE
	HYDRANT ASSEMBLY
	BLOW-OFF VALVE
	REDUCER
	AIR-VAC ASSEMBLY
	WATER METER
	WATER PIPE

PROPOSED SURVEY SYMBOLS

SYMBOL	DESCRIPTION
	SURVEY MONUMENT IN PROPOSED ROAD

PROPOSED STORM SYMBOLS

SYMBOL	DESCRIPTION
	SD CAP
	TYPE 1 CATCH BASIN, GRATED LID
	TYPE 1 CATCH BASIN, SOLID LID
	TYPE 2 CATCH BASIN, GRATED LID
	TYPE 2 CATCH BASIN, SOLID LID
	BEEHIVE MANHOLE COVER
	SQUARE YARD DRAIN
	ROUND YARD DRAIN
	STORM CLEAN OUT
	STORM PIPE

PROPOSED SEWER SYMBOLS

SYMBOL	DESCRIPTION
	SEWER CAP
	SEWER CLEANOUT
	SEWER MANHOLE
	SEWER PIPE

CONTACT LIST

DEVELOPER:
KEYSTONE LAND, LLC
13805 SMOKEY POINT BLVD #102
MARYSVILLE, WA 98271
CONTACT: JOE LONG
PHONE: (425) 268-6373
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GEOTECHNICAL ENGINEER:
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1115 BRIDGE ROAD
EASTHAM, MA 02642
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PHONE: (425) 210-1986
EMAIL: Pauljayla@gmail.com

SURVEYOR:
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P.O. BOX 13619
MILL CREEK, WASHINGTON 98082
CONTACT: DARREN RIDDLE, PLS
PHONE: (425) 512-7099
FAX: (425) 357-3577
EMAIL: darren@pcsurveys.net

WETLAND BIOLOGIST:
WETLAND RESOURCES
9505 19TH AVE SE, STE 106
EVERETT, WASHINGTON 98208
CONTACT: JOHN LAUFENBURG
PHONE: (425) 337-3174
FAX: (425) 337-3045
EMAIL: john@wetlandresources.com

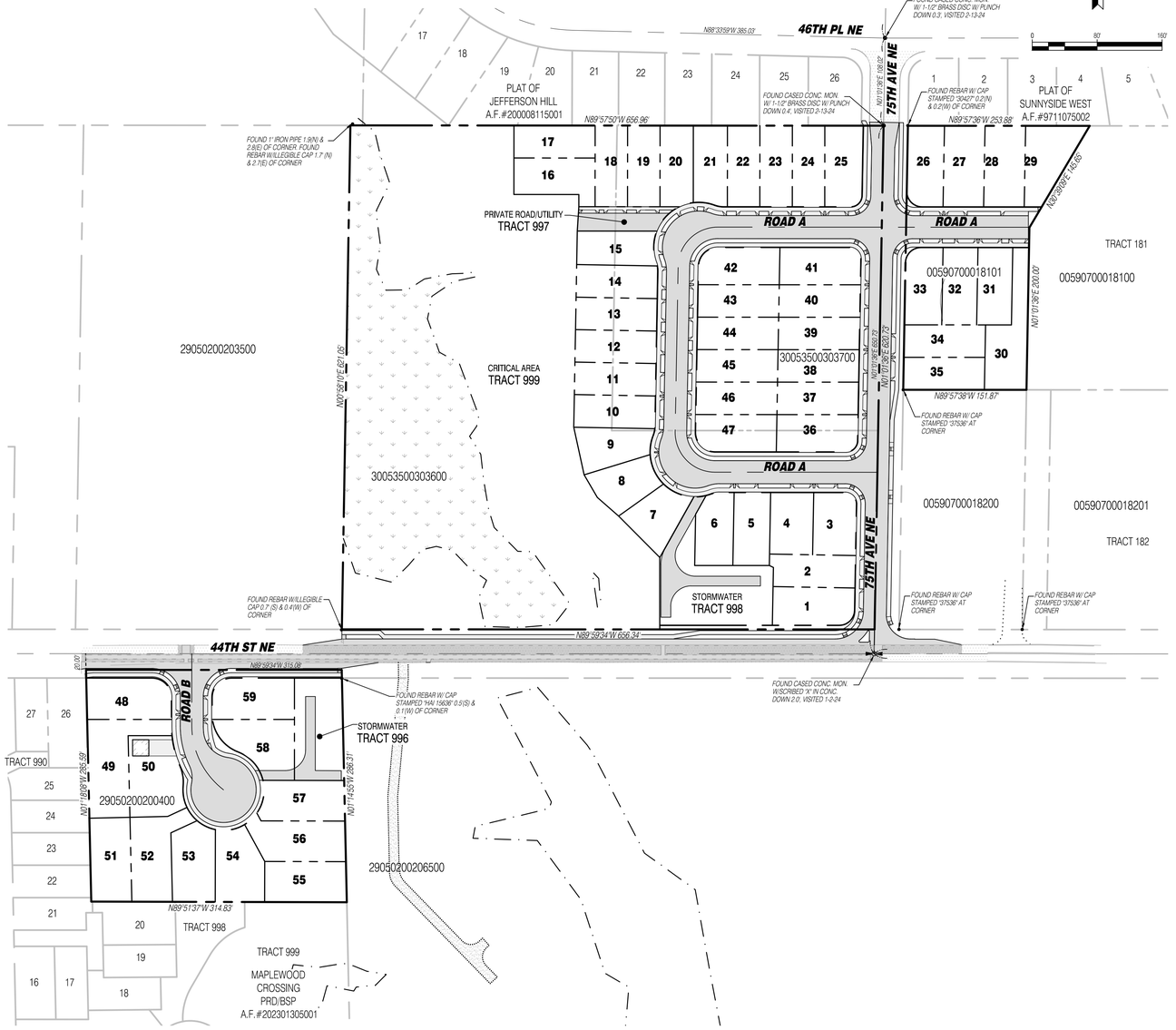
PROJECT INFORMATION

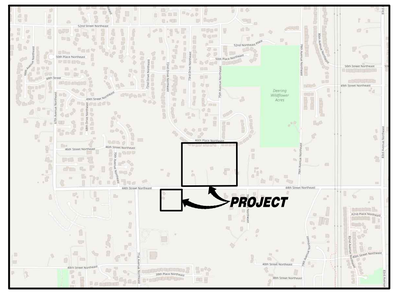
TAX PARCELS:	30053500303600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

EARTHWORK QUANTITIES

STRIPPING:	10,500 CY
CUT:	40,000 CY
FILL:	35,000 CY
NET:	5,000 CY (CUT)
DISTURBED AREA:	436,728 SF (10.03 AC)

THE ABOVE QUANTITIES ARE FOR PERMITTING PURPOSES. CONTRACTOR TO VERIFY.





VICINITY MAP
SCALE: 1" = 2000'

SURVEY INFORMATION

LEGAL DESCRIPTION

PARCEL NO. 29050200200400:
THE EAST 315 FEET OF THE NORTH HALF OF THE NORTHWEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

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PARCEL NO. 00590700018101:
PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 22-001 RECORDED UNDER AFN. 202207195002

ALL SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 (NAVD88 -3.67'= NGVD29)

FOUND BRASS DISK W/ PUNCH IN CONC. MON. AT THE INTERSECTION OF 46TH PL. NE & 75TH AVE N.E. CITY OF MARYSVILLE DATABASE PT. ID 100
WGS DESIGNATION 294669
ELEV. = 313.56'

BASIS OF BEARING

PER THE PLAT OF SEAVIEW RIDGE. RECORDED IN VOLUME 56 OF PLATS, ON PAGES 249 THROUGH 251, THE MONUMENTED CENTERLINE OF 44TH ST. N.E., AS THE BEARING OF
N 89°59'34" W, AS SHOWN HEREON.

SURVEY REFERENCES

(R1) PLAT OF SEAVIEW RIDGE - VOL. 56, PGS. 249-251

(R2) PLAT OF JEFFERSON HILL - A.F.#200008115001

(R3) CITY OF MARYSVILLE BLA NO. BLA 19-044, AFN. 201910295002

(R4) CITY OF MARYSVILLE BLA NO. BLA 22-001, AFN. 202207195002

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE AND REAL TIME KINEMATIC GPS POSITIONING UTILIZING THE HxGN SMARTNET NETWORK

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION
LEICA VIVA GNSS GS08 RECEIVER
ALL EQUIPMENT HAS BEEN MAINTAINED IN ADJUSTMENT TO MANUFACTURER'S SPECIFICATIONS AS REQUIRED BY WAC 332-130-100

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS SET BY WAC 332-130-080 THROUGH 332-130-110

SURVEY NOTES

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TABLE OF CONTENTS

1	COVER SHEET
2-3	EXISTING CONDITIONS MAP
4-5	PRELIMINARY PLAT MAP
6-7	PRELIMINARY ROAD AND GRADING PLAN
8-11	PRELIMINARY ROAD PROFILES
12	PRELIMINARY ROAD SECTIONS
13-14	PRELIMINARY UTILITY PLAN

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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

COVER SHEET

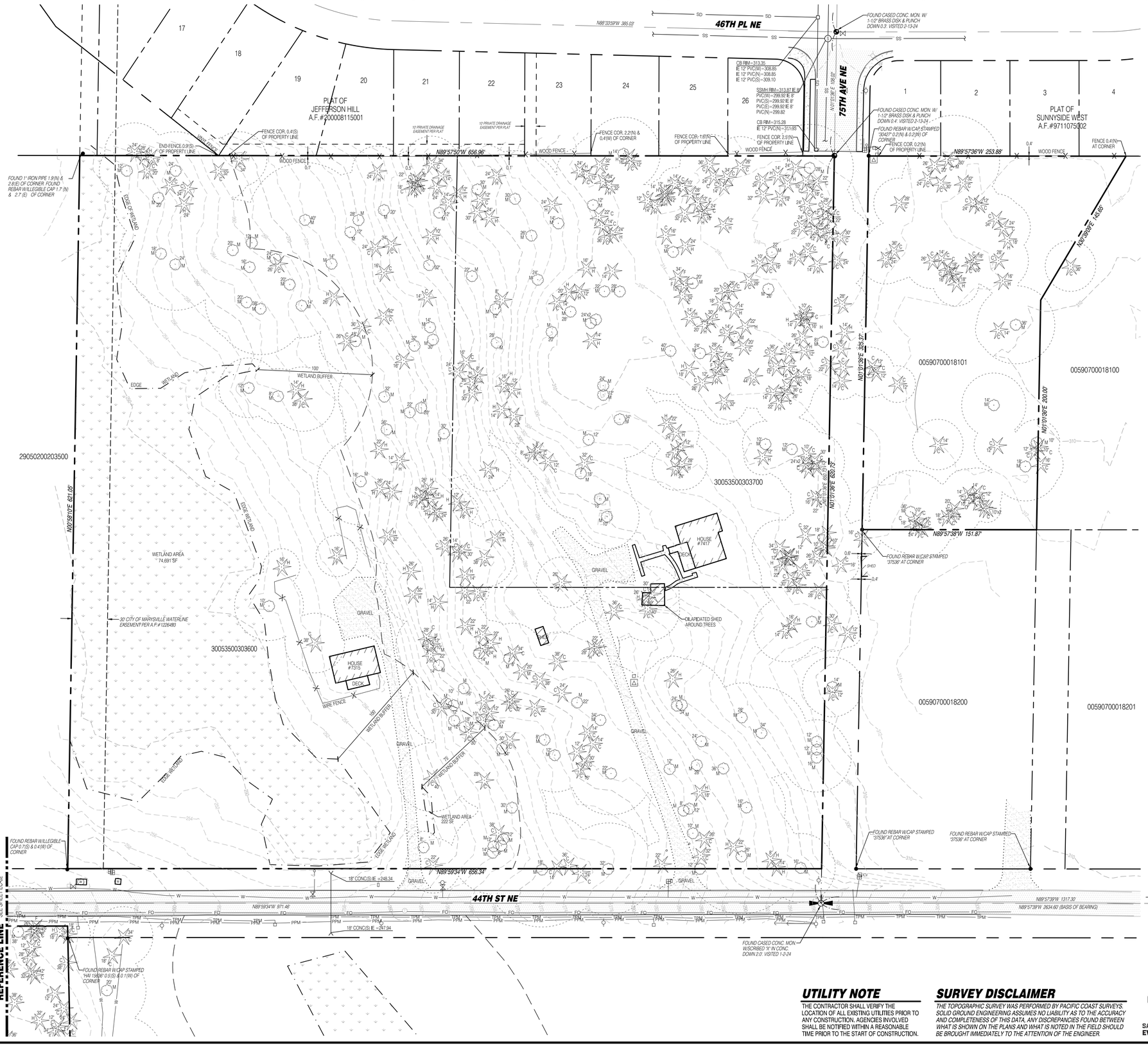
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

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REFERENCE LINE SEE SHEET EC-02

THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

EXISTING CONDITIONS MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

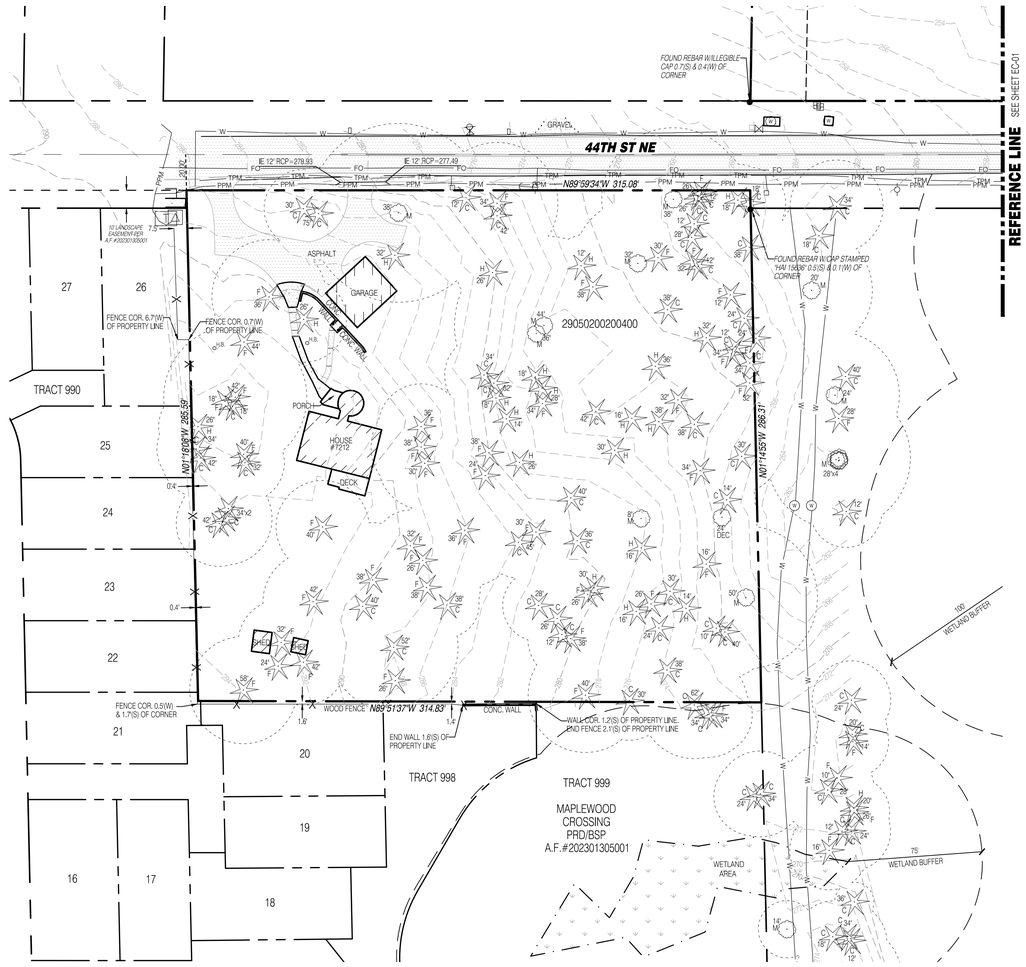
MARYSVILLE, WASHINGTON

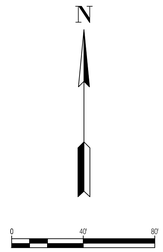
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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

EXISTING CONDITIONS MAP

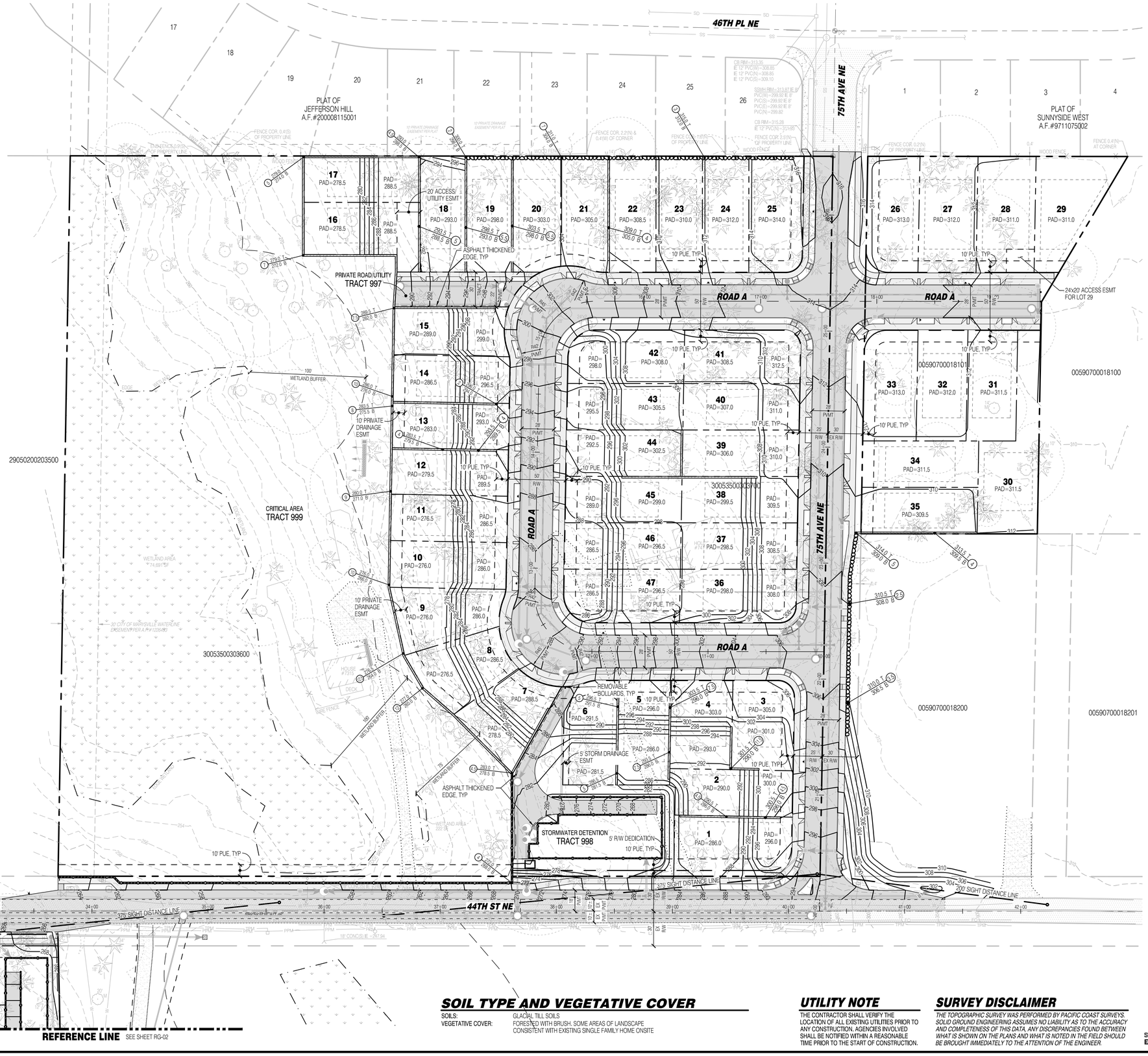
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

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DATE:	3-22-24
JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

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LEGEND

SYMBOLS	DESCRIPTION
•	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING

ROAD AND GRADING NOTES

1. GRADING AND PLACEMENT OF WALLS MUST BE IN CONFORMANCE WITH 220.50.030 OF THE MMC.
2. ALL DISTURBED PERVIOUS AREAS TO BE UNDERLAIN WITH BMP T5.13 SOILS.
3. TRENCH RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 3-703 OF THE EDDS.
4. ALL OVERHEAD UTILITIES ARE TO BE PLACED UNDERGROUND.
5. ALL WALLS OVER 48" REQUIRE A SEPARATE BUILDING PERMIT.
6. ALL WALLS OVER 30" REQUIRE FALL PROTECTION FENCING.
7. ALL WALLS TO BE 2' OR LESS AT TERMINATION.
8. ALL PAVEMENT CUTS SHALL BE RESTORED PER APPENDIX B OF EDDS CHAPTER 3. TACK AND SEAL SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN SECTION 9-02.1(6) OF THE STANDARD SPECIFICATIONS AND SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGES OF SAWCUTS AS SPECIFIED IN SECTION 5-04 OF THE STANDARD SPECIFICATIONS.

SOIL TYPE AND VEGETATIVE COVER

SOILS: GLACIAL TILL SOILS
VEGETATIVE COVER: FORESTED WITH BRUSH, SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

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ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY ROAD AND GRADING

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

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6 OF 14

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NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON



LEGEND

SYMBOLS	DESCRIPTION
•	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING

ROAD AND GRADING NOTES

1. GRADING AND PLACEMENT OF WALLS MUST BE IN CONFORMANCE WITH 220.50.030 OF THE MMC.
2. ALL DISTURBED PERVIOUS AREAS TO BE UNDERLAIN WITH BMP T5.13 SOILS.
3. TRENCH RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 3-703 OF THE EDDS.
4. ALL OVERHEAD UTILITIES ARE TO BE PLACED UNDERGROUND.
5. ALL WALLS OVER 48" REQUIRE A SEPARATE BUILDING PERMIT.
6. ALL WALLS OVER 30" REQUIRE FALL PROTECTION FENCING.
7. ALL WALLS TO BE 2' OR LESS AT TERMINATION.
8. ALL PAVEMENT CUTS SHALL BE RESTORED PER APPENDIX B OF EDDS CHAPTER 3. TACK AND SEAL SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN SECTION 9-02.1(6) OF THE STANDARD SPECIFICATIONS AND SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGES OF SAWCUTS AS SPECIFIED IN SECTION 5-04 OF THE STANDARD SPECIFICATIONS.

SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

UTILITY NOTE

THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. AGENCIES INVOLVED SHALL BE NOTIFIED WITHIN A REASONABLE TIME PRIOR TO THE START OF CONSTRUCTION.

SURVEY DISCLAIMER

THE TOPOGRAPHIC SURVEY WAS PERFORMED BY PACIFIC COAST SURVEYS. SOLID GROUND ENGINEERING ASSUMES NO LIABILITY AS TO THE ACCURACY AND COMPLETENESS OF THIS DATA. ANY DISCREPANCIES FOUND BETWEEN WHAT IS SHOWN ON THE PLANS AND WHAT IS NOTED IN THE FIELD SHOULD BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.

811 SAFETY IS IN YOUR HANDS. EVERY DIG. EVERY TIME.

THOMAS P. ABBOTT STATE OF WASHINGTON 56921 REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY ROAD AND GRADING

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

RG-02

7 OF 14

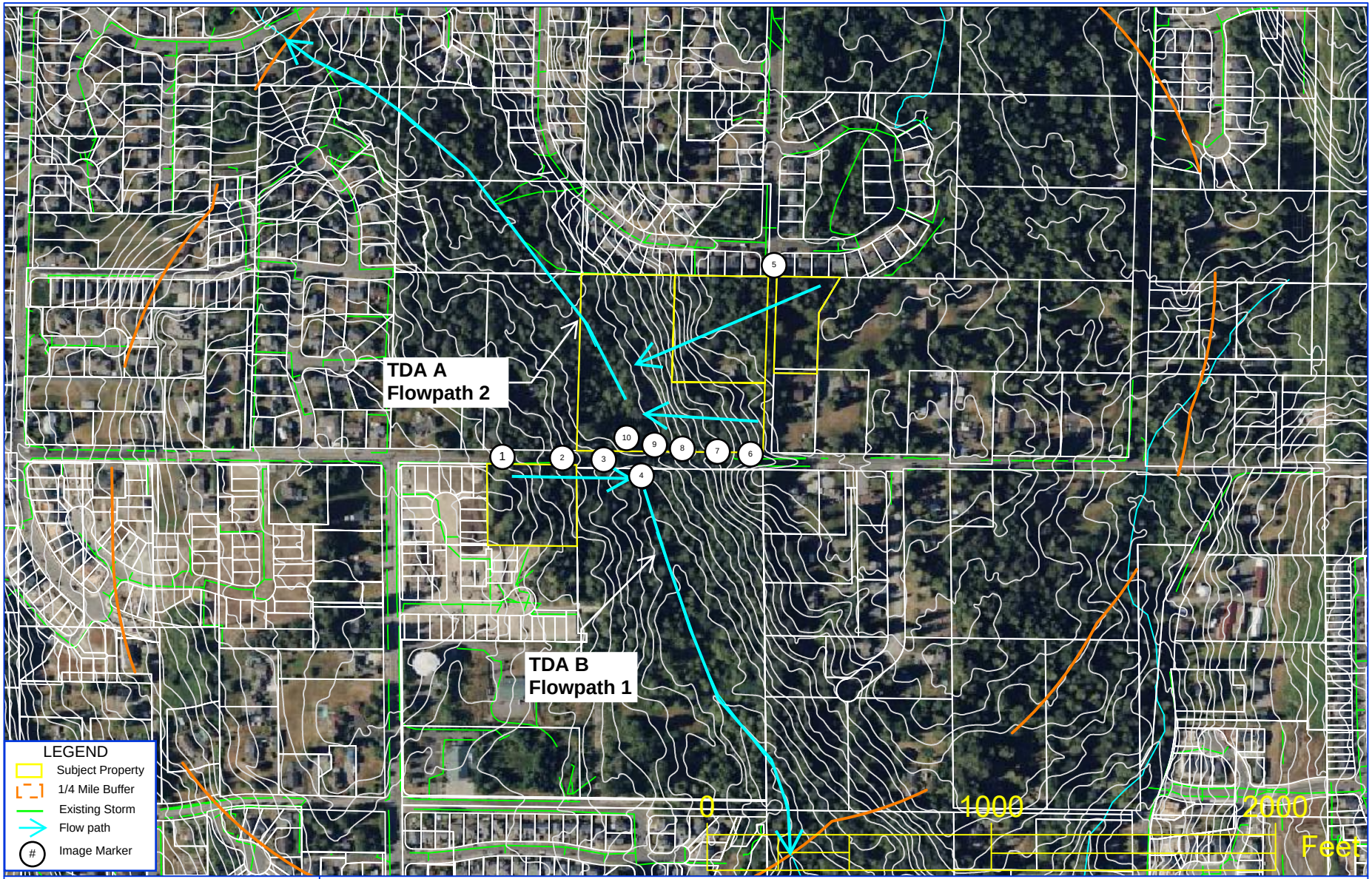
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Appendix 2: Temporary Erosion and Sediment Control Design

1. TESC Plans (to be provided at a later date)

Appendix 3: Downstream Analysis

1. Downstream Analysis Map
2. Downstream Analysis Site Visit Pictures
3. USDA Soils Map & Description



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KEYSTONE LAND, LLC

WILLIAMS POINTE

DOWNSTREAM ANALYSIS MAP

JOB NUMBER:	23-0010	DATE:	4-29-24
JURISDICTION:	Marysville	DRAWN BY:	CJD

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Downstream Analysis Photographs



Image 1: Flowpath 1 begins at frontage of parcel #29050200200400, existing culvert pipe collecting flow from site before traveling east along 44th St NE.



Image 2: Flowpath 1 continues to the east, flowing through the existing culverts towards adjacent wetland to the southeast.



Image 3: Flowpath 1 continues east along 44th St NE.



Image 4: Flowpath 1 then disperses into the wetland to the south east of the site.

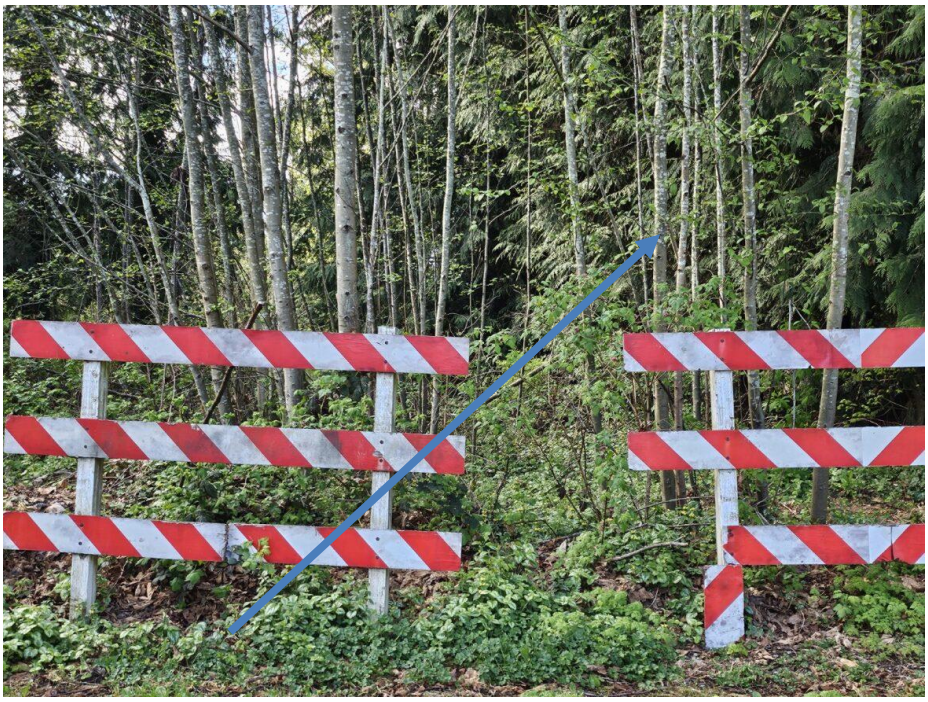


Image 5: Flowpath 2 begins at back side of parcel #00590700018101, flowing from the Northeast to the Southwest.



Image 6: Flowpath 2 flows to the west towards wetlands on parcel 30053500303600. (East side of parcel 30053500303600)



Image 7: Flowpath 2 continuing to the west



Image 8: Flowpath 2 continuing to the west towards on-site wetlands.



Image 9: Flowpath 2 continuing to the west towards on-site wetlands.



Image 10: Flowpath 2 flows into on-site wetlands.



Map Scale: 1:4,240 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Snohomish County Area, Washington
Survey Area Data: Version 25, Aug 29, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 14, 2022—Sep 1, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
72	Tokul gravelly medial loam, 0 to 8 percent slopes	66.5	84.4%
73	Tokul gravelly medial loam, 8 to 15 percent slopes	12.3	15.6%
Totals for Area of Interest		**78.7**	**100.0%**

Snohomish County Area, Washington

72—Tokul gravelly medial loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2t61k
Elevation: 160 to 1,150 feet
Mean annual precipitation: 45 to 70 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 140 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Tokul and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tokul

Setting

Landform: Hillslopes, till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Volcanic ash mixed with loess over glacial till

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
Oa - 1 to 2 inches: highly decomposed plant material
A - 2 to 6 inches: gravelly medial loam
Bs1 - 6 to 9 inches: gravelly medial loam
Bs2 - 9 to 17 inches: gravelly medial loam
Bs3 - 17 to 24 inches: gravelly medial loam
BC - 24 to 33 inches: gravelly medial fine sandy loam
2Bsm - 33 to 62 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 39 inches to densic material; 20 to 39 inches to cemented horizon
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: B
Ecological site: F002XA005WA - Puget Lowlands Moist Forest
Forage suitability group: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA)
Other vegetative classification: Limited Depth Soils (G002XN302WA), Limited Depth Soils (G002XF303WA)
Hydric soil rating: No

Minor Components

Pastik

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Barneston

Percent of map unit: 5 percent
Landform: Moraines, eskers, kames
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Norma

Percent of map unit: 3 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mckenna

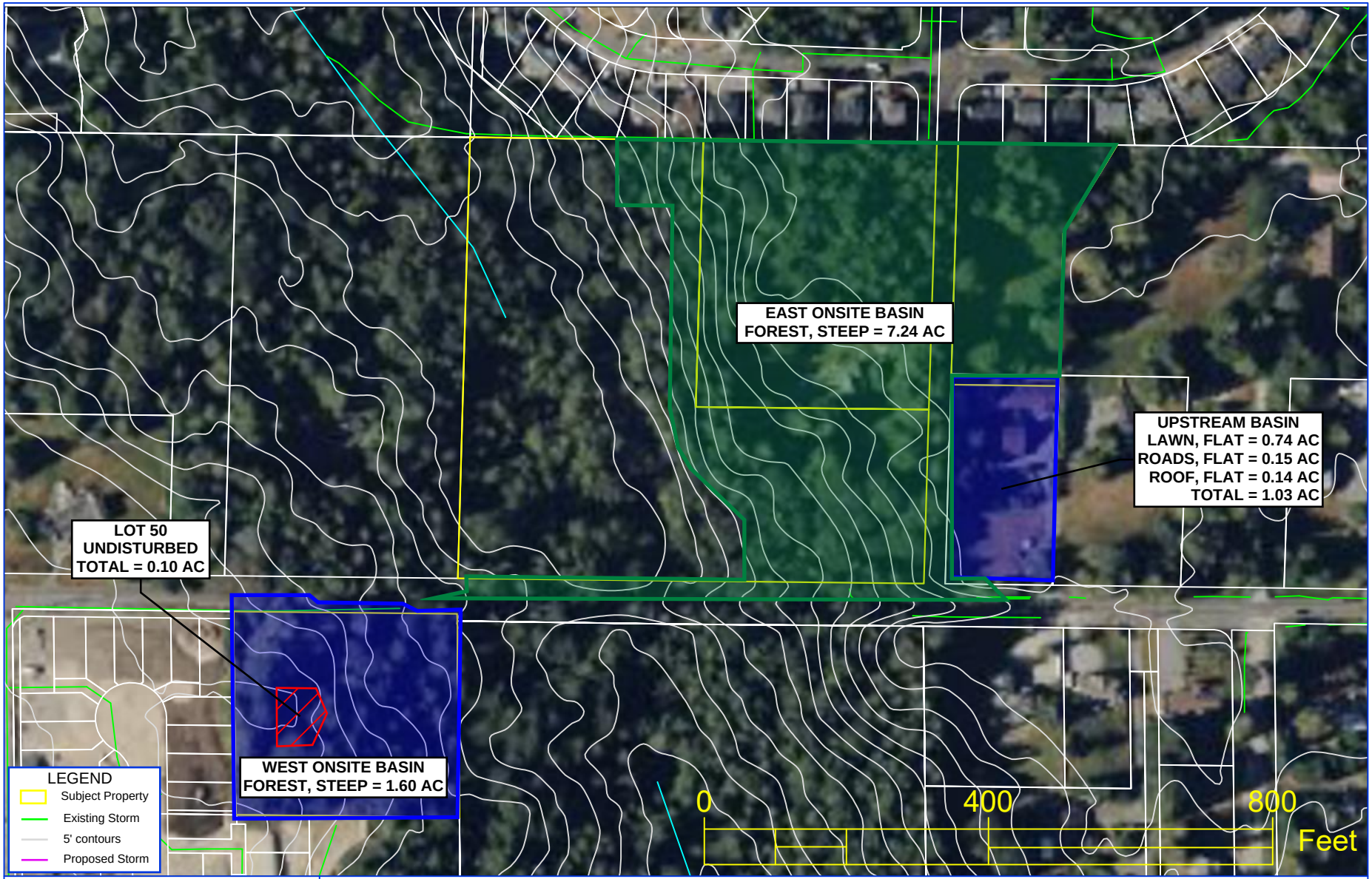
Percent of map unit: 2 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Concave
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Snohomish County Area, Washington
Survey Area Data: Version 25, Aug 29, 2023

Appendix 4: Detention and Water Quality Design Analysis

1. Predeveloped Hydrology Map
2. Developed Hydrology Map
3. Perkfilter Detail
4. WWHM2012 Output – West Detention Pond
5. East Detention Pond
6. 44th ROW Bypass Basin
7. WWHM2012 Output – Lots 7-17 Bypass Basin



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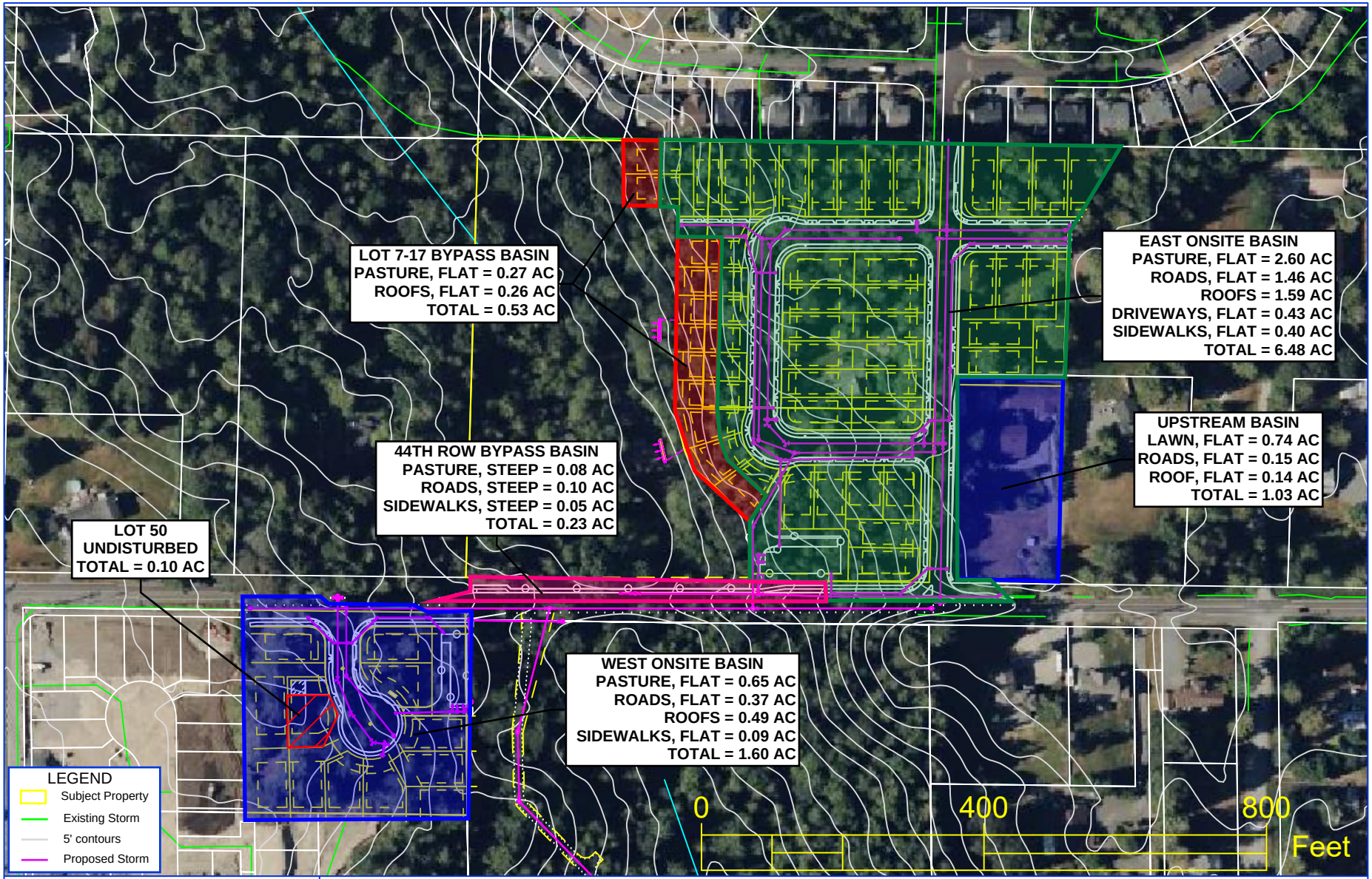
KEYSTONE LAND, LLC

WILLIAMS POINTE

PREDEVELOPED HYDROLOGY MAP

JOB NUMBER:	23-0010	DATE:	4-29-24
JURISDICTION:	Marysville	DRAWN BY:	CJD

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KEYSTONE LAND, LLC

WILLIAMS POINTE

DEVELOPED HYDROLOGY MAP

JOB NUMBER:	23-0010	DATE:	4-29-24
JURISDICTION:	Marysville	DRAWN BY:	CJD

C:\Users\CooperDanby\Documents\CAD-GIS\Maps\Williams Pt Marysville\Williams Developed Hydro Map.dwg

WWHM2012
PROJECT REPORT

Project Name: West Vault_20240402
Site Name:
Site Address:
City :
Report Date: 4/25/2024
Gage : Everett
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2023/01/27
Version : 4.2.19

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : COLLECTED BASIN
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Forest, Steep	1.6
Pervious Total	1.6

Impervious Land Use	acre
Impervious Total	0
Basin Total	1.6

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : COLLECTED BASIN
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Pasture, Flat	.65
Pervious Total	0.65

Impervious Land Use	acre
ROADS FLAT	0.37
ROOF TOPS FLAT	0.49
SIDEWALKS FLAT	0.09
Impervious Total	0.95
Basin Total	1.6

Element Flows To:

Surface	Interflow	Groundwater
Vault 1	Vault 1	

Name : Vault 1
Width : 65 ft.
Length : 40 ft.
Depth: 11 ft.
Discharge Structure
Riser Height: 7 ft.
Riser Diameter: 24 in.
Notch Type: Rectangular
Notch Width: 0.040 ft.
Notch Height: 1.500 ft.
Orifice 1 Diameter: 0.8125 in. **Elevation:** 0 ft.
Orifice 2 Diameter: 1.125 in. **Elevation:** 2.6 ft.

Element Flows To:

Outlet 1	Outlet 2

Vault Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.059	0.000	0.000	0.000
0.1222	0.059	0.007	0.006	0.000
0.2444	0.059	0.014	0.008	0.000
0.3667	0.059	0.021	0.010	0.000
0.4889	0.059	0.029	0.012	0.000
0.6111	0.059	0.036	0.014	0.000
0.7333	0.059	0.043	0.015	0.000
0.8556	0.059	0.051	0.016	0.000
0.9778	0.059	0.058	0.017	0.000
1.1000	0.059	0.065	0.018	0.000
1.2222	0.059	0.073	0.019	0.000
1.3444	0.059	0.080	0.020	0.000

1.4667	0.059	0.087	0.021	0.000
1.5889	0.059	0.094	0.022	0.000
1.7111	0.059	0.102	0.023	0.000
1.8333	0.059	0.109	0.024	0.000
1.9556	0.059	0.116	0.025	0.000
2.0778	0.059	0.124	0.025	0.000
2.2000	0.059	0.131	0.026	0.000
2.3222	0.059	0.138	0.027	0.000
2.4444	0.059	0.145	0.028	0.000
2.5667	0.059	0.153	0.028	0.000
2.6889	0.059	0.160	0.039	0.000
2.8111	0.059	0.167	0.045	0.000
2.9333	0.059	0.175	0.050	0.000
3.0556	0.059	0.182	0.054	0.000
3.1778	0.059	0.189	0.058	0.000
3.3000	0.059	0.197	0.061	0.000
3.4222	0.059	0.204	0.064	0.000
3.5444	0.059	0.211	0.067	0.000
3.6667	0.059	0.218	0.069	0.000
3.7889	0.059	0.226	0.072	0.000
3.9111	0.059	0.233	0.074	0.000
4.0333	0.059	0.240	0.077	0.000
4.1556	0.059	0.248	0.079	0.000
4.2778	0.059	0.255	0.081	0.000
4.4000	0.059	0.262	0.083	0.000
4.5222	0.059	0.269	0.085	0.000
4.6444	0.059	0.277	0.087	0.000
4.7667	0.059	0.284	0.089	0.000
4.8889	0.059	0.291	0.091	0.000
5.0111	0.059	0.299	0.093	0.000
5.1333	0.059	0.306	0.095	0.000
5.2556	0.059	0.313	0.097	0.000
5.3778	0.059	0.321	0.098	0.000
5.5000	0.059	0.328	0.100	0.000
5.6222	0.059	0.335	0.107	0.000
5.7444	0.059	0.342	0.119	0.000
5.8667	0.059	0.350	0.132	0.000
5.9889	0.059	0.357	0.148	0.000
6.1111	0.059	0.364	0.164	0.000
6.2333	0.059	0.372	0.181	0.000
6.3556	0.059	0.379	0.199	0.000
6.4778	0.059	0.386	0.216	0.000
6.6000	0.059	0.393	0.237	0.000
6.7222	0.059	0.401	0.260	0.000
6.8444	0.059	0.408	0.283	0.000
6.9667	0.059	0.415	0.368	0.000
7.0889	0.059	0.423	0.940	0.000
7.2111	0.059	0.430	2.424	0.000
7.3333	0.059	0.437	4.360	0.000
7.4556	0.059	0.445	6.495	0.000
7.5778	0.059	0.452	8.572	0.000
7.7000	0.059	0.459	10.35	0.000
7.8222	0.059	0.466	11.67	0.000
7.9444	0.059	0.474	12.54	0.000
8.0667	0.059	0.481	13.40	0.000
8.1889	0.059	0.488	14.12	0.000
8.3111	0.059	0.496	14.81	0.000

8.4333	0.059	0.503	15.47	0.000
8.5556	0.059	0.510	16.10	0.000
8.6778	0.059	0.518	16.71	0.000
8.8000	0.059	0.525	17.30	0.000
8.9222	0.059	0.532	17.86	0.000
9.0444	0.059	0.539	18.41	0.000
9.1667	0.059	0.547	18.94	0.000
9.2889	0.059	0.554	19.46	0.000
9.4111	0.059	0.561	19.96	0.000
9.5333	0.059	0.569	20.45	0.000
9.6556	0.059	0.576	20.93	0.000
9.7778	0.059	0.583	21.40	0.000
9.9000	0.059	0.590	21.86	0.000
10.022	0.059	0.598	22.31	0.000
10.144	0.059	0.605	22.75	0.000
10.267	0.059	0.612	23.18	0.000
10.389	0.059	0.620	23.60	0.000
10.511	0.059	0.627	24.02	0.000
10.633	0.059	0.634	24.42	0.000
10.756	0.059	0.642	24.83	0.000
10.878	0.059	0.649	25.22	0.000
11.000	0.059	0.656	25.61	0.000
11.122	0.059	0.663	25.99	0.000
11.244	0.000	0.000	26.37	0.000

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:1.6
Total Impervious Area:0

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.65
Total Impervious Area:0.95

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.052879
5 year	0.079129
10 year	0.098565
25 year	0.125433
50 year	0.147125
100 year	0.170259

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.033843
5 year	0.05075

10 year	0.064415
25 year	0.084816
50 year	0.102509
100 year	0.12253

Stream Protection Duration
Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.036	0.026
1950	0.061	0.028
1951	0.047	0.025
1952	0.040	0.022
1953	0.035	0.022
1954	0.150	0.031
1955	0.077	0.050
1956	0.063	0.054
1957	0.072	0.057
1958	0.061	0.026
1959	0.057	0.039
1960	0.052	0.043
1961	0.053	0.040
1962	0.047	0.026
1963	0.074	0.024
1964	0.051	0.024
1965	0.045	0.032
1966	0.029	0.024
1967	0.066	0.026
1968	0.078	0.052
1969	0.104	0.025
1970	0.040	0.025
1971	0.061	0.052
1972	0.053	0.027
1973	0.039	0.027
1974	0.084	0.028
1975	0.038	0.024
1976	0.039	0.028
1977	0.034	0.024
1978	0.042	0.023
1979	0.090	0.028
1980	0.050	0.023
1981	0.041	0.025
1982	0.049	0.059
1983	0.080	0.025
1984	0.047	0.060
1985	0.066	0.045
1986	0.159	0.095
1987	0.067	0.074
1988	0.041	0.044
1989	0.039	0.019
1990	0.047	0.051
1991	0.050	0.043
1992	0.042	0.040
1993	0.033	0.023
1994	0.028	0.028
1995	0.050	0.055
1996	0.105	0.057

1997	0.180	0.160
1998	0.035	0.023
1999	0.043	0.032
2000	0.030	0.056
2001	0.012	0.019
2002	0.047	0.042
2003	0.036	0.027
2004	0.058	0.066
2005	0.045	0.030
2006	0.102	0.064
2007	0.091	0.032
2008	0.138	0.097
2009	0.040	0.026

Stream Protection Duration
Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.1799	0.1604
2	0.1587	0.0973
3	0.1504	0.0947
4	0.1376	0.0742
5	0.1049	0.0661
6	0.1040	0.0636
7	0.1025	0.0599
8	0.0912	0.0586
9	0.0901	0.0571
10	0.0843	0.0567
11	0.0803	0.0557
12	0.0777	0.0552
13	0.0768	0.0540
14	0.0736	0.0524
15	0.0724	0.0516
16	0.0670	0.0509
17	0.0661	0.0500
18	0.0657	0.0454
19	0.0630	0.0437
20	0.0610	0.0431
21	0.0607	0.0428
22	0.0606	0.0421
23	0.0577	0.0403
24	0.0572	0.0400
25	0.0533	0.0391
26	0.0532	0.0324
27	0.0520	0.0323
28	0.0512	0.0317
29	0.0504	0.0310
30	0.0503	0.0296
31	0.0502	0.0284
32	0.0494	0.0284
33	0.0473	0.0281
34	0.0472	0.0278
35	0.0472	0.0277
36	0.0467	0.0275
37	0.0465	0.0273
38	0.0445	0.0268
39	0.0445	0.0265

40	0.0431	0.0264
41	0.0425	0.0264
42	0.0417	0.0261
43	0.0414	0.0256
44	0.0409	0.0252
45	0.0403	0.0248
46	0.0399	0.0248
47	0.0395	0.0248
48	0.0395	0.0246
49	0.0391	0.0241
50	0.0387	0.0241
51	0.0384	0.0241
52	0.0358	0.0239
53	0.0358	0.0238
54	0.0353	0.0230
55	0.0348	0.0230
56	0.0337	0.0230
57	0.0329	0.0228
58	0.0296	0.0224
59	0.0292	0.0224
60	0.0281	0.0195
61	0.0125	0.0194

Stream Protection Duration
POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0264	14912	10724	71	Pass
0.0277	13351	7176	53	Pass
0.0289	11911	4284	35	Pass
0.0301	10617	4066	38	Pass
0.0313	9432	3882	41	Pass
0.0325	8399	3711	44	Pass
0.0338	7492	3576	47	Pass
0.0350	6656	3448	51	Pass
0.0362	5905	3330	56	Pass
0.0374	5215	3221	61	Pass
0.0386	4624	3123	67	Pass
0.0398	4098	2984	72	Pass
0.0411	3681	2813	76	Pass
0.0423	3262	2633	80	Pass
0.0435	2926	2477	84	Pass
0.0447	2627	2312	88	Pass
0.0459	2372	2154	90	Pass
0.0472	2143	1995	93	Pass
0.0484	1946	1844	94	Pass
0.0496	1790	1667	93	Pass
0.0508	1619	1487	91	Pass
0.0520	1468	1356	92	Pass
0.0533	1336	1242	92	Pass
0.0545	1229	1134	92	Pass
0.0557	1120	1006	89	Pass
0.0569	1034	939	90	Pass

0.0581	945	877	92	Pass
0.0594	866	831	95	Pass
0.0606	812	794	97	Pass
0.0618	755	766	101	Pass
0.0630	709	734	103	Pass
0.0642	671	701	104	Pass
0.0654	628	670	106	Pass
0.0667	603	641	106	Pass
0.0679	583	617	105	Pass
0.0691	566	599	105	Pass
0.0703	548	575	104	Pass
0.0715	526	549	104	Pass
0.0728	502	508	101	Pass
0.0740	484	477	98	Pass
0.0752	468	457	97	Pass
0.0764	456	440	96	Pass
0.0776	442	422	95	Pass
0.0789	428	405	94	Pass
0.0801	420	389	92	Pass
0.0813	409	370	90	Pass
0.0825	398	353	88	Pass
0.0837	385	337	87	Pass
0.0850	372	320	86	Pass
0.0862	354	302	85	Pass
0.0874	344	284	82	Pass
0.0886	330	253	76	Pass
0.0898	312	233	74	Pass
0.0910	296	216	72	Pass
0.0923	288	195	67	Pass
0.0935	279	176	63	Pass
0.0947	272	141	51	Pass
0.0959	266	126	47	Pass
0.0971	258	102	39	Pass
0.0984	254	77	30	Pass
0.0996	249	62	24	Pass
0.1008	245	57	23	Pass
0.1020	240	56	23	Pass
0.1032	232	54	23	Pass
0.1045	225	53	23	Pass
0.1057	219	51	23	Pass
0.1069	214	49	22	Pass
0.1081	210	47	22	Pass
0.1093	203	46	22	Pass
0.1106	197	46	23	Pass
0.1118	193	45	23	Pass
0.1130	188	43	22	Pass
0.1142	184	42	22	Pass
0.1154	179	37	20	Pass
0.1166	175	36	20	Pass
0.1179	170	34	20	Pass
0.1191	157	33	21	Pass
0.1203	145	33	22	Pass
0.1215	141	32	22	Pass
0.1227	136	31	22	Pass
0.1240	130	30	23	Pass
0.1252	124	30	24	Pass
0.1264	117	28	23	Pass

0.1276	112	28	25	Pass
0.1288	107	27	25	Pass
0.1301	104	25	24	Pass
0.1313	97	25	25	Pass
0.1325	91	24	26	Pass
0.1337	86	23	26	Pass
0.1349	74	22	29	Pass
0.1362	65	22	33	Pass
0.1374	56	21	37	Pass
0.1386	52	20	38	Pass
0.1398	47	19	40	Pass
0.1410	43	19	44	Pass
0.1422	39	18	46	Pass
0.1435	38	14	36	Pass
0.1447	32	12	37	Pass
0.1459	27	12	44	Pass
0.1471	23	11	47	Pass

Water Quality BMP Flow and Volume for POC #1
On-line facility volume: 0 **acre-feet**
On-line facility target flow: 0 **cfs.**
Adjusted for 15 min: 0 **cfs.**
Off-line facility target flow: 0 **cfs.**
Adjusted for 15 min: 0 **cfs.**

LID Report

LID Technique	Used for Water Quality Treatment?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft.)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Comment Percent Water Quality Treated
Vault 1 POC	N	163.01			N	0.00	
Total Volume Infiltrated		163.01	0.00	0.00		0.00	0.00

0% No Treat. Credit
Compliance with LID Standard 8
Duration Analysis Result = Passed

Perlnd and Implnd Changes

No changes have been made.

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WWHM2012
PROJECT REPORT

Project Name: East Vault_20240425
Site Name:
Site Address:
City :
Report Date: 4/25/2024
Gage : Everett
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2023/01/27
Version : 4.2.19

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : ONSITE BASIN
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Forest, Steep	7.24
Pervious Total	7.24

Impervious Land Use	acre
Impervious Total	0
Basin Total	7.24

Element Flows To:

Surface	Interflow	Groundwater

Name : Upstream Basin
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Lawn, Flat	.74

Pervious Total	**0.74**

Impervious Land Use	**acre**
ROADS FLAT	**0.15**
ROOF TOPS FLAT	**0.14**
Impervious Total	**0.29**
Basin Total	**1.03**

Element Flows To:

Surface	**Interflow**	**Groundwater**

MITIGATED LAND USE

Name : COLLECTED BASIN
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
C, Pasture, Flat	**2.6**
Pervious Total	**2.6**

Impervious Land Use	**acre**
ROADS FLAT	**1.46**
ROOF TOPS FLAT	**1.59**
DRIVEWAYS FLAT	**0.43**
SIDEWALKS FLAT	**0.4**
Impervious Total	**3.88**
Basin Total	**6.48**

Element Flows To:

Surface	**Interflow**	**Groundwater**
Vault 1	Vault 1	

Name : 44TH ROW BYPASS
Bypass: Yes

GroundWater: No

Pervious Land Use	**acre**

C, Pasture, Steep	.08
Pervious Total	0.08

Impervious Land Use	acre
ROADS STEEP	0.1
SIDEWALKS STEEP	0.05
Impervious Total	0.15
Basin Total	0.23

Element Flows To:
Surface **Interflow** **Groundwater**

Name : LOTS 7-17
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
C, Pasture, Flat	.26
Pervious Total	0.26

Impervious Land Use	acre
ROOF TOPS FLAT	0.26
Impervious Total	0.26
Basin Total	0.52

Element Flows To:
Surface **Interflow** **Groundwater**

Name : Vault 1
Width : 67 ft.
Length : 67 ft.
Depth: 14 ft.
Discharge Structure
Riser Height: 13 ft.
Riser Diameter: 18 in.
Orifice 1 Diameter: 1.65625 in. **Elevation:** 0 ft.
Orifice 2 Diameter: 1.625 in. **Elevation:** 5.3 ft.
Orifice 3 Diameter: 1.875 in. **Elevation:** 8.3 ft.

Element Flows To:
Outlet 1 **Outlet 2**

Vault Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.103	0.000	0.000	0.000
0.1556	0.103	0.016	0.029	0.000
0.3111	0.103	0.032	0.041	0.000
0.4667	0.103	0.048	0.050	0.000
0.6222	0.103	0.064	0.058	0.000
0.7778	0.103	0.080	0.065	0.000
0.9333	0.103	0.096	0.071	0.000
1.0889	0.103	0.112	0.077	0.000
1.2444	0.103	0.128	0.083	0.000
1.4000	0.103	0.144	0.088	0.000
1.5556	0.103	0.160	0.092	0.000
1.7111	0.103	0.176	0.097	0.000
1.8667	0.103	0.192	0.101	0.000
2.0222	0.103	0.208	0.105	0.000
2.1778	0.103	0.224	0.109	0.000
2.3333	0.103	0.240	0.113	0.000
2.4889	0.103	0.256	0.117	0.000
2.6444	0.103	0.272	0.121	0.000
2.8000	0.103	0.288	0.124	0.000
2.9556	0.103	0.304	0.128	0.000
3.1111	0.103	0.320	0.131	0.000
3.2667	0.103	0.336	0.134	0.000
3.4222	0.103	0.352	0.137	0.000
3.5778	0.103	0.368	0.140	0.000
3.7333	0.103	0.384	0.143	0.000
3.8889	0.103	0.400	0.146	0.000
4.0444	0.103	0.416	0.149	0.000
4.2000	0.103	0.432	0.152	0.000
4.3556	0.103	0.448	0.155	0.000
4.5111	0.103	0.464	0.158	0.000
4.6667	0.103	0.480	0.160	0.000
4.8222	0.103	0.496	0.163	0.000
4.9778	0.103	0.513	0.166	0.000
5.1333	0.103	0.529	0.168	0.000
5.2889	0.103	0.545	0.171	0.000
5.4444	0.103	0.561	0.200	0.000
5.6000	0.103	0.577	0.215	0.000
5.7556	0.103	0.593	0.227	0.000
5.9111	0.103	0.609	0.237	0.000
6.0667	0.103	0.625	0.246	0.000
6.2222	0.103	0.641	0.254	0.000
6.3778	0.103	0.657	0.262	0.000
6.5333	0.103	0.673	0.269	0.000
6.6889	0.103	0.689	0.277	0.000
6.8444	0.103	0.705	0.283	0.000
7.0000	0.103	0.721	0.290	0.000
7.1556	0.103	0.737	0.296	0.000

7.3111	0.103	0.753	0.302	0.000
7.4667	0.103	0.769	0.308	0.000
7.6222	0.103	0.785	0.314	0.000
7.7778	0.103	0.801	0.320	0.000
7.9333	0.103	0.817	0.326	0.000
8.0889	0.103	0.833	0.331	0.000
8.2444	0.103	0.849	0.336	0.000
8.4000	0.103	0.865	0.372	0.000
8.5556	0.103	0.881	0.395	0.000
8.7111	0.103	0.897	0.413	0.000
8.8667	0.103	0.913	0.428	0.000
9.0222	0.103	0.929	0.442	0.000
9.1778	0.103	0.945	0.456	0.000
9.3333	0.103	0.961	0.468	0.000
9.4889	0.103	0.977	0.480	0.000
9.6444	0.103	0.993	0.491	0.000
9.8000	0.103	1.009	0.501	0.000
9.9556	0.103	1.026	0.512	0.000
10.111	0.103	1.042	0.522	0.000
10.267	0.103	1.058	0.532	0.000
10.422	0.103	1.074	0.541	0.000
10.578	0.103	1.090	0.550	0.000
10.733	0.103	1.106	0.559	0.000
10.889	0.103	1.122	0.568	0.000
11.044	0.103	1.138	0.577	0.000
11.200	0.103	1.154	0.585	0.000
11.356	0.103	1.170	0.594	0.000
11.511	0.103	1.186	0.602	0.000
11.667	0.103	1.202	0.610	0.000
11.822	0.103	1.218	0.618	0.000
11.978	0.103	1.234	0.625	0.000
12.133	0.103	1.250	0.633	0.000
12.289	0.103	1.266	0.640	0.000
12.444	0.103	1.282	0.648	0.000
12.600	0.103	1.298	0.655	0.000
12.756	0.103	1.314	0.662	0.000
12.911	0.103	1.330	0.670	0.000
13.067	0.103	1.346	0.950	0.000
13.222	0.103	1.362	2.321	0.000
13.378	0.103	1.378	4.077	0.000
13.533	0.103	1.394	5.621	0.000
13.689	0.103	1.410	6.553	0.000
13.844	0.103	1.426	7.223	0.000
14.000	0.103	1.442	7.804	0.000
14.156	0.103	1.458	8.342	0.000
14.311	0.000	0.000	8.845	0.000

Name : Upstream Basin
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
C, Lawn, Flat	**.74**

Pervious Total **0.74**

Impervious Land Use	acre
ROADS FLAT	0.15
ROOF TOPS FLAT	0.14
Impervious Total	0.29
Basin Total	1.03

Element Flows To:

Surface	Interflow	Groundwater
Vault 1	Vault 1	

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:7.98
Total Impervious Area:0.29

Mitigated Landuse Totals for POC #1
Total Pervious Area:3.68
Total Impervious Area:4.58

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.369177
5 year	0.563945
10 year	0.71039
25 year	0.91524
50 year	1.082307
100 year	1.261867

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.310765
5 year	0.416871
10 year	0.497123
25 year	0.610529
50 year	0.704187
100 year	0.806122

Stream Protection Duration
Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.381	0.264
1950	0.527	0.326
1951	0.329	0.286
1952	0.338	0.265
1953	0.330	0.299
1954	1.057	0.426
1955	0.492	0.324
1956	0.371	0.330
1957	0.538	0.366
1958	0.798	0.528
1959	0.337	0.278
1960	0.342	0.293
1961	0.941	0.644
1962	0.371	0.296
1963	0.646	0.354
1964	0.320	0.232
1965	0.251	0.218
1966	0.196	0.207
1967	0.385	0.473
1968	0.443	0.362
1969	1.026	0.503
1970	0.255	0.234
1971	0.450	0.286
1972	0.358	0.389
1973	0.280	0.293
1974	0.601	0.364
1975	0.373	0.298
1976	0.237	0.289
1977	0.217	0.249
1978	0.283	0.235
1979	0.721	0.396
1980	0.323	0.249
1981	0.291	0.239
1982	0.294	0.385
1983	0.515	0.278
1984	0.271	0.313
1985	0.419	0.336
1986	0.895	0.729
1987	0.372	0.400
1988	0.249	0.258
1989	0.377	0.261
1990	0.280	0.275
1991	0.301	0.298
1992	0.299	0.266
1993	0.213	0.241
1994	0.181	0.249
1995	0.278	0.306
1996	0.667	0.382
1997	1.146	0.985
1998	0.297	0.313
1999	0.263	0.219
2000	0.303	0.469
2001	0.092	0.229
2002	0.268	0.243
2003	0.204	0.230
2004	0.348	0.469

2005	0.259	0.240
2006	0.695	0.407
2007	0.631	0.351
2008	0.747	0.718
2009	0.250	0.241

Stream Protection Duration
Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	1.1455	0.9847
2	1.0573	0.7286
3	1.0264	0.7178
4	0.9407	0.6443
5	0.8949	0.5280
6	0.7981	0.5034
7	0.7473	0.4726
8	0.7210	0.4693
9	0.6953	0.4688
10	0.6666	0.4265
11	0.6459	0.4073
12	0.6309	0.4002
13	0.6010	0.3957
14	0.5383	0.3889
15	0.5274	0.3849
16	0.5151	0.3819
17	0.4918	0.3656
18	0.4502	0.3645
19	0.4433	0.3620
20	0.4192	0.3535
21	0.3852	0.3512
22	0.3813	0.3362
23	0.3773	0.3302
24	0.3727	0.3262
25	0.3720	0.3235
26	0.3710	0.3134
27	0.3706	0.3126
28	0.3575	0.3058
29	0.3481	0.2990
30	0.3422	0.2980
31	0.3376	0.2979
32	0.3371	0.2964
33	0.3301	0.2934
34	0.3285	0.2928
35	0.3225	0.2892
36	0.3197	0.2859
37	0.3029	0.2859
38	0.3006	0.2781
39	0.2991	0.2775
40	0.2967	0.2752
41	0.2938	0.2661
42	0.2911	0.2650
43	0.2827	0.2642
44	0.2805	0.2610
45	0.2796	0.2583
46	0.2785	0.2491
47	0.2711	0.2491

48	0.2680	0.2487
49	0.2633	0.2429
50	0.2594	0.2414
51	0.2555	0.2409
52	0.2507	0.2403
53	0.2497	0.2390
54	0.2490	0.2355
55	0.2373	0.2339
56	0.2170	0.2321
57	0.2127	0.2301
58	0.2035	0.2287
59	0.1957	0.2189
60	0.1814	0.2184
61	0.0921	0.2074

Stream Protection Duration
POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1846	7563	7069	93	Pass
0.1937	6385	5728	89	Pass
0.2027	5452	4821	88	Pass
0.2118	4641	4184	90	Pass
0.2209	3953	3653	92	Pass
0.2299	3399	3208	94	Pass
0.2390	2924	2845	97	Pass
0.2481	2496	2479	99	Pass
0.2571	2182	2190	100	Pass
0.2662	1918	1866	97	Pass
0.2753	1703	1604	94	Pass
0.2843	1496	1370	91	Pass
0.2934	1314	1174	89	Pass
0.3025	1160	1039	89	Pass
0.3115	1039	914	87	Pass
0.3206	943	826	87	Pass
0.3297	865	739	85	Pass
0.3387	791	657	83	Pass
0.3478	723	604	83	Pass
0.3569	668	553	82	Pass
0.3659	626	512	81	Pass
0.3750	585	481	82	Pass
0.3841	555	461	83	Pass
0.3931	525	436	83	Pass
0.4022	502	417	83	Pass
0.4113	478	402	84	Pass
0.4204	459	388	84	Pass
0.4294	439	375	85	Pass
0.4385	422	362	85	Pass
0.4476	399	353	88	Pass
0.4566	376	339	90	Pass
0.4657	358	333	93	Pass
0.4748	342	323	94	Pass
0.4838	329	313	95	Pass

0.4929	315	303	96	Pass
0.5020	301	294	97	Pass
0.5110	287	282	98	Pass
0.5201	272	274	100	Pass
0.5292	262	265	101	Pass
0.5382	248	255	102	Pass
0.5473	241	245	101	Pass
0.5564	236	232	98	Pass
0.5654	230	220	95	Pass
0.5745	221	206	93	Pass
0.5836	212	197	92	Pass
0.5926	204	190	93	Pass
0.6017	197	171	86	Pass
0.6108	184	160	86	Pass
0.6198	171	147	85	Pass
0.6289	161	137	85	Pass
0.6380	145	127	87	Pass
0.6470	135	116	85	Pass
0.6561	125	100	80	Pass
0.6652	117	86	73	Pass
0.6743	108	74	68	Pass
0.6833	97	62	63	Pass
0.6924	87	50	57	Pass
0.7015	79	44	55	Pass
0.7105	70	38	54	Pass
0.7196	63	30	47	Pass
0.7287	50	27	54	Pass
0.7377	44	22	50	Pass
0.7468	41	17	41	Pass
0.7559	33	14	42	Pass
0.7649	28	14	50	Pass
0.7740	25	12	48	Pass
0.7831	23	11	47	Pass
0.7921	20	8	40	Pass
0.8012	17	8	47	Pass
0.8103	15	7	46	Pass
0.8193	14	7	50	Pass
0.8284	13	6	46	Pass
0.8375	10	6	60	Pass
0.8465	9	5	55	Pass
0.8556	9	5	55	Pass
0.8647	9	4	44	Pass
0.8737	9	4	44	Pass
0.8828	6	4	66	Pass
0.8919	6	4	66	Pass
0.9009	5	4	80	Pass
0.9100	5	4	80	Pass
0.9191	5	4	80	Pass
0.9282	5	3	60	Pass
0.9372	5	2	40	Pass
0.9463	4	2	50	Pass
0.9554	4	2	50	Pass
0.9644	4	2	50	Pass
0.9735	4	2	50	Pass
0.9826	4	1	25	Pass
0.9916	4	0	0	Pass
1.0007	4	0	0	Pass

1.0098	4	0	0	Pass
1.0188	4	0	0	Pass
1.0279	2	0	0	Pass
1.0370	2	0	0	Pass
1.0460	2	0	0	Pass
1.0551	2	0	0	Pass
1.0642	1	0	0	Pass
1.0732	1	0	0	Pass
1.0823	1	0	0	Pass

Water Quality BMP Flow and Volume for POC #1
On-line facility volume: 0 **acre-feet**
On-line facility target flow: 0 **cfs.**
Adjusted for 15 min: 0 **cfs.**
Off-line facility target flow: 0 **cfs.**
Adjusted for 15 min: 0 **cfs.**

LID Report

LID Technique	Used for Water Quality Treatment?	Total Volume Percent Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft.)	Cumulative Volume Infiltration Credit	Percent Volume Infiltrated	Water Quality Treated	Comment
Vault 1 POC	N	755.56			N	0.00		
Total Volume Infiltrated		755.56	0.00	0.00	0.00	0.00	0%	No Treat. Credit

Compliance with LID Standard 8
Duration Analysis Result = Failed

Perlnd and Implnd Changes

No changes have been made.

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WWHM2012
PROJECT REPORT

Project Name: 44th ROW Bypass
Site Name:
Site Address:
City :
Report Date: 4/25/2024
Gage : Everett
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2023/01/27
Version : 4.2.19

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : 44th ROW bypass
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Pasture, Steep	.08
Pervious Total	0.08

Impervious Land Use	acre
ROADS STEEP	0.1
SIDEWALKS STEEP	0.05
Impervious Total	0.15
Basin Total	0.23

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : 44TH ROW BYPASS
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Pasture, Steep	.08
Pervious Total	0.08

Impervious Land Use	acre
ROADS STEEP	0.1
SIDEWALKS STEEP	0.05
Impervious Total	0.15
Basin Total	0.23

Element Flows To:

Surface	Interflow	Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.08
Total Impervious Area:0.15

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.08
Total Impervious Area:0.15

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.085234
5 year	0.115409
10 year	0.137943
25 year	0.169467
50 year	0.195269
100 year	0.223148

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.085234
5 year	0.115409
10 year	0.137943
25 year	0.169467

50 year	0.195269
100 year	0.223148

Stream Protection Duration
Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.087	0.087
1950	0.083	0.083
1951	0.112	0.112
1952	0.080	0.080
1953	0.089	0.089
1954	0.134	0.134
1955	0.105	0.105
1956	0.049	0.049
1957	0.074	0.074
1958	0.188	0.188
1959	0.081	0.081
1960	0.080	0.080
1961	0.278	0.278
1962	0.090	0.090
1963	0.090	0.090
1964	0.069	0.069
1965	0.075	0.075
1966	0.073	0.073
1967	0.147	0.147
1968	0.072	0.072
1969	0.166	0.166
1970	0.066	0.066
1971	0.083	0.083
1972	0.106	0.106
1973	0.085	0.085
1974	0.113	0.113
1975	0.086	0.086
1976	0.065	0.065
1977	0.062	0.062
1978	0.056	0.056
1979	0.104	0.104
1980	0.112	0.112
1981	0.064	0.064
1982	0.080	0.080
1983	0.086	0.086
1984	0.081	0.081
1985	0.110	0.110
1986	0.111	0.111
1987	0.095	0.095
1988	0.089	0.089
1989	0.078	0.078
1990	0.067	0.067
1991	0.100	0.100
1992	0.082	0.082
1993	0.069	0.069
1994	0.074	0.074
1995	0.069	0.069
1996	0.115	0.115
1997	0.102	0.102
1998	0.106	0.106

1999	0.043	0.043
2000	0.195	0.195
2001	0.048	0.048
2002	0.061	0.061
2003	0.078	0.078
2004	0.146	0.146
2005	0.070	0.070
2006	0.104	0.104
2007	0.093	0.093
2008	0.079	0.079
2009	0.064	0.064

Stream Protection Duration
Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.2782	0.2782
2	0.1951	0.1951
3	0.1881	0.1881
4	0.1659	0.1659
5	0.1465	0.1465
6	0.1457	0.1457
7	0.1342	0.1342
8	0.1154	0.1154
9	0.1131	0.1131
10	0.1122	0.1122
11	0.1119	0.1119
12	0.1115	0.1115
13	0.1102	0.1102
14	0.1060	0.1060
15	0.1059	0.1059
16	0.1054	0.1054
17	0.1045	0.1045
18	0.1041	0.1041
19	0.1017	0.1017
20	0.0996	0.0996
21	0.0952	0.0952
22	0.0926	0.0926
23	0.0902	0.0902
24	0.0899	0.0899
25	0.0892	0.0892
26	0.0892	0.0892
27	0.0866	0.0866
28	0.0864	0.0864
29	0.0862	0.0862
30	0.0850	0.0850
31	0.0833	0.0833
32	0.0827	0.0827
33	0.0817	0.0817
34	0.0812	0.0812
35	0.0807	0.0807
36	0.0803	0.0803
37	0.0800	0.0800
38	0.0796	0.0796
39	0.0793	0.0793
40	0.0781	0.0781
41	0.0779	0.0779

42	0.0746	0.0746
43	0.0744	0.0744
44	0.0739	0.0739
45	0.0734	0.0734
46	0.0718	0.0718
47	0.0701	0.0701
48	0.0695	0.0695
49	0.0689	0.0689
50	0.0688	0.0688
51	0.0669	0.0669
52	0.0658	0.0658
53	0.0653	0.0653
54	0.0641	0.0641
55	0.0637	0.0637
56	0.0624	0.0624
57	0.0610	0.0610
58	0.0555	0.0555
59	0.0494	0.0494
60	0.0481	0.0481
61	0.0426	0.0426

Stream Protection Duration
POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0426	794	794	100	Pass
0.0442	706	706	100	Pass
0.0457	634	634	100	Pass
0.0472	563	563	100	Pass
0.0488	505	505	100	Pass
0.0503	461	461	100	Pass
0.0519	413	413	100	Pass
0.0534	382	382	100	Pass
0.0550	344	344	100	Pass
0.0565	315	315	100	Pass
0.0580	285	285	100	Pass
0.0596	259	259	100	Pass
0.0611	242	242	100	Pass
0.0627	216	216	100	Pass
0.0642	200	200	100	Pass
0.0657	178	178	100	Pass
0.0673	159	159	100	Pass
0.0688	146	146	100	Pass
0.0704	135	135	100	Pass
0.0719	126	126	100	Pass
0.0735	120	120	100	Pass
0.0750	112	112	100	Pass
0.0765	103	103	100	Pass
0.0781	97	97	100	Pass
0.0796	94	94	100	Pass
0.0812	84	84	100	Pass
0.0827	76	76	100	Pass
0.0842	71	71	100	Pass

0.0858	65	65	100	Pass
0.0873	55	55	100	Pass
0.0889	51	51	100	Pass
0.0904	45	45	100	Pass
0.0920	39	39	100	Pass
0.0935	38	38	100	Pass
0.0950	35	35	100	Pass
0.0966	33	33	100	Pass
0.0981	32	32	100	Pass
0.0997	31	31	100	Pass
0.1012	31	31	100	Pass
0.1028	29	29	100	Pass
0.1043	27	27	100	Pass
0.1058	22	22	100	Pass
0.1074	19	19	100	Pass
0.1089	19	19	100	Pass
0.1105	17	17	100	Pass
0.1120	15	15	100	Pass
0.1135	13	13	100	Pass
0.1151	13	13	100	Pass
0.1166	12	12	100	Pass
0.1182	12	12	100	Pass
0.1197	12	12	100	Pass
0.1213	12	12	100	Pass
0.1228	12	12	100	Pass
0.1243	12	12	100	Pass
0.1259	12	12	100	Pass
0.1274	12	12	100	Pass
0.1290	12	12	100	Pass
0.1305	12	12	100	Pass
0.1320	11	11	100	Pass
0.1336	10	10	100	Pass
0.1351	8	8	100	Pass
0.1367	8	8	100	Pass
0.1382	8	8	100	Pass
0.1398	8	8	100	Pass
0.1413	7	7	100	Pass
0.1428	7	7	100	Pass
0.1444	7	7	100	Pass
0.1459	6	6	100	Pass
0.1475	5	5	100	Pass
0.1490	5	5	100	Pass
0.1506	5	5	100	Pass
0.1521	5	5	100	Pass
0.1536	5	5	100	Pass
0.1552	5	5	100	Pass
0.1567	5	5	100	Pass
0.1583	5	5	100	Pass
0.1598	5	5	100	Pass
0.1613	5	5	100	Pass
0.1629	5	5	100	Pass
0.1644	5	5	100	Pass
0.1660	4	4	100	Pass
0.1675	4	4	100	Pass
0.1691	4	4	100	Pass
0.1706	4	4	100	Pass
0.1721	4	4	100	Pass

0.1737	4	4	100	Pass
0.1752	4	4	100	Pass
0.1768	4	4	100	Pass
0.1783	4	4	100	Pass
0.1798	4	4	100	Pass
0.1814	4	4	100	Pass
0.1829	4	4	100	Pass
0.1845	4	4	100	Pass
0.1860	4	4	100	Pass
0.1876	4	4	100	Pass
0.1891	3	3	100	Pass
0.1906	3	3	100	Pass
0.1922	3	3	100	Pass
0.1937	3	3	100	Pass
0.1953	2	2	100	Pass

Water Quality BMP Flow and Volume for POC #1
On-line facility volume: 0.017 **acre-feet**
On-line facility target flow: 0.0278 **cfs.**
Adjusted for 15 min: 0.0278 **cfs.**
Off-line facility target flow: 0.0156 **cfs.**
Adjusted for 15 min: 0.0156 **cfs.**

LID Report

LID Technique	Used for Treatment?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft.)	Cumulative Volume Infiltration Credit	Percent Water Quality	Percent Volume Water Quality Treated	Comment
Total Volume Infiltrated		0.00	0.00	0.00	0.00	0.00	0%	No Treat. Credit

Compliance with LID Standard 8
Duration Analysis Result = Passed

Perlnd and Implnd Changes

No changes have been made.

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WWHM2012
PROJECT REPORT

Project Name: Lots 7-17 Bypass
Site Name:
Site Address:
City :
Report Date: 4/29/2024
Gage : Everett
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 1.00
Version Date: 2023/01/27
Version : 4.2.19

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Forest, Steep	.53
Pervious Total	**0.53**

Impervious Land Use	acre
Impervious Total	**0**
Basin Total	**0.53**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : Lots 7-17 Bypass
Bypass: No

GroundWater: No

Pervious Land Use	acre
C, Pasture, Flat	.27
Pervious Total	0.27

Impervious Land Use	acre
ROOF TOPS FLAT	0.26
Impervious Total	0.26
Basin Total	0.53

Element Flows To:
Surface Interflow Groundwater

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.53
Total Impervious Area:0

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.27
Total Impervious Area:0.26

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.017516
5 year	0.026212
10 year	0.03265
25 year	0.04155
50 year	0.048735
100 year	0.056398

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.114478
5 year	0.156018
10 year	0.186566
25 year	0.228771
50 year	0.262927
100 year	0.299492

100-year Peak
less than 0.5 cfs

Appendix 5: Conveyance Analysis

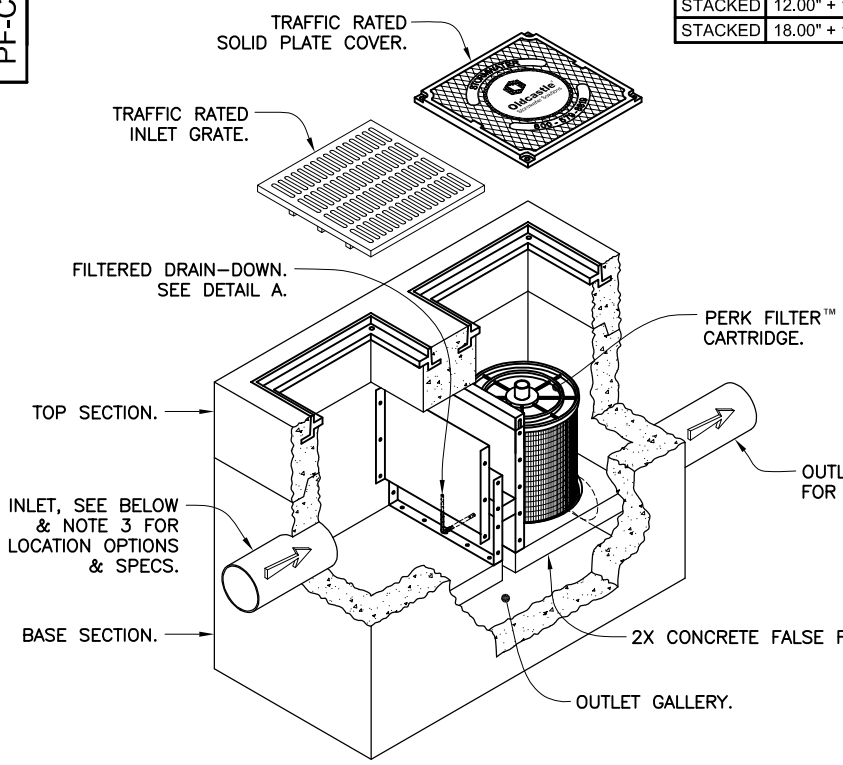
Nothing is necessary for this appendix at this time

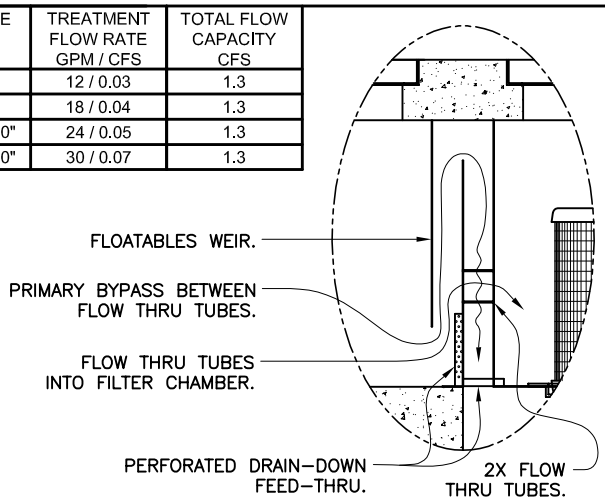
Appendix 6: Operations and Maintenance Manual

1. Operations and Maintenance Manual

PF-CCB-0001

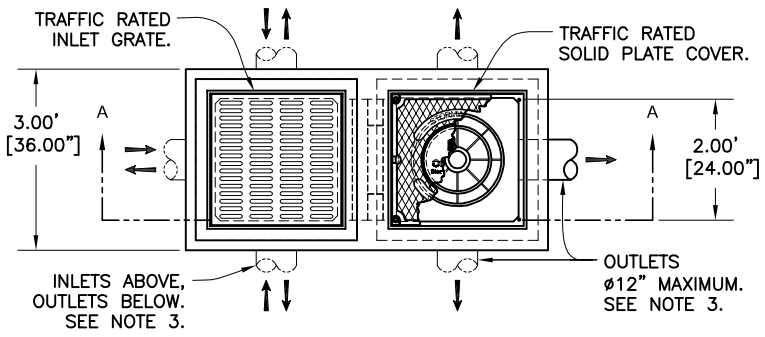
	CARTRIDGE SIZE	TREATMENT FLOW RATE GPM / CFS	TOTAL FLOW CAPACITY CFS
	12.00"	12 / 0.03	1.3
	18.00"	18 / 0.04	1.3
STACKED	12.00" + 12.00"	24 / 0.05	1.3
STACKED	18.00" + 12.00"	30 / 0.07	1.3





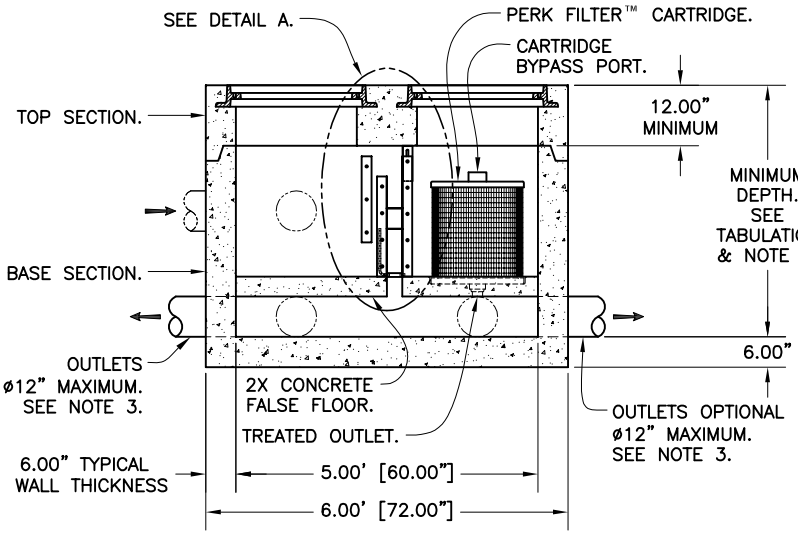
DETAIL A
INLET / BYPASS ASSEMBLY & DRAIN–DOWN SCALE: 2X

MINIMUM DEPTHS (SEE NOTE 6)					
	CARTRIDGE SIZE	Ø 6.0" OUTLET PIPE (IN INCHES)	Ø 8.0" OUTLET PIPE (IN INCHES)	Ø 10.0" OUTLET PIPE (IN INCHES)	Ø 12.0" OUTLET PIPE (IN INCHES)
	12.00"	39	41	43	45
	18.00"	46	48	50	52
STACKED	12.00" + 12.00"	56	58	60	62
STACKED	18.00" + 12.00"	63	65	67	69



Notes:

1. Precast concrete structure shall be manufactured in accordance with ASTM Designation C857 and C858.
2. Perk Filter™ Catch basin shall be supplied with traffic rated (H20) bicycle-proof grates and solid plate cover.
3. Inlet pipe(s) may enter device on three sides of the inlet chamber. Outlet pipe(s) may exit on all four sides. All pipe is Ø 12" maximum.
4. Inlet chamber shall be supplied with a drain-down device designed to remove standing water between storm events.
5. Perk Filter™ cartridge shall be maintained in accordance with manufacturer recommendations.
6. For depths less than the specified minimum contact Oldcastle® Stormwater Solutions for engineering assistance.



SECTION A-A
SINGLE CARTRIDGE CONCRETE CATCH BASIN

Media Filtration

Perk Filter™

Concrete Catch Basin

Single Cartridge

Oldcastle® Stormwater Solutions
7921 Southpark Plaza, Suite 200 | Littleton, CO | 80120 | Ph: 800.579.8819 | oldcastlestormwater.com

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DRAWING NO.	REV	ECO	DATE	SHEET
PF-CCB-0001	J	ECO–0144 ZHD 8/26/16	JPR 6/4/08	171

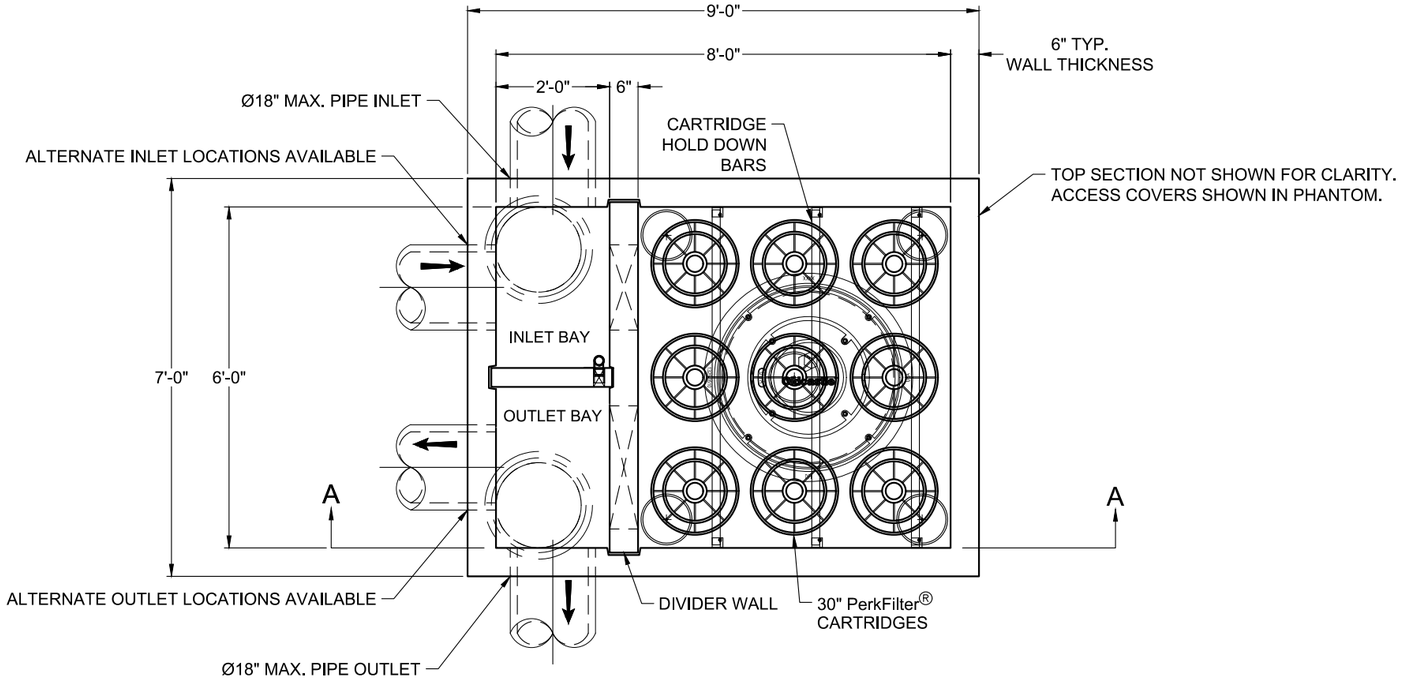
SITE SPECIFIC DATA	
Structure ID	-
Treatment Flow Rate (gpm/cfs)	-
Peak Flow Rate (cfs)	-
Cartridge Quantity	-
Rim Elevation	-

Pipe Data	Pipe Location	Pipe Size	Pipe Type	Invert Elevation
Inlet 1	-	-	-	-
Inlet 2	-	-	-	-
Outlet	-	-	-	-

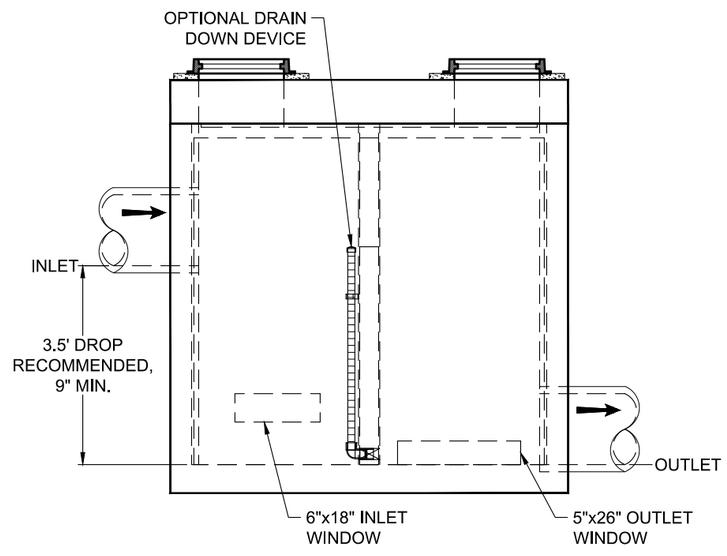
Notes:
-

PERFORMANCE SPECIFICATIONS	
Peak Treatment Capacities:[1]	
Max. Cartridge Quantity	9
NJDEP 80% Removal, 75 micron	0.682 cfs
WA Ecology GULD - Basic & Phosphorus	0.341 cfs
Max. Bypass Capacity	18.3 cfs

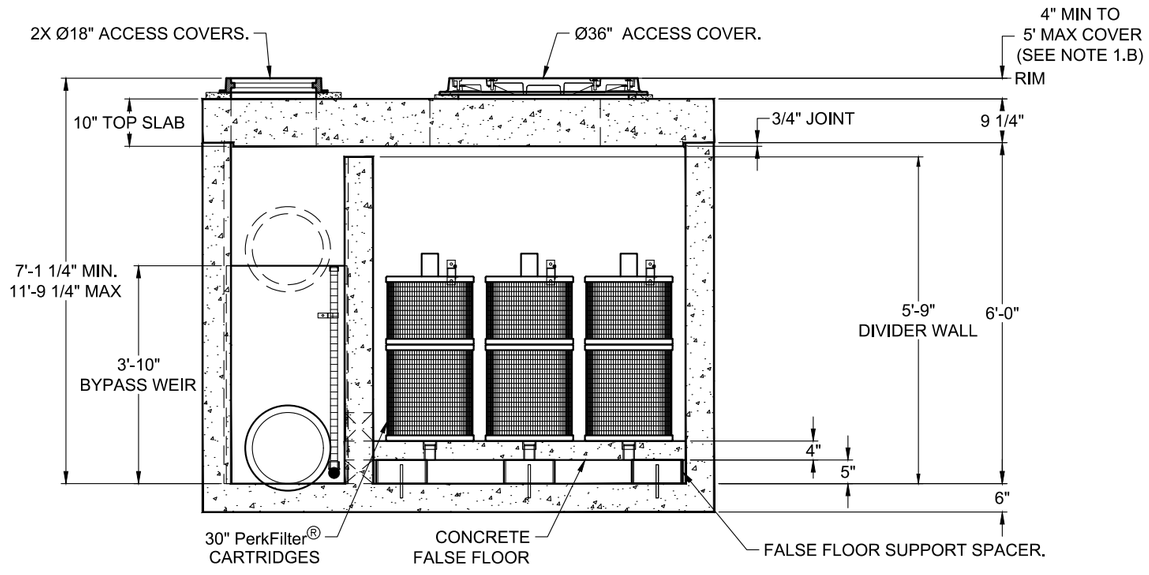
1. Contact Oldcastle for alternative treatment and peak flow capacities.



PLAN VIEW



LEFT END VIEW



SECTION A-A

NOTES:

1. DESIGN LOADINGS:
   A. AASHTO HS-20-44 (WITH IMPACT)
   B. DESIGN SOIL COVER: 5'-0" MAXIMUM
   C. ASSUMED WATER TABLE: BELOW BASE OF PRECAST (ENGINEER-OF-RECORD TO CONFIRM SITE WATER TABLE ELEVATION)
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C890
   B. ASTM C913
   C. ACI 318-14
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW OF THIS SUBMITTAL.
8. OVERSIZED HOLES TO ACCOMMODATE SPECIFIC PIPE TYPE MUST BE CONCENTRIC TO PIPE ID. AFTER PIPES ARE INSTALLED, ALL ANNULAR SPACES SHALL BE FILLED WITH A MINIMUM OF 3,000 PSI CONCRETE FOR FULL THICKNESS OF PRECAST WALLS. PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT OLDCASTLE INFRASTRUCTURE.
13. MAXIMUM PICK WEIGHTS:
   A. TOP: XX,XXX LBS
   B. BASE: XX,XXX LBS*
   (* COMBINED WEIGHT OF BASE INCLUDES DIVIDER WALLS, FALSE FLOOR, AND PRODUCT INTERNALS.)
14. INTERNALS SHALL CONSIST OF CARTRIDGES, WEIR WALL, FALSE FLOOR, FALSE FLOOR SUPPORT SPACERS, AND DIVIDER WALL.

Oldcastle Infrastructure™
A CRH COMPANY

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PerkFilter® Vault (STANDARD)
6'x8' With 30" Cartridges

CUSTOMER
-

PROJECT NAME
-

SHEET NAME	REVISION	SHEET
Specifier Drawing PFV-68-30	-	1 OF 1
	REV DATE -	

Media Filtration

SITE SPECIFIC DATA	
Structure ID	-
Treatment Flow Rate (gpm/cfs)	-
Peak Flow Rate (cfs)	-
Cartridge Quantity	-
Rim Elevation	-

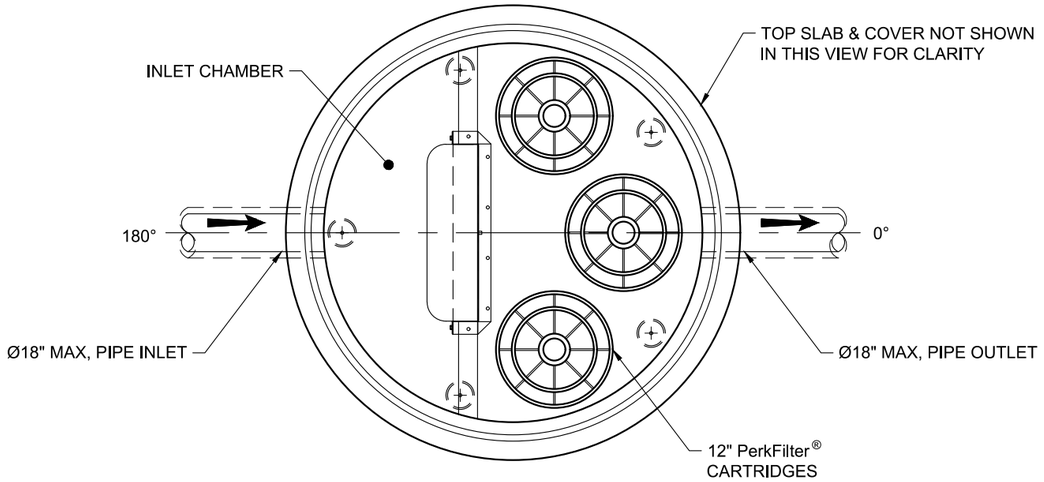
Pipe Data	Pipe Location	Pipe Size	Pipe Type	Invert Elevation
Inlet	-	-	-	-
Outlet	-	-	-	-

Notes:
-

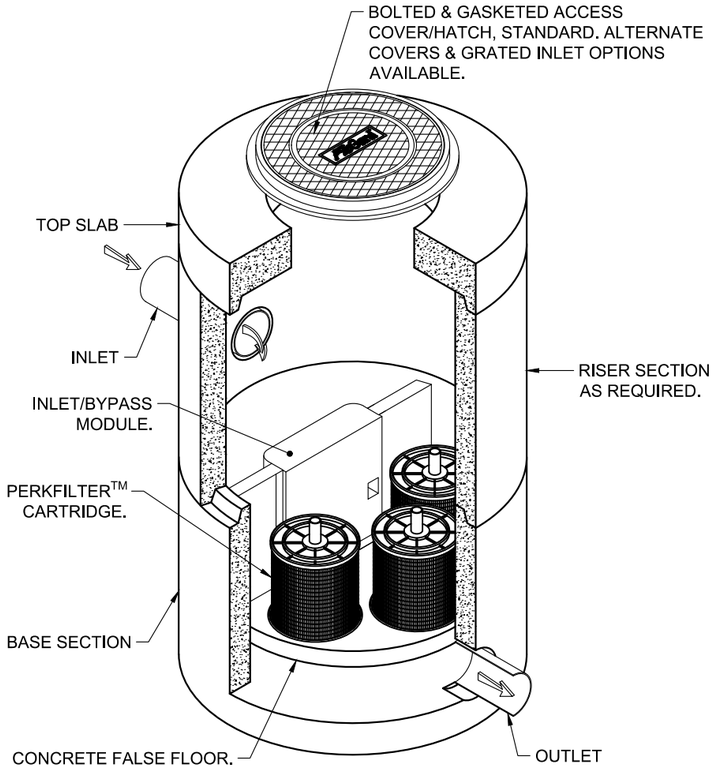
PERFORMANCE SPECIFICATIONS	
Peak Treatment Capacities: [1]	
Max. Cartridge Quantity	3
NJDEP 80% Removal, 75 micron	40.8 gpm / 0.091 cfs
WA Ecology GULD - Basic & Phosphorus	20.4 gpm / 0.045 cfs
Max. Bypass Capacity	2.47 cfs

1. Contact Oldcastle for alternative treatment and peak flow capacities.

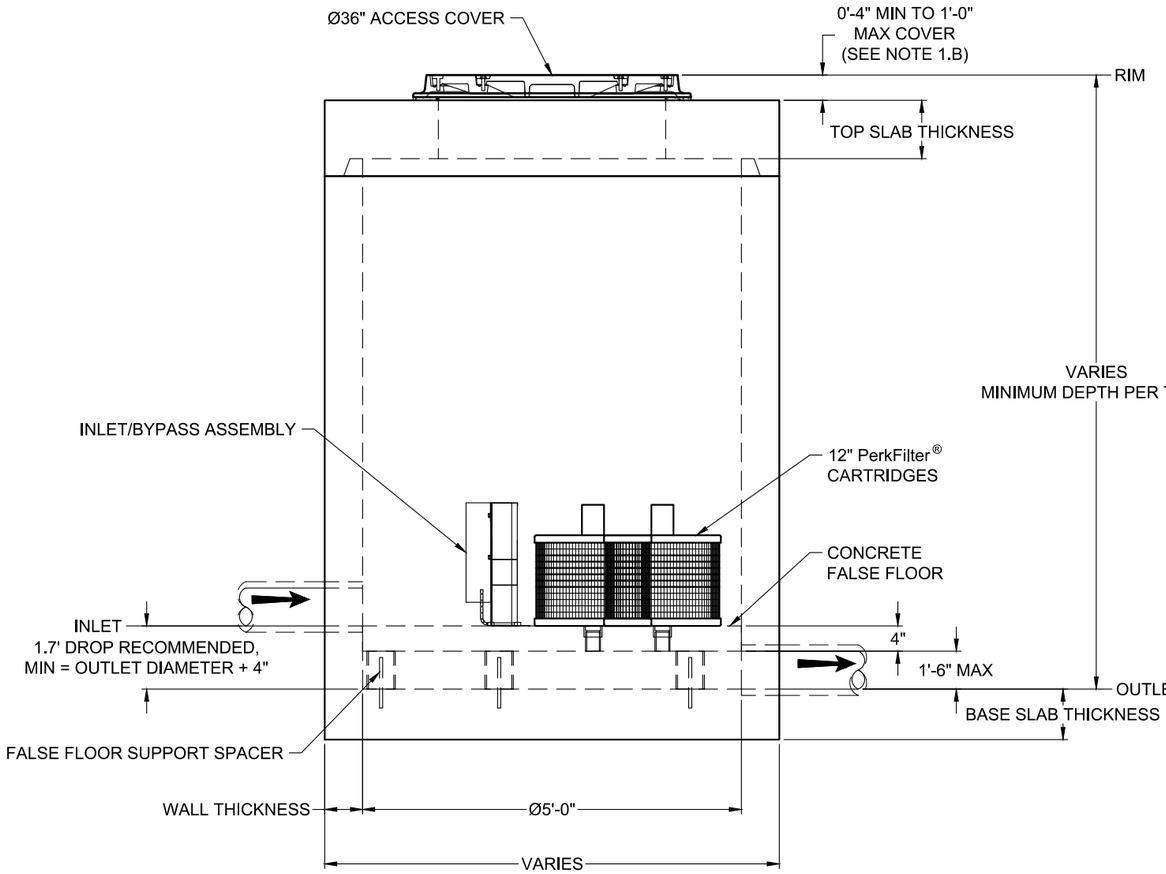
MINIMUM DEPTH	
Outlet Pipe Size	Minimum Rim to Outlet Depth
Ø6"	4.08'
Ø8"	4.08'
Ø10"	4.33'
Ø12"	4.58'
Ø15"	4.83'
Ø18"	5.08'



PLAN VIEW



ISOMETRIC VIEW



ELEVATION VIEW

NOTES:

1. DESIGN LOADINGS:
   A. AASHTO HS-20-44 (WITH IMPACT)
   B. DESIGN SOIL COVER: 1'-0" MAXIMUM
   C. ASSUMED WATER TABLE: BELOW INVERT.
   D. LATERAL EARTH PRESSURE: 45 PCF (DRAINED)
   E. LATERAL LIVE LOAD SURCHARGE: 80 PSF (APPLIED TO 8'-0" BELOW GRADE)
   F. NO LATERAL SURCHARGE FROM ADJACENT BUILDINGS, WALLS, PIERS, OR FOUNDATIONS.
2. CONCRETE 28-DAY MINIMUM COMPRESSIVE STRENGTH: 5,000 PSI MINIMUM.
3. REINFORCING: REBAR, ASTM A615/A706, GRADE 60
4. CEMENT: ASTM C150
5. REQUIRED ALLOWABLE SOIL BEARING CAPACITY: 2,500 PSF
6. REFERENCE STANDARD:
   A. ASTM C 478
   B. ASTM C 497
7. THIS STRUCTURE IS DESIGNED TO THE PARAMETERS NOTED HEREIN. ENGINEER-OF-RECORD SHALL VERIFY THAT NOTED PARAMETERS MEET OR EXCEED PROJECT REQUIREMENTS. IF DESIGN PARAMETERS ARE INCORRECT, REVIEWING ENGINEER/AUTHORITY SHALL NOTIFY OLDCASTLE INFRASTRUCTURE UPON REVIEW OF THIS SUBMITTAL.
8. OVERSIZED HOLES TO ACCOMMODATE SPECIFIC PIPE TYPE MUST BE CONCENTRIC TO PIPE ID. AFTER PIPES ARE INSTALLED, ALL ANNULAR SPACES SHALL BE FILLED WITH A MINIMUM OF 3,000 PSI CONCRETE FOR FULL THICKNESS OF PRECAST WALLS. PIPES ARE TO BE FLUSH WITH THE INSIDE SURFACE OF THE CONCRETE STRUCTURE.
9. CONTRACTOR RESPONSIBLE TO VERIFY ALL SIZES, LOCATIONS, AND ELEVATIONS OF OPENINGS.
10. CONTRACTOR RESPONSIBLE TO ENSURE ADEQUATE BEARING SURFACE IS PROVIDED (I.E. COMPACTED AND LEVEL PER PROJECT SPECIFICATIONS).
11. SECTION HEIGHTS, SLAB/WALL THICKNESSES, AND KEYWAYS ARE SUBJECT TO CHANGE AS REQUIRED FOR SITE REQUIREMENTS AND/OR DUE TO PRODUCT AVAILABILITY AND PRODUCTION FACILITY CONSTRAINTS.
12. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT OLDCASTLE INFRASTRUCTURE.
13. MAXIMUM PICK WEIGHTS:
   A. TOP SLAB: XX,XXX LBS
   B. RISER: XX,XXX LBS
   C. BASE: XX,XXX LBS*
   (* COMBINED WEIGHT OF BASE INCLUDES FALSE FLOOR, AND PRODUCT INTERNALS.)
14. INTERNALS SHALL CONSIST OF CARTRIDGES, INLET/BYPASS ASSEMBLIES, FALSE FLOOR AND FALSE FLOOR SUPPORT SPACERS.

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PerkFilter® Manhole (STANDARD)
Ø60" with 12" Cartridges

CUSTOMER
-

PROJECT NAME
-

SHEET NAME	REVISION	SHEET
Specifier Drawing PFMH-60-12	-	1 OF 1
	REV DATE -	

Media Filtration

Appendix V-A: BMP Maintenance Tables

Ecology intends the facility-specific maintenance standards contained in this section to be conditions for determining if maintenance actions are required as identified through inspection. Recognizing that Permittees have limited maintenance funds and time, Ecology does not require that a Permittee perform all these maintenance activities on all their stormwater BMPs. We leave the determination of importance of each maintenance activity and its priority within the stormwater program to the Permittee. We do expect, however, that sufficient maintenance will occur to ensure that the BMPs continue to operate as designed to protect ground and surface waters.

Ecology doesn't intend that these measures identify the facility's required condition at all times between inspections. In other words, exceedance of these conditions at any time between inspections and/or maintenance does not automatically constitute a violation of these standards. However, based upon inspection observations, the Permittee shall adjust inspection and maintenance schedules to minimize the length of time that a facility is in a condition that requires a maintenance action.

Table V-A.1: Maintenance Standards - Detention Ponds

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
General	Trash & Debris	Any trash and debris which exceed 1 cubic feet per 1,000 square feet. In general, there should be no visual evidence of dumping. If less than threshold all trash and debris will be removed as part of next scheduled maintenance.	Trash and debris cleared from site
	Poisonous Vegetation and noxious weeds	Any poisonous or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations. (Apply requirements of adopted IPM policies for the use of herbicides).	No danger of poisonous vegetation where maintenance personnel or the public might normally be. (Coordinate with local health department) Complete eradication of noxious weeds may not be possible. Compliance with State or local eradication policies required
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants (Coordinate removal/cleanup with local water quality response agency).	No contaminants or pollutants present.
	Rodent Holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired. (Coordinate with local health department; coordinate with Ecology Dam Safety Office if pond exceeds 10 acre-feet.)
	Beaver Dams	Dam results in change or function of the facility.	Facility is returned to design function. (Coordinate trapping of beavers and removal of dams with appropriate permitting agencies)
	Insects	When insects such as wasps and hornets interfere with maintenance activities.	Insects destroyed or removed from site. Apply insecticides in compliance with adopted IPM policies
	Tree Growth and Hazard Trees	Tree growth does not allow maintenance and inspection access or interferes with maintenance activity (i.e., slope mowing, silt removal, vactoring, or equipment movements). If trees are not interfering with access or maintenance, do not remove If dead, diseased, or dying trees are identified (Use a certified Arborist to determine health of tree or removal requirements)	Trees do not hinder maintenance activities. Harvested trees should be recycled into mulch or other beneficial uses (e.g., alders for firewood). Remove hazard Trees
Side Slopes of Pond	Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g.,rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed engineer in the state of Washington should be consulted to resolve source of erosion.
Storage Area	Sediment	Accumulated sediment that exceeds 10% of the designed pond depth unless otherwise specified or affects inletting or outletting condition of the facility.	Sediment cleaned out to designed pond shape and depth; pond reseeded if necessary to control erosion.

Table V-A.1: Maintenance Standards - Detention Ponds (continued)

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
	Liner (if Applicable)	Liner is visible and has more than three 1/4-inch holes in it.	Liner repaired or replaced. Liner is fully covered.
Ponds Berms (Dikes)	Settlements	Any part of berm which has settled 4 inches lower than the design elevation If settlement is apparent, measure berm to determine amount of settlement Settling can be an indication of more severe problems with the berm or outlet works. A licensed engineer in the state of Washington should be consulted to determine the source of the settlement.	Dike is built back to the design elevation.
	Piping	Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue. (Recommend a Goethechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.	Piping eliminated. Erosion potential resolved.
Emergency Overflow/ Spillway and Berms over 4 feet in height	Tree Growth	Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping. Tree growth on berms over 4 feet in height may lead to piping through the berm which could lead to failure of the berm.	Trees should be removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed engineer in the state of Washington should be consulted for proper berm/spillway restoration.
	Piping	Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue. (Recommend a Geotechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.	Piping eliminated. Erosion potential resolved.
Emergency Overflow/Spillway	Emergency Overflow/Spillway	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of out flow path of spillway. (Rip-rap on inside slopes need not be replaced.)	Rocks and pad depth are restored to design standards.
	Erosion	See "Side Slopes of Pond"	

Table V-A.2: Maintenance Standards - Infiltration

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
General	Trash & Debris	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
	Poisonous/Noxious Vegetation	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
	Contaminants and Pollution	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
	Rodent Holes	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
Storage Area	Sediment	Water ponding in infiltration pond after rainfall ceases and appropriate time allowed for infiltration. Treatment basins should infiltrate Water Quality Design Storm Volume within 48 hours, and empty within 24 hours after cessation of most rain events.	Sediment is removed and/or facility is cleaned so that infiltration system works according to design.

Table V-A.2: Maintenance Standards - Infiltration (continued)

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
		(A percolation test pit or test of facility indicates facility is only working at 90% of its designed capabilities. Test every 2 to 5 years. If two inches or more sediment is present, remove).	
Filter Bags (if applicable)	Filled with Sediment and Debris	Sediment and debris fill bag more than 1/2 full.	Filter bag is replaced or system is redesigned.
Rock Filters	Sediment and Debris	By visual inspection, little or no water flows through filter during heavy rain storms.	Gravel in rock filter is replaced.
Side Slopes of Pond	Erosion	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
Emergency Overflow Spillway and Berms over 4 feet in height.	Tree Growth	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
	Piping	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
Emergency Overflow Spillway	Rock Missing	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
	Erosion	See Table V-A.1: Maintenance Standards - Detention Ponds	See Table V-A.1: Maintenance Standards - Detention Ponds
Pre-settling Ponds and Vaults	Facility or sump filled with Sediment and/or debris	6" or designed sediment trap depth of sediment.	Sediment is removed.

Table V-A.3: Maintenance Standards - Closed Detention Systems (Tanks/Vaults)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
Storage Area	Plugged Air Vents	One-half of the cross section of a vent is blocked at any point or the vent is damaged.	Vents open and functioning.
	Debris and Sediment	Accumulated sediment depth exceeds 10% of the diameter of the storage area for 1/2 length of storage vault or any point depth exceeds 15% of diameter. (Example: 72-inch storage tank would require cleaning when sediment reaches depth of 7 inches for more than 1/2 length of tank.)	All sediment and debris removed from storage area.
	Joints Between Tank/Pipe Section	Any openings or voids allowing material to be transported into facility. (Will require engineering analysis to determine structural stability).	All joint between tank/pipe sections are sealed.
	Tank Pipe Bent Out of Shape	Any part of tank/pipe is bent out of shape more than 10% of its design shape. (Review required by engineer to determine structural stability).	Tank/pipe repaired or replaced to design.
	Vault Structure Includes Cracks in Wall, Bottom, Damage to Frame and/or Top Slab	Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determines that the vault is not structurally sound. Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or any evidence of soil particles entering the vault through the walls.	Vault replaced or repaired to design specifications and is structurally sound. No cracks more than 1/4-inch wide at the joint of the inlet/outlet pipe.

Table V-A.3: Maintenance Standards - Closed Detention Systems (Tanks/Vaults) (continued)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
Manhole	Cover Not in Place	Cover is missing or only partially in place. Any open manhole requires maintenance.	Manhole is closed.
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread (may not apply to self-locking lids).	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. Intent is to keep cover from sealing off access to maintenance.	Cover can be removed and reinstalled by one maintenance person.
	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks.	Ladder meets design standards. Allows maintenance person safe access.
Catch Basins	See Table V-A.5: Maintenance Standards - Catch Basins	See Table V-A.5: Maintenance Standards - Catch Basins	See Table V-A.5: Maintenance Standards - Catch Basins

Table V-A.4: Maintenance Standards - Control Structure/Flow Restrictor

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash and Debris (Includes Sediment)	Material exceeds 25% of sump depth or 1 foot below orifice plate.	Control structure orifice is not blocked. All trash and debris removed.
	Structural Damage	Structure is not securely attached to manhole wall. Structure is not in upright position (allow up to 10% from plumb). Connections to outlet pipe are not watertight and show signs of rust. Any holes - other than designed holes - in the structure.	Structure securely attached to wall and outlet pipe. Structure in correct position. Connections to outlet pipe are water tight; structure repaired or replaced and works as designed. Structure has no holes other than designed holes.
Cleanout Gate	Damaged or Missing	Cleanout gate is not watertight or is missing. Gate cannot be moved up and down by one maintenance person. Chain/rod leading to gate is missing or damaged. Gate is rusted over 50% of its surface area.	Gate is watertight and works as designed. Gate moves up and down easily and is watertight. Chain is in place and works as designed. Gate is repaired or replaced to meet design standards.
Orifice Plate	Damaged or Missing	Control device is not working properly due to missing, out of place, or bent orifice plate.	Plate is in place and works as designed.
	Obstructions	Any trash, debris, sediment, or vegetation blocking the plate.	Plate is free of all obstructions and works as designed.
Overflow Pipe	Obstructions	Any trash or debris blocking (or having the potential of blocking) the overflow pipe.	Pipe is free of all obstructions and works as designed.
Manhole	See Table V-A.3: Maintenance Standards - Closed Detention Systems (Tanks/Vaults)	See Table V-A.3: Maintenance Standards - Closed Detention Systems (Tanks/Vaults)	See Table V-A.3: Maintenance Standards - Closed Detention Systems (Tanks/Vaults)
Catch Basin	See Table V-A.5: Maintenance Standards - Catch Basins	See Table V-A.5: Maintenance Standards - Catch Basins	See Table V-A.5: Maintenance Standards - Catch Basins

Table V-A.5: Maintenance Standards - Catch Basins

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
General	Trash & Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%. Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe. Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height. Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No Trash or debris located immediately in front of catch basin or on grate opening. No trash or debris in the catch basin. Inlet and outlet pipes free of trash or debris. No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch. (Intent is to make sure no material is running into basin). Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached	Top slab is free of holes and cracks. Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in Basin Walls/ Bottom	Maintenance person judges that structure is unsound. Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Basin replaced or repaired to design standards. Pipe is regrouted and secure at basin wall.
	Settlement/ Misalignment	If failure of basin has created a safety, function, or design problem.	Basin replaced or repaired to design standards.
	Vegetation	Vegetation growing across and blocking more than 10% of the basin opening. Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation blocking opening to basin. No vegetation or root growth present.
	Contamination and Pollution	See Table V-A.1: Maintenance Standards - Detention Ponds	No pollution present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Cover/grate is in place, meets design standards, and is secured
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance.)	Cover can be removed by one maintenance person.
Ladder	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.
Metal Grates (If Applicable)	Grate opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing.	Grate missing or broken member(s) of the grate.	Grate is in place, meets the design standards, and is installed and aligned with the flow path.

Table V-A.6: Maintenance Standards - Debris Barriers (e.g., Trash Racks)

Maintenance Components	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash and Debris	Trash or debris that is plugging more than 20% of the openings in the barrier.	Barrier cleared to design flow capacity.
Metal	Damaged/ Missing Bars.	Bars are bent out of shape more than 3 inches. Bars are missing or entire barrier missing. Bars are loose and rust is causing 50% deterioration to any part of barrier.	Bars in place with no bends more than 3/4 inch. Bars in place according to design. Barrier replaced or repaired to design standards.
	Inlet/Outlet Pipe	Debris barrier missing or not attached to pipe	Barrier firmly attached to pipe

Table V-A.7: Maintenance Standards - Energy Dissipators

Maintenance Components	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
External:			
Rock Pad	Missing or Moved Rock	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil.	Rock pad replaced to design standards.
	Erosion	Soil erosion in or adjacent to rock pad.	Rock pad replaced to design standards.
Dispersion Trench	Pipe Plugged with Sediment	Accumulated sediment that exceeds 20% of the design depth.	Pipe cleaned/flushed so that it matches design.
	Not Discharging Water Properly	Visual evidence of water discharging at concentrated points along trench (normal condition is a "sheet flow" of water along trench). Intent is to prevent erosion damage.	Trench redesigned or rebuilt to standards.
	Perforations Plugged.	Over 1/2 of perforations in pipe are plugged with debris and sediment.	Perforated pipe cleaned or replaced.
	Water Flows Out Top of "Distributor" Catch Basin.	Maintenance person observes or receives credible report of water flowing out during any storm less than the design storm or its causing or appears likely to cause damage.	Facility rebuilt or redesigned to standards.
	Receiving Area Over-Saturated	Water in receiving area is causing or has potential of causing landslide problems.	No danger of landslides.
Internal:			
Manhole/Chamber	Worn or Damaged Post, Baffles, Side of Chamber	Structure dissipating flow deteriorates to 1/2 of original size or any concentrated worn spot exceeding one square foot which would make structure unsound.	Structure replaced to design standards.
	Other Defects	See Table V-A.5: Maintenance Standards - Catch Basins	See Table V-A.5: Maintenance Standards - Catch Basins

Table V-A.8: Maintenance Standards - Typical Biofiltration Swale

Maintenance Component	Defect or Problem	Condition When Maintenance is Needed	Recommended Maintenance to Correct Problem
General	Sediment Accumulation on Grass	Sediment depth exceeds 2 inches.	Remove sediment deposits on grass treatment area of the bio-swale. When finished, swale should be level from side to side and drain freely toward outlet. There should be no areas of standing water once inflow has ceased.
	Standing Water	When water stands in the swale between storms and does not drain freely.	Any of the following may apply: remove sediment or trash blockages, improve grade from head to foot of swale, remove clogged check dams, add underdrains or convert to a wet biofiltration swale.
	Flow spreader	Flow spreader uneven or clogged so that flows are not uniformly distributed through entire swale width.	Level the spreader and clean so that flows are spread evenly over entire swale width.

Table V-A.10: Maintenance Standards - Filter Strips

Maintenance Component	Defect or Problem	Condition When Maintenance is Needed	Recommended Maintenance to Correct Problem
General	Sediment Accumulation on Grass	Sediment depth exceeds 2 inches.	Remove sediment deposits, re-level so slope is even and flows pass evenly through strip.
	Vegetation	When the grass becomes excessively tall (greater than 10-inches); when nuisance weeds and other vegetation starts to take over.	Mow grass, control nuisance vegetation, such that flow not impeded. Grass should be mowed to a height between 3-4 inches.
	Trash and Debris Accumulation	Trash and debris accumulated on the filter strip.	Remove trash and Debris from filter.
	Erosion/Scouring	Eroded or scoured areas due to flow channelization, or higher flows.	For ruts or bare areas less than 12 inches wide, repair the damaged area by filling with crushed gravel. The grass will creep in over the rock in time. If bare areas are large, generally greater than 12 inches wide, the filter strip should be re-graded and re-seeded. For smaller bare areas, overseed when bare spots are evident.
	Flow spreader	Flow spreader uneven or clogged so that flows are not uniformly distributed through entire filter width.	Level the spreader and clean so that flows are spread evenly over entire filter width.

Table V-A.11: Maintenance Standards - Wetponds

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Water level	First cell is empty, doesn't hold water.	Line the first cell to maintain at least 4 feet of water. Although the second cell may drain, the first cell must remain full to control turbulence of the incoming flow and reduce sediment resuspension.
	Trash and Debris	Accumulation that exceeds 1 CF per 1000-SF of pond area.	Trash and debris removed from pond.
	Inlet/Outlet Pipe	Inlet/Outlet pipe clogged with sediment and/or debris material.	No clogging or blockage in the inlet and outlet piping.
	Sediment Accumulation in Pond Bottom	Sediment accumulations in pond bottom that exceeds the depth of sediment zone plus 6-inches, usually in the first cell.	Sediment removed from pond bottom.
	Oil Sheen on Water	Prevalent and visible oil sheen.	Oil removed from water using oil-absorbent pads or vactor truck. Source of oil located and corrected. If chronic low levels of oil persist, plant wetland plants such as Juncus effusus (soft rush) which can uptake small concentrations of oil.
	Erosion	Erosion of the pond's side slopes and/or scouring of the pond bottom, that exceeds 6-inches, or where continued erosion is prevalent.	Slopes stabilized using proper erosion control measures and repair methods.
	Settlement of Pond Dike/Berm	Any part of these components that has settled 4-inches or lower than the design elevation, or inspector determines dike/berm is unsound.	Dike/berm is repaired to specifications.
	Internal Berm	Berm dividing cells should be level.	Berm surface is leveled so that water flows evenly over entire length of berm.
	Overflow Spillway	Rock is missing and soil is exposed at top of spillway or outside slope.	Rocks replaced to specifications.

Table V-A.12: Maintenance Standards - Wetvaults

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Trash/Debris Accumulation	Trash and debris accumulated in vault, pipe or inlet/outlet (includes floatables	Remove trash and debris from vault.

Table V-A.17: Maintenance Standards - Coalescing Plate Oil/Water Separators

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Monitoring	Inspection of discharge water for obvious signs of poor water quality.	Effluent discharge from vault should be clear with no thick visible sheen.
	Sediment Accumulation	Sediment depth in bottom of vault exceeds 6-inches in depth and/or visible signs of sediment on plates.	No sediment deposits on vault bottom and plate media, which would impede flow through the vault and reduce separation efficiency.
	Trash and Debris Accumulation	Trash and debris accumulated in vault, or pipe inlet/outlet, floatables and non-floatables.	Trash and debris removed from vault, and inlet/outlet piping.
	Oil Accumulation	Oil accumulation that exceeds 1-inch at the water surface.	Oil is extracted from vault using vactoring methods. Coalescing plates are cleaned by thoroughly rinsing and flushing. Should be no visible oil depth on water.
	Damaged Coalescing Plates	Plate media broken, deformed, cracked and/or showing signs of failure.	A portion of the media pack or the entire plate pack is replaced depending on severity of failure.
	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.	Pipe repaired and or replaced.
	Baffles	Baffles corroding, cracking, warping and/or showing signs of failure as determined by maintenance/inspection person.	Baffles repaired or replaced to specifications.
	Vault Structure Damage - Includes Cracks in Walls, Bottom, Damage to Frame and/or Top Slab	Cracks wider than 1/2-inch or evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determine that the vault is not structurally sound. Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks.	Vault replaced or repairs made so that vault meets design specifications and is structurally sound. Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe.
	Access Ladder Damaged	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, and misaligned.	Ladder replaced or repaired and meets specifications, and is safe to use as determined by inspection personnel.

Table V-A.18: Maintenance Standards - Catch Basin Inserts

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Sediment Accumulation	When sediment forms a cap over the insert media of the insert and/or unit.	No sediment cap on the insert media and its unit.
	Trash and Debris Accumulation	Trash and debris accumulates on insert unit creating a blockage/restriction.	Trash and debris removed from insert unit. Runoff freely flows into catch basin.
	Media Insert Not Removing Oil	Effluent water from media insert has a visible sheen.	Effluent water from media insert is free of oils and has no visible sheen.
	Media Insert Water Saturated	Catch basin insert is saturated with water and no longer has the capacity to absorb.	Remove and replace media insert
	Media Insert-Oil Saturated	Media oil saturated due to petroleum spill that drains into catch basin.	Remove and replace media insert.
	Media Insert Use Beyond Product Life	Media has been used beyond the typical average life of media insert product.	Remove and replace media at regular intervals, depending on insert product.

Table V-A.19: Maintenance Standards - Media Filter Drain (MFD)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Sediment accumulation on grass filter strip	Sediment depth exceeds 2 inches or creates uneven grading that interferes with sheet flow.	Remove sediment deposits on grass treatment area of the embankment. When finished, embankment should be level from side to side and drain freely toward the toe of the embankment slope. There should be no areas of standing water once inflow has ceased.
	No-vegetation	Flow spreader is uneven or clogged so that flows are not uniformly distributed over entire embankment width.	Level the spreader and clean to spread flows evenly over entire embankment width.

Appendix 7: Special Reports and Studies

1. Geotechnical Report, Earth Solutions NW, April 2024
2. Critical Areas Report, Wetland Resources, April 2024

Memo

To: Lynn Eshelman, Keystone Land

From: John Laufenberg, Wetland Resources, Inc.

CC: Joe Long, Keystone Land

Date: March 6, 2024

Re: Retaining walls along wetland and stream buffers

City of Marysville does not currently allow structural retaining walls along the edges of wetland or stream buffers based on Marysville Municipal Code (MMC) allowances in building setbacks (MMC 22E.010.380). Although retaining walls have been allowed in the past, current interpretations disallow walls over three feet in height within 15 feet of wetland and stream buffer edges. The current interpretation impacts the yield associated with several current and future Keystone Land projects, so you have asked me to prepare a memo regarding the potential effect from constructing structural retaining walls along the edges of wetland and stream buffers. For simplicity, the term "buffer" hereafter refers to both wetland and stream buffers.

Wall Construction

Wetlands and streams in urban development areas are typically located in depressional topography. The adjacent roads, lots, and tracts are often raised above the depressions to allow the impervious surfaces to drain to stormwater facilities that then outlet to, and maintain the hydrology of, these depressional areas. The result is that a retaining wall along the edge of a buffer is typically a fill wall that supports topographically higher adjacent development.

Fill wall construction typically involves clearing to the edge of the buffer, installing a footing outside of the buffer, and construction of a wall with a batter toward the non-buffer area. This work occurs from the development side of the buffer without impacting the buffer. In the rare case that maintenance would be required on the wall, it could be accomplished from within the 15-foot building setback required by the MMC.

Vegetation Impacts

Depending on the type of vegetation growing along the buffer edge, clearing and grading to the edge of the buffer can have varying impacts. Where vegetation is limited to herbaceous species, impacts within the outer fringe of the buffer are discountable. This situation would typically also require enhancement of the buffer, so any minor disturbance along the buffer edge would be mitigated through enhancement. Where scrub-shrub vegetation is present along the buffer edge, clearing and grading would likely also have a negligible effect as native northwest shrubs are resilient and would likely recover from any potential root removal or damage along the buffer fringe. Trees rooted in the outer portion of the buffer have the most potential for damage related to clearing and grading. Where these activities occur within the dripline of trees, they can result in damage to root zones and/or mortality.

The potential vegetation impacts described above are associated with clearing and grading up to the buffer edge. Although these activities are also required for retaining wall construction, clearing and grading are not subject to the building setback restrictions provided in the MMC. Clearing and grading to the buffer edge is common to most projects in Marysville, and no special restrictions are required to allow this work.

Functions and Values Impacts From Retaining Walls

Wetlands, streams, and buffers provide various environmental functions, most notably water quality, hydrologic, and wildlife habitat functions. Impacts to these functions are typically measured by weighing their effects on the values provided by each feature. Below is a general analysis of how retaining walls along buffer edges could impact functions or values.

Water quality

Wetlands, streams, and buffers often provide water quality functions as runoff drains through them. Buffers typically slow surface flows, filter pollutants, and uptake nutrients from runoff as it moves toward the adjacent wetland or stream. They also provide shade to maintain water temperatures and block wind. Wetlands provide water quality functions by slowing runoff in depressional areas and uptaking excess nutrients within the wetland vegetation. Streams can also provide water quality benefits by slowing flows and trapping sediments within the substrate.

The presence of a retaining wall along the outer edge of the buffer would not result in any changes to water quality functions. The wetland, stream, and buffer would still have the opportunity to provide the same value for water quality function whether a retaining wall, landscaping, a deck, a fence, a driveway, or other use allowed in the building setback was situated along the buffer edge. Moving the retaining wall 15 feet from the buffer edge would not result in increased water quality functions.

Hydrology

Wetlands, streams, and buffers can provide hydrologic benefits to the surrounding environment. Wetlands provide depressional areas where hydrology can be stored during storm events, slowing runoff and preventing erosion and siltation. Streams provide avenues for runoff to be conveyed to larger downstream systems. Buffers provide a moderating effect as surface hydrology increases, slowing runoff as it is routed to depressional systems.

Stormwater plans are typically designed to collect runoff from the development area and route it to an on-site treatment facility. Treated runoff is often routed to a wetland, stream, or buffer to allow it to drain to downstream systems. The City's drainage manual has requirements for maintaining wetland hydrology, which wouldn't change based on the presence of a retaining wall along the buffer edge.

Similar to water quality function, the presence of a retaining wall along the outer edge of the buffer would not result in any changes to hydrology functions. No change in the opportunity to provide hydrology functions would occur whether a retaining wall, a driveway, or other use allowed in the building setback was situated along the buffer edge. Moving the retaining wall 15 feet from the buffer edge would not result in increased hydrology functions.

Wildlife Habitat
Wetlands, streams, and buffers often provide resources that are valuable to wildlife. They typically provide food and water resources, refuge, breeding areas, roosting/perching habitat, movement corridors, and nesting areas.

Most of the wildlife functions described above occur within the wetland, stream, and buffer, so they are not dependent upon what happens outside of the buffer. The presence of a retaining wall along the edge of the buffer would not result in impacts that differ from the placement of a solid-board fence along the buffer edge, which is allowed in a building setback. Birds and small to medium sized mammals would not be hindered by a fence or a retaining wall. Amphibians typically spend their life in and nearby wetlands and streams, so likely wouldn't be affected by a fence or a retaining wall. The movement of large mammals (i.e. deer) from the NPGA to areas outside of the NGPA would be impacted by a tall retaining wall, but this impact would be similar to a fence located along the buffer edge.

The presence of a retaining wall and accompanying fall protection fence would help protect the NGPA from human and domestic animal use, resulting less ongoing disturbance to the wetland/stream/buffer. It could also help reduce human versus wildlife conflicts.

Conclusion
Construction of a retaining wall along the edge of a buffer does not result in a negative impact on the adjacent critical area or buffer based on the following:

- Clearing and grading to the edge of a buffer is allowed by code
- Construction can occur from the non-buffer side, avoiding direct impacts to the buffer
- Maintenance needs are rare and could be done from the non-buffer side, if necessary
- The presence of a retaining wall does not impede the functions provided by wetlands, streams, and buffers. It could result in a benefit by keeping people and pets out of the NGPA.

Sincerely,



John Laufenberg, PWS
Principal Ecologist

CRITICAL AREA STUDY
AND
BUFFER MITIGATION PLAN

FOR

WILLIAMS POINTE
MARYSVILLE, WA

Wetland Resources, Inc. Project #23338

Prepared By
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April 25, 2024

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1.0 INTRODUCTION

Wetland Resources, Inc. (*WRI*) completed a site investigation on December 13, 2023, to verify the boundaries of wetlands located on the 13.8-acre subject property (Parcels# 00590700018101, 00590700018200, 29050200200400, 30053500303600, 30053500303700). The site is located at 7212, 7315, 7417, and 7513 44th Street NE, in the city limits of Marysville, Washington (Section 2, Township 29N, Range 5E, W.M.).



Figure 1 - Aerial view of the subject site.

1.1 SITE DESCRIPTION

The subject property currently consists of several single-family residences, access driveways, and undeveloped forested areas. Access to the site is via 44th Street NE. Vegetation within the forested portions of the site includes a dense over story of western red cedar (*Thuja plicata*), big-leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), with an understory of vine maple (*Acer circinatum*), Himalayan blackberry (*Rubus armeniacus*), salmonberry (*Rubus spectabilis*), beaked hazelnut (*Corylus cornuta*), trailing blackberry (*Rubus ursinus*), sword fern (*Polystichum munitum*), lady fern (*Athyrium filix-femina*), spreading wood-fern (*Dryopteris expansa*), and skunk cabbage (*Lysichiton americanus*).

Two wetlands (Wetlands A and B) are located on the subject property, north of 44th Street NE, and two wetlands (Wetlands C and D) are located off-site, south of 44th Street NE. Pursuant to

Marysville Municipal Code (MMC 22E.010.060(1)), these wetlands were rated using the *Washington State Department of Ecology Wetland Rating System for Western Washington* 2014 Update, Version 2.0 (Hruby & Yahnke 2023). Wetlands A and C are classified as Category II wetlands and Wetlands B and D are classified as Category III wetlands. Per MMC 22E.010.100(4), Category II wetlands receive 100-foot buffers and Category III wetlands receive 75-foot buffers.

1.2 PROJECT DESCRIPTION

The applicant is proposing a residential subdivision. The development will include residential lots, access roads, utilities, stormwater facilities, and landscaping. The proposed development also includes a new sewer line connecting the proposed development to an existing sewer system to the south. In order to accommodate the project, the applicant is proposing buffer width averaging for small portions of the lots and the sewer line connection. An existing mobile home, gravel driveway, and maintained yard within the buffer of Wetlands A and B will be removed and restored with native plantings.

No direct impacts to wetlands are proposed. Full descriptions of buffer impacts, mitigation, and restoration are provided in *Section 5* of this report.

2.0 REVIEW OF EXISTING INFORMATION

Prior to conducting the site investigation, public resources were reviewed to gather background information on the subject property and the surrounding area in regard to critical areas. The following sources were examined:

- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory: The National Wetlands Inventory (NWI) depicts a large palustrine forested/shrub wetland along the western portion of the subject property that extends off site to the northwest. A small palustrine forested/shrub wetland is shown off site to the southeast of the site.
- USDA/Natural Resources Conservation Service (NRCS) Web Soil Survey: The Web Soil Survey maps the site as Tokul gravelly medial loam, 0 to 8 and 8 to 15 percent slopes.
- WDFW Priority Habitat and Species (PHS) Interactive Map: The PHS mapping tool does not depict any priority habitats or species on site. The closest mapped feature is a freshwater wetland mapped approximately 400 feet off-site to the southeast.
- WDNR Forest Practices Application Mapping Tool (FPAMT): FPAMT does not depict any features on the subject property. A Type N stream is mapped off site, approximately 300 feet northwest of the site. Another Type N stream is mapped off site approximately 490 feet southeast of the site.
- Snohomish County PDS Map Portal: PDS does not depict any features on-site. The map depicts the same off-site streams as the FPAMT map. The off-site stream to the northwest is mapped as a non-fish habitat seasonal stream for the segment closest to the site. The stream transitions to fish habitat at approximately 320 feet from the site. The off-site stream to the southeast is mapped a as non-fish habitat seasonal stream. The portion of this stream closest

to the site is associated with a mapped freshwater scrub-shrub and emergent wetland. No other features are mapped in the vicinity of the site.

- WDFW SalmonScape: SalmonScape does not depict any features on the subject property. The map depicts the same off-site streams as FPAMT and PDS Map Portal. The stream to the northwest is mapped as perennial and no fish presence is mapped in the stream. The stream to the southeast is mapped as intermittent and gradient accessible to Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*Oncorhynchus kisutch*), Chum Salmon (*Oncorhynchus keta*), Steelhead Trout (*Oncorhynchus mykiss*), and Pink Salmon (*Oncorhynchus gorbuscha*).
- City of Marysville Critical Areas Map: The City of Marysville Critical Areas Map shows a Category III wetland in the western portion of the subject property. The map shows the same off-site streams as the FPAMT, PDS, and SalmonScape maps. These streams are shown as Type F. Three small Category III wetlands and two small Category II wetlands are mapped south of the subject property.

3.0 METHODOLOGY

3.1 WETLAND DETERMINATION AND DELINEATION

Wetland conditions were identified using routine methodology described in the *Corps of Engineers Wetlands Delineation Manual* (*Final Report*; January 1987), except where superseded by the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (*Version 2.0*, referred to as 2010 Regional Supplement). Our findings are consistent with these manuals. The following criteria descriptions were used in the wetland boundary determination:

1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
2.) Examination of the site for hydric soils;
3.) Determining the presence of wetland hydrology

Hydrophytic Vegetation Criteria
The manuals define hydrophytic vegetation as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. One of the most common indicators for hydrophytic vegetation is when more than 50 percent of a plant community consists of species rated "Facultative" and wetter on lists of plant species that occur in wetlands.

Soils Criteria and Mapped Description
The manuals define hydric soils as those that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Field indicators are used for determining whether a given soil meets the definition for hydric soils.

The NRCS Web Soil Survey maps soils in the vicinity of the subject property as Tokul gravelly medial loam, 0 to 8 and 8 to 15 percent slopes.

Tokul gravelly medial loam is described as moderately deep, moderately well drained soil on till plains. This soil formed in glacial till and volcanic ash. Typically, the surface is covered with a mat of leaves, twigs, and decomposed litter about two inches thick. The surface layer is dark brown gravelly loam about 4 inches thick. The subsoil is brown, strong brown, and dark yellowish brown gravelly loam about 18 inches thick. A hardpan is at a depth of about 31 inches. Permeability of this soil is moderate above the hardpan and very slow through it. Available water capacity is moderate. Included in this unit are areas of soils that have slopes of more than 8 percent, McKenna and Norma soils in depressional areas along drainageways on till plains, Terric Medisaprists in depressional areas on till plains, Winston and Pastik soils on terraces and outwash plains, and Ragnar soils on outwash plains. Included areas make up about 25 percent of the total acreage. McKenna and Norma soils are listed as hydric on the Hydric Soils List for Washington State.

Hydrology Criteria
Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively.

Additionally, areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days ≥12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas inundated or saturated between 5 and 12.5 percent of the growing season in most years may or may not be wetlands. Areas saturated to the surface for less than 5 percent of the growing season are non-wetlands. Field indicators are used for determining whether wetland hydrology parameters are met.

3.2 WETLAND CLASSIFICATIONS

Pursuant to MMC 22E.010.060(1), Wetland A was rated using the *Washington State Department of Ecology Wetland Rating System for Western Washington* 2014 Update, Version 2.0 (Hruby 2023). The wetland was classified using the U.S. Fish and Wildlife Service document (USFWS) *Classifications of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979), also known as the Cowardin Classification System and the U.S. Army Corps of Engineers manual *A Hydrogeomorphic Classification for Wetlands* (Brinson 1993), or HGM system. Required buffers are determined pursuant to MMC 22E.010.100(4).

3.3 WETLAND FINDINGS

3.3.1 Wetland A

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Seasonally Flooded/Saturated
Rating Category/Habitat Score: Category II/6 points
City of Marysville Standard Buffer Width: 100 feet

Wetland A is a large, depressional wetland located along the western portion of the site, extending off-site to the north and west. Vegetation within the on-site portion of Wetland A includes red alder (*Alnus rubra*; FAC), salmonberry (*Rubus spectabilis*; FAC), beaked hazelnut (*Corylus cornuta*; FACU), red-osier dogwood (*Cornus sericea*; FACW), skunk cabbage (*Lysichiton americanus*; OBL), piggyback plant (*Tolmeia menziesii*; FAC), lady fern (*Athyrium filix-femina*; FAC) and spreading wood-fern (*Dryopteris expansa*; FACW). Soils in the on-site portion of the wetland are generally black (10YR 2/1) silty loam from 0 to 16 inches. It is assumed these soils meet hydric soil indicator A12, Thick Dark Surface, given the site geomorphology and the strong hydrophytic vegetative community. A high water table (A2) was present at a depth of three inches and soils were saturated to the surface (A3) during the December site investigation.

3.3.2 Wetland B

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Saturated
Rating Category/Habitat Score: Category III/5 points
City of Marysville Standard Buffer Width: 75 feet

Wetland B is a small, depressional wetland located to the east of Wetland A. Vegetation within the wetland includes red alder (*Alnus rubra*; FAC), western red cedar (*Thuja plicata*; FAC), salmonberry (*Rubus spectabilis*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), vine maple (*Acer circinatum*; FAC), Japanese knotweed (*Fallopia japonica;* FACU), reed canary grass (*Phalaris arundinacea*; FACW), lady fern (*Athyrium filix-femina*; FAC), and sword fern (*Polystichum munitum*; FACU). Soils within the wetland are generally dark gray (10YR 4/1) sandy loam from 0 to 6 inches. From 6 to 14 inches below the soil surface, soils are grayish brown (10YR 5/2) silty clay loam with dark yellowish brown (10YR 3/6) redoximorphic features. A high water table (A2) was present at a depth of three inches and soils were saturated to the surface (A3) during the December site investigation.

3.3.3 Wetland C (Off-site)

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Seasonally Flooded/Saturated
DOE Rating Category: Category II
City of Marysville Standard Buffer Width: 100 feet

Wetland C is a large, depressional wetland located off-site, south of 44th Street NE. It received an overall score of 21 points on the DOE Rating System. Wetlands with overall scores between 20

and 22 are classified as Category II wetlands. In the city of Marysville, Category II wetlands receive buffers of 100 feet.

3.3.4 Wetland D (Off-site)

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Saturated
DOE Rating Category: Category III
City of Marysville Standard Buffer Width: 75 feet

Wetland D is a depressional wetland located off-site, south of Parcel # 29050200200400. It received an overall score of 18 points on the DOE Rating System. Wetlands with overall scores between 16 and 19 are classified as Category III wetlands. In the city of Marysville, Category III wetlands receive buffers of 75 feet.

3.4 NON-WETLAND AREAS

Vegetation within the non-wetland areas of the site includes western red cedar (*Thuja plicata*, FAC), big-leaf maple (*Acer macrophyllum*; FACU), red alder (*Alnus rubra*; FAC), vine maple (*Acer circinatum*; FAC), salmonberry (*Rubus spectabilis*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), trailing black berry (*Rubus ursinus*; FACU), and sword fern (*Polystichum munitum*; FACU). Non-wetland soils on the site are generally dark brown (10YR 3/3) and a loam texture throughout the soil profile, sometimes with yellowish red (5YR 4/6) redoximorphic features in the sublayer. The soils in areas not mapped as wetlands were dry throughout the profile at the time of the site investigation.

4.0 WILDLIFE

The on-site wetlands and buffers provide features that are beneficial to wildlife including resources such as food, water, thermal cover, and hiding cover in close proximity. Given the habitat available, the following mammalian species may use the area: Columbian black-tailed deer (*Odocoileus hemionus columbianus)*, American black bear (*Ursus americanus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), deer mice (*Peromyscus maniculatus*), moles (*Scapanus spp*.), shrews (*Sorex spp.),* Douglas squirrel (*Tamiasciurus douglasii*), and bats (*Myotis spp.*). The following avian species are expected to use the area: American Crow (*Corvus brachyrhynchos),* Stellar's Jay (*Cyanocitta stelleri*), Black-capped Chickadee (*Poecile atricapillus)*, Dark-eyed Junco (*Junco hyemalis*), Spotted Towhee (*Pipilo maculatus),* Bushtit (*Psaltriparus minimus*), Northern Flicker (*Colaptes auratus*), Hairy Woodpecker (*Picoides villosus*), Downy Woodpecker (*Dendrocopus villosus*), Red-breasted Nuthatch (*Sitka canadensis*), Brown Creeper (*Certhia americana*), Varied Thrush (*Ixoreus naevius*), and Red-tailed Hawk (*Buteo jamaicensis*). Other wildlife expected to use this site include pacific tree frog (*Hyla regilla*), northwestern salamander (*Ambystoma gracile*), and rough-skinned newt (*Taricha granulosa*).

These lists are not meant to be all-inclusive of the species using the site but is representative of common wildlife in the Marysville area. No threatened or endangered species are known to be associated with this site.

5.0 PROPOSED BUFFER MODIFICATIONS

To accommodate the proposed development, buffer averaging is proposed within the outer portion of the buffers associated with Wetlands A, B, and C, as allowed by MMC 22E.010.100(5). The existing mobile home, driveway and maintained yard will be removed on Parcel #30053500303600 and will be restored with native vegetation to bring the buffer condition into compliance with the standards of MMC 22E.010.100(1). A stormwater dispersion trench is proposed within an area of Wetland A buffer and is allowed per MMC 22E.010.100(10).

5.1 BUFFER WIDTH AVERAGING

In order to accommodate a portion of the proposed development and the sewer line connection, the applicant is proposing to modify the buffer through buffer width averaging. This is allowed per MMC 22E.010.100(5)(a) and (5)(c). The criteria in this code section are cited below in italics with responses below in standard text.

(5)(a) Buffer width averaging shall be allowed only where the applicant demonstrates to the community development department that the averaging will not impair or reduce the habitat, water quality purification and enhancement, storm water detention, ground water recharge, shoreline protection and erosion protection and other functions of the wetland and buffer.

All areas that are proposed for buffer reduction and buffer addition are composed of native forest. The total buffer area on-site will increase by 2,944 square feet over standard requirements. The areas proposed for buffer reduction associated with the off-site sewer line are limited to the narrow sewer easement. Since the majority of Wetland C's buffer is located off-site and outside the sewer easement, buffer addition along Wetland C cannot be proposed. Instead, buffer addition is proposed on-site, contiguous with the Wetland A buffer. Overall, the proposed buffer averaging plan will improve the functions and values provided by the on-site buffer areas.

… that lower-intensity land uses would be located adjacent to areas where buffer width is reduced…

A stormwater detention vault, one residential lot, and sewer line connection will be located adjacent to the proposed buffer reductions. Once constructed, these will be the lowest-intensity land uses associated with the proposed development so that impacts to the buffer of Wetland B and Wetland C are minimized.

…and that the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging;

A total of 2,050 square feet of buffer reduction and 4,994 square feet of buffer addition are proposed. Therefore, the total area contained within the buffer after averaging will be 2,944 square feet larger than the standard required buffer.

(5)(c) Notwithstanding the reductions permitted in subsections (5)(a) and (b) of this section, buffer widths shall not be reduced by more than 25 percent of the required buffer.

The maximum buffer width reduction proposed is 10 percent, which is less than the 25 percent allowance.

5.2 Buffer Enhancement Plan

Pursuant to MMC 22E.010.100(1), wetland buffers shall consist of an undisturbed area of native vegetation. A portion of the buffer on Wetlands A and B consists of a mobile home, gravel driveway, and maintained yard. The applicant proposes to remove the mobile home and driveway and enhance this portion of buffer.

After removal, the areas previously covered with impervious surfaces will be tilled to de-compact the soil. After de-compaction, organic matter (compost or approved equal) and topsoil will be incorporated into the entire de-compacted area as necessary, not including areas inside the driplines of existing trees. Enhancement will also include removal of all invasive species. Once site preparation is completed, the following plants will be installed. All plants shall be marked with flagging and mulched, as specified in the planting notes.

Buffer Enhancement Area (17,830 square feet)

Common Name	Latin Name	Size	Spacing	Quantity
Douglas fir	*Pseudotsuga menziesii*	1 gallon	10’	60
Big-leaf maple	*Acer macrophyllum*	1 gallon	10’	59
Grand fir	*Abies grandis*	1 gallon	10’	59
Beaked hazelnut	*Corylus cornuta*	1 gallon	5’	90
Nootka rose	*Rosa nutkana*	1 gallon	5’	89
Snowberry	*Symphoricarpos albus*	1 gallon	5’	89
Salmonberry	*Rubus spectabilis*	1 gallon	5’	89
Thimbleberry	*Rubus parviflorus*	1 gallon	5’	89
Sword fern	*Polystichum munitum*	1 gallon	5’	89

6.0 Project Monitoring Program

6.1 Inspection and Reporting Requirements

1. Initial compliance/as-built report at completion of construction
2. Inspection and brief status report 30 days after planting
3. Inspection and brief status report early in the first growing season
4. Inspection and brief status report and the end of the first growing season
5. Inspection and brief status report early in the second growing season
6. Inspection and brief status report and the end of the second growing season
7. Annual site inspection (once per year in the fall) in years 3-5
8. Annual reports (one report submitted in the fall of each monitored year) for years 3-5

Purpose for Monitoring

The purpose for monitoring this mitigation project shall be to evaluate its success. Success will be determined if monitoring shows at the end of monitoring period that the definitions of success

stated below are met. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscape and/or wetland specialist and City of Marysville staff until the project is evaluated as successful.

Monitoring
Monitoring shall be conducted in accordance with the approved Mitigation Plan. The monitoring period will begin once the City receives written notification confirming the mitigation plan has been implemented and City staff inspects the site and issues approval of the installation.

Vegetation Monitoring
Sampling points or transects will be established for vegetation monitoring and photo points will be established from which photos will be taken throughout the monitoring period. Permanent sampling points must be identified on the mitigation site plans in the first monitoring report (they may be drawn on approved plans by hand). Each sampling point shall detail herbaceous, shrub, and tree coverage. Monitoring of vegetation sampling points shall occur annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

Photo points
No less than two permanent photo points will be established within the buffer enhancement area. Photographs will be taken from these points to visually record condition of the enhancement area. Photos shall be taken annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified. Photo points must be identified on the mitigation site plans in the first monitoring map (they may be drawn on approved plans by hand).

Monitoring Report Contents
Monitoring reports shall be submitted by October 31 of each year during the monitoring period. As applicable, monitoring reports must include descriptions / data for:

1. Site plan and vicinity map
2. Historic description of project, including date of installation, current year of monitoring, restatement of mitigation / restoration goals, and performance standards
3. Plant survival, vigor, and areal coverage for every plant community (transect or sampling point data), and explanation of monitoring methodology in the context of assessing performance standards
4. Wetland and buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures
5. Observed wildlife, including amphibians, avians, and others
6. Assessment of nuisance / exotic biota and recommendations for management
7. Descriptions of any structural repair or replacement (i.e. fencing, signs, etc.)
8. Color photographs taken from permanent photo-points that shall be depicted on the monitoring report map

6.2 PROJECT SUCCESS & COMPLIANCE

Criteria for Success
Upon completion of the proposed mitigation project, an inspection by a qualified wetland professional shall be made to determine plan compliance. An as-built report will be supplied to the City of Marysville after the completion of planting to show compliance with the mitigation plan. The qualified wetland professional will perform condition monitoring of the plantings and provide reports according to the schedule described in Section 6.1.

Goal
To provide greater protection for the on-site wetlands.

Definition of Success
The mitigation project goal will be deemed successful when objectives are met, as evidenced through the observation of set performance standards.

Objectives

Objective 1: To establish a diverse, native plant community in the buffer restoration area that will persist and create an appropriate vegetative matrix.

Objective 2: To have significant native vegetative cover throughout the enhanced area.

Performance Standards

The objectives will be considered successfully met when, and if, the following performance standards are observed in the enhancement area:

	Year 1	Year 2	Year 3	Year 4	Year 5
Survivorship*	90%	80%	70%		
Native species cover**			30%	40%	50%
Invasive species cover	<10%	<10%	<10%	<10%	<10%

*Only applies to installed native plantings.
**Native volunteer species may be included to meet native cover requirements.
If Year 5 performance standards are met in an earlier year, the city may consider the project to be successful and terminate the monitoring period at that time.

6.3 MAINTENANCE

The mitigation areas will require periodic maintenance to remove undesirable species and replace vegetation mortality. Maintenance shall occur in accordance with the approved plans. Maintenance may include but will not be limited to removal of competing grasses (by hand if necessary), irrigation, fertilization (if necessary), replacement of plant mortality, and the replacement of mulch for each maintenance period. Chemical control, only if approved by City staff, shall be applied by a licensed applicator following all label instructions.

Duration and Extent
In order to achieve performance standards, the permittee shall be responsible for maintaining the mitigation area for the duration of the five-year monitoring period. Maintenance will include watering, weeding around the base of installed plants, pruning, replacement, re-staking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005) as well as Himalayan blackberry, cutting down competing grasses, and any other measures needed to ensure plant survival.

Survival
The permittee shall be responsible for the health of 100% of all newly installed plants for one growing season after installation has been accepted by the City of Marysville. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 15 of the following year). For fall installation (often required), the growing season will begin the following spring. The permittee shall replace any plants that are failing, weak, defective in manner of growth, or dead during this growing season.

Installation Timing for Replacement Plants
Replacement plants shall be installed between November 1 and March 15, unless otherwise determined.

Standards for Replacement Plants
Replacement plants shall meet the same standards for size and type as those specified for the original installation, unless otherwise directed by a qualified professional.

Replanting
Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted.

Herbicides / Pesticides
Unless deemed absolutely necessary by the consulting biologist and/or the City, chemical controls shall not be used in the mitigation area, critical areas, or their buffers. Any chemical controls used shall be applied by a licensed applicator following all label instructions.

Irrigation / Watering
Water should be provided during the dry season (July 1 through October 15) for the first two years after installation to ensure plant survival and establishment. A temporary above ground irrigation system and/or water truck should provide water. Water should be applied at a rate of 1" of water twice per week for year one and 1" per week during year two.

General
The permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences, or other structural components of this mitigation site.

6.4 CONTINGENCY PLAN

If 20 percent of the plants are severely stressed during any of the inspections, or it appears 20 percent may not survive, additional plantings of the same species may be added to the planting area. Elements of a contingency plan may include but will not be limited to more aggressive weed and invasive species control, pest control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

6.5 PROJECT NOTES

Pre-Construction Meeting
Mitigation projects are typically more complex to install than can be described in plans. Careful monitoring by a wetland professional for all portions of this project is strongly recommended. Construction timing and sequencing is important to the success of this type of project. There will be a pre-construction meeting on this site between the Permittee, consulting wetland professional, and laborers. The objective will be to verify the location of erosion control facilities, verify the location of mitigation areas, and to discuss project sequencing.

Inspections
A wetland professional shall be contracted to periodically inspect the mitigation installation described in this plan. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or hidden site conditions. A City of Marysville representative and/or the consulting professional will make these decisions during construction.

6.6 PLANTING NOTES

Plant in the early spring or late fall and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some limited species substitution may be allowed, only with the agreement of the landscape designer, wetland biologist, and/or City staff.

Pre-Planting Meeting
Prior to control of invasive species or installation of mitigation plantings, a site meeting between the contracted landscaper and the consulting wetland professional shall occur to resolve any questions that may arise. During this meeting a discussion regarding plant spacing and locations of plant species including wetland verses buffer species shall occur between the landscape contractor and the consulting wetland professional.

Handling
Plants shall be handled so as to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall

not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements and shall not be used unless planted between November 1 and March 1, and only with the permission of the landscape designer, wetland professional, and City staff. Bare root plants must have enough fibrous root to ensure plant survival. Roots must be covered at all times with mud and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

Storage
Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to those species' horticultural requirements. Plants must be re-inspected by the wetland biologist and/or landscape designer prior to installation.

Damaged plants
Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Plant Names
Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the landscape designer, wetland professional, or City staff. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition
Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected. Plants with pruning wounds over 1" in diameter will be rejected.

Roots
All plants shall be balled and burlapped or containerized, unless explicitly authorized by the landscape designer and/or wetland professional. Rootbound plants or B&B plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and / or twisted roots) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened, and the sides of the root ball must be roughened from top to bottom to a depth of approximately half an inch in two to four places. Bare root plantings of woody material are allowed only with permission from the landscape designer, wetland professional and/or City staff.

Sizes
Plant sizes shall be the size indicated in the plant schedule in approved plans. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Measurements, caliper, branching, and balling

and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form
Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well-branched.

Timing of Planting
Unless otherwise determined by the consulting biologist and City staff, initial planting shall occur between October 15 and March 15. Overall, the earlier plants go into the ground during the dormant period, the more time they have to adapt to the site and extend their root systems before the water demands of spring and summer.

Weeding
Existing and exotic vegetation in the mitigation areas will be hand-weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is recommended.

Site conditions
The contractor shall immediately notify the landscape designer and/or wetland professional of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Planting Pits
Planting pits shall be circular or square with vertical sides and shall be 6" deeper and 12" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting down soils.

Fertilizer
Slow-release fertilizer may be used if pre-approved by the City of Marysville. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not make contact with stems of the plants). No soil amendment or fertilizers will be placed in planting holes.

Staking
Most shrubs and many trees DO NOT require any staking. If the plant can stand alone without staking in a moderate wind, do not use a stake. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. If the tree is unable to sway, it will further lose the ability to support itself. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, remove the stakes. All stakes must be removed within two (2) years of installation.

Plant Location
Colored surveyors' flagging or other appropriate marking shall be attached to the installed plants to assist in locating the plants while removing the competing non-native vegetation and during the monitoring period.

Arrangement and Spacing
The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the landscape designer, wetland biologist, and/or City staff.

Inspection(s)
A wetland biologist shall be present on site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction.

Mulch
All landscaped areas denuded of vegetation and soil surface surrounding all planting pit areas shall receive no less than 2 to 4 inches of organic compost or certified weed free straw after planting. A layer of woodchips will be placed around the base of each plant in a 2-foot radius and at a depth of 2 to 4 inches. Mulch and woodchips shall not be allowed to contact plant stems in order to avoid plant decay and rot.

7.0 FUNCTIONS AND VALUES ASSESSMENT

The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretation. This assessment pertains specifically to the wetlands and buffer on site but is characteristic of similar wetland systems found throughout western Washington.

7.1 BUFFER FUNCTIONS AND VALUES ASSESSMENT – EXISTING CONDITIONS

The on-site wetland buffer consists of native forested areas and maintained yard surrounding the existing mobile home. The area of native forest provides high quality wildlife habitat for a variety of species. This habitat area provides significant resources for wildlife including perching and nesting habitat for birds, foraging resources, year-round water, thermal and hiding cover, and large woody debris. The areas of buffer that are regularly maintained and consisting of invasive or non-native plants, do not provide effective cover for wildlife for safety, breeding, or escape. The lack of vegetative diversity and native species in this area also limits the food sources available. This area of buffer provides a low level of buffer functions.

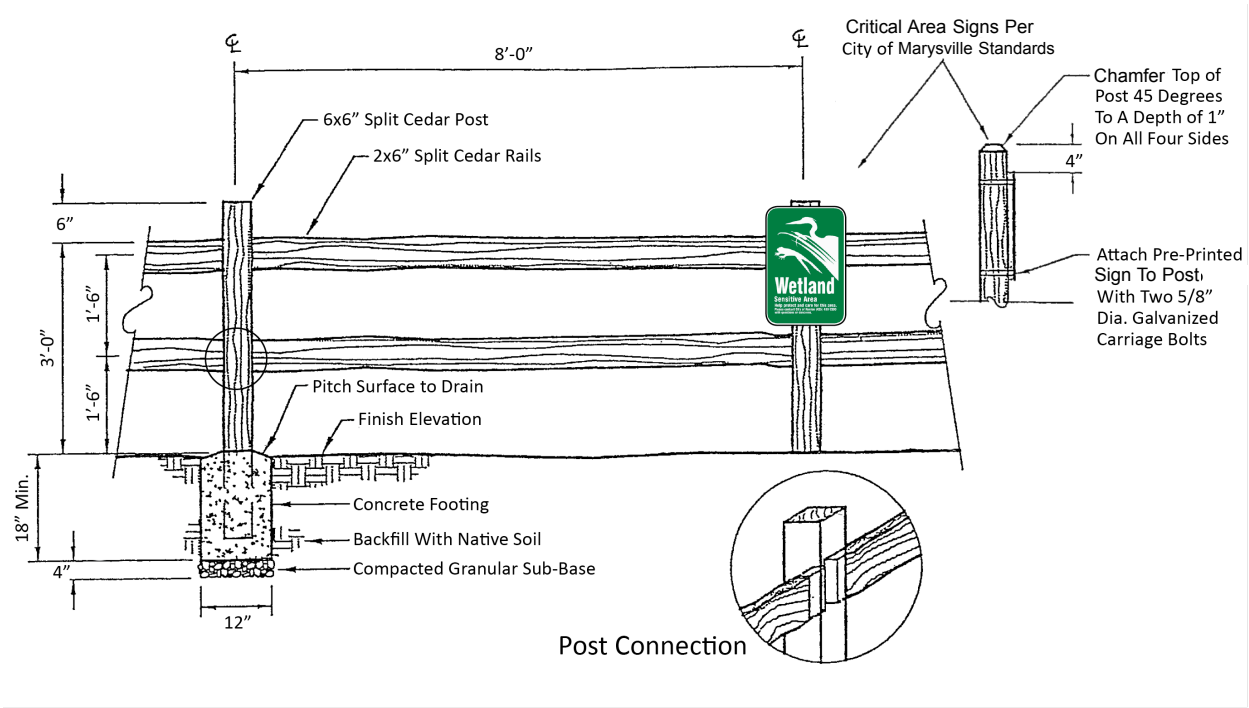
7.2 POST CONSTRUCTION BUFFER FUNCTIONS AND VALUES

After the proposed buffer averaging and buffer restoration, the on-site buffer will provide increased functions and values by replacing invasive species and maintained areas with a diverse community of native plants. The amount of on-site buffer will also increase and will be fenced and protected

in perpetuity. Overall, the proposed project will provide increased protections to the on-site wetland.

8.0 Fencing and Signage

Pursuant to MMC 22E.010.370, split rail fencing and signs designating the presence of a critical area will be constructed along the perimeter of the buffer. Signs will be placed every 100-feet along the fence. A detail is provided below.



SPLIT-RAIL FENCE WITH CRITICAL AREA SIGNS

9.0 Performance and Maintenance Bonding

Performance and/or maintenance bonds, or other assurance device, shall be provided to the City of Marysville, in an amount to be determined by the City. The following is an estimate of the costs to install the mitigation measures. This does not represent a bid to install.

One-gallon plants	734 @ $20/plant, installed	$14,260.00
3' stake	115 @ $2/stake, installed	$230.00
Split rail fencing and signage	$10/foot, $30/sign	$7,410.00
Monitoring	$2,500/year	$12,500.00
Maintenance	$45/hour	$3,600.00
Mulch	$3.25/SY	$4,995.00
Total Estimated Cost		$42,995.00

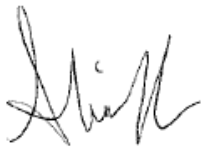
10.0 USE OF THIS REPORT

This Critical Area Study and Buffer Mitigation Plan is supplied to Keystone Land, LLC, as a means of determining on-site wetland conditions and mitigating for critical area buffer impacts. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.



Alia Richardson, PWS
Senior Ecologist & Senior Wildlife Biologist

11.0 REFERENCES

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APPENDIX A

WETLAND DETERMINATION DATA FORMS

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

Project/Site: 23338 - Wiliams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Land LLC State: WA Sampling Point: S1

Investigator(s): JL Section, Township, Range: S35, T30N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): 5-10%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

IN WLA

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	50	Y	FAC
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Rubus spectabilis	30	Y	FAC
2. Corylus cornuta	30	Y	FACU
3. Cornus sericea	15	Y	FACW
4.			
5.			
	75	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Tolmeia menziesii	40	Y	FAC
2. Dryopteris expansa	30	Y	FACW
3. Lysichiton americanus	20	Y	OBL
4. Athyrium filix-femina	10	N	FAC
5. Equisetum telmateia	TR	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = 0
FACW species ____	x 2 = 0
FAC species ____	x 3 = 0
FACU species ____	x 4 = 0
UPL species ____	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					Silt Loam	

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

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

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

Indicators for Problematic Hydric 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 ☐

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 ☑ Depth (inches): _____

Water Table Present? Yes ☑ No ☐ Depth (inches): 3"

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): surface

Wetland Hydrology Present? Yes ☑ No ☐

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: 23338 - Williams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Land LLC State: WA Sampling Point: S2

Investigator(s): JL Section, Township, Range: S2, T29N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): <5%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

Out of WLA

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	50	Y	FAC
2. Acer macrophyllum	15	N	FACU
3. Thuja plicata	7	N	FAC
4.			
	72	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Rubus spectabilis	35	Y	FAC
2. Rubus armeniacus	15	Y	FAC
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Rubus ursinus	10	Y	FACU
2. Polystichum munitum	5	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = 0
FACW species _____	x 2 = 0
FAC species _____	x 3 = 0
FACU species _____	x 4 = 0
UPL species _____	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					Loam	Dry
5-14	10YR 3/3	98	5YR 4/6	2	C	M	Loam	

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

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

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

Indicators for Problematic Hydric 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 ☑

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 ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

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: 23338 - Williams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Landing LLC State: WA Sampling Point: S3

Investigator(s): JL Section, Township, Range: S2, T29N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): <5%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

In WLB

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	35	Y	FAC
2. Thuja plicata	20	Y	FAC
3.			
4.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Rubus spectabilis	35	Y	FAC
2. Rubus armeniacus	10	N	FAC
3. Polygonum cuspidatum	5	N	FACU
4. Acer circinatum	5	N	FAC
5.			
	55	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Phalaris arundinacea	50	Y	FACW
2. Athyrium filix-femina	10	N	FAC
3. Polystichum munitum	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 35

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (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 = 0
FACW species _____	x 2 = 0
FAC species _____	x 3 = 0
FACU species _____	x 4 = 0
UPL species _____	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	100	10YR 4/1				Silt Loam	Moist
6-14	10YR 5/2	90	10YR 3/6	10	C	M	Silt Clay Loam	Moist

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

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

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

Indicators for Problematic Hydric 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 ☐

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 ☑ Depth (inches): _____

Water Table Present? Yes ☑ No ☐ Depth (inches): 3"

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): surface

Wetland Hydrology Present? Yes ☑ No ☐

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: 23338 - Williams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Landing LLC State: WA Sampling Point: S4

Investigator(s): JL Section, Township, Range: S2, T29N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): <5%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐ Hydric Soil Present? Yes ☐ No ☑ Wetland Hydrology Present? Yes ☐ No ☑	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑

Remarks:

OUT of WLB

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	60	Y	FAC
2. Alnus rubra	20	Y	FAC
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Acer circinatum	10	Y	FAC
2. Rubus spectabilis	5	Y	FAC
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Rubus ursinus	60	Y	FACU
2. Polystichum munitum	40	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
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: 6 (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 = 0
FACW species _____	x 2 = 0
FAC species _____	x 3 = 0
FACU species _____	x 4 = 0
UPL species _____	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/3	100					Loam	Dry

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

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

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

Indicators for Problematic Hydric 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 ☑

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 ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

APPENDIX B

WETLAND RATING FORMS AND FIGURES

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ✔ Y ____N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY __II__ (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27
__✔__**Category II** – Total score = 20 - 22
_____**Category III** – Total score = 16 - 19
_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Landscape Potential	[H]	M	L	[H]	M	L	H	M	[L]	
Value	[H]	M	L	[H]	M	L	[H]	M	L	**TOTAL**
Score Based on Ratings	**8**			**8**			**6**			**22**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I II**
Interdunal	**I II III IV**
None of the above	[ ]

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number A

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number A

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

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

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	**1**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	**1**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	**0**
Total for D 2 Add the points in the boxes above	**3**

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

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

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

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- ☐ Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- ☐ Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- ☑ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

0

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- ☑ The wetland is a "headwater" wetland points = 3
- ☐ Wetland is flat but has small depressions on the surface that trap water points = 1
- ☐ Marks of ponding less than 0.5 ft (6 in) points = 0

3

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- ☑ The area of the basin is less than 10 times the area of the unit points = 5
- ☐ The area of the basin is 10 to 100 times the area of the unit points = 3
- ☐ The area of the basin is more than 100 times the area of the unit points = 0
- ☐ Entire wetland is in the Flats class points = 5

5

Total for D 4 — Add the points in the boxes above — **8**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 — **1**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 — **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 — **1**

Total for D 5 — Add the points in the boxes above — **3**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- ☑ • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- ☐ • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- ☐ • Flooding from groundwater is an issue in the sub-basin. points = 1
- ☐ • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- ☐ • There are no problems with flooding downstream of the wetland. points = 0

2

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 — **0**

Total for D 6 — Add the points in the boxes above — **2**

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

Wetland name or number A_____

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____Aquatic bed	4 structures or more: points = 4
____Emergent	3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover)	[2 structures: points = 1]
✔ Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

✔ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated	4 or more types present: points = 3
✔ Seasonally flooded or inundated	3 types present: points = 2
____Occasionally flooded or inundated	[2 types present: points = 1]
✔ Saturated only	1 type present: points = 0
____Permanently flowing stream or river in, or adjacent to, the wetland	
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland	
____**Lake Fringe wetland**	**2 points**
____**Freshwater tidal wetland**	**2 points**

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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

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

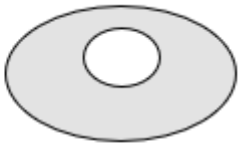
2

H 1.4. Interspersion of habitats

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



[**None** = 0 points]

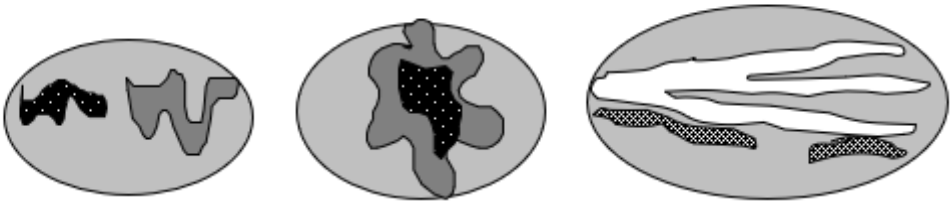


Low = 1 point



Moderate = 2 points

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



0

Wetland name or number A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✔ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✔ Standing snags (dbh > 4 in.) within the wetland ✔ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ___ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ✔ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**4**
Total for H 1 Add the points in the boxes above	**8**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 5 **+** [(% moderate and low intensity land uses)/2] 2 **=** 7 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ✔ < 10% of 1 km Polygon points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 26 **+** [(% moderate and low intensity land uses)/2] 12 **=** 37 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ✔ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ✔ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity points = 0	**-2**
Total for H 2 Add the points in the boxes above	**-1**

Rating of Landscape Potential If score is**: ___4-6 = H ___1-3 = M** ✔ **< 1 = L** *Record the rating on the first page*

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

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

Wetland name or number A

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☑ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☑ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number A

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☑ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

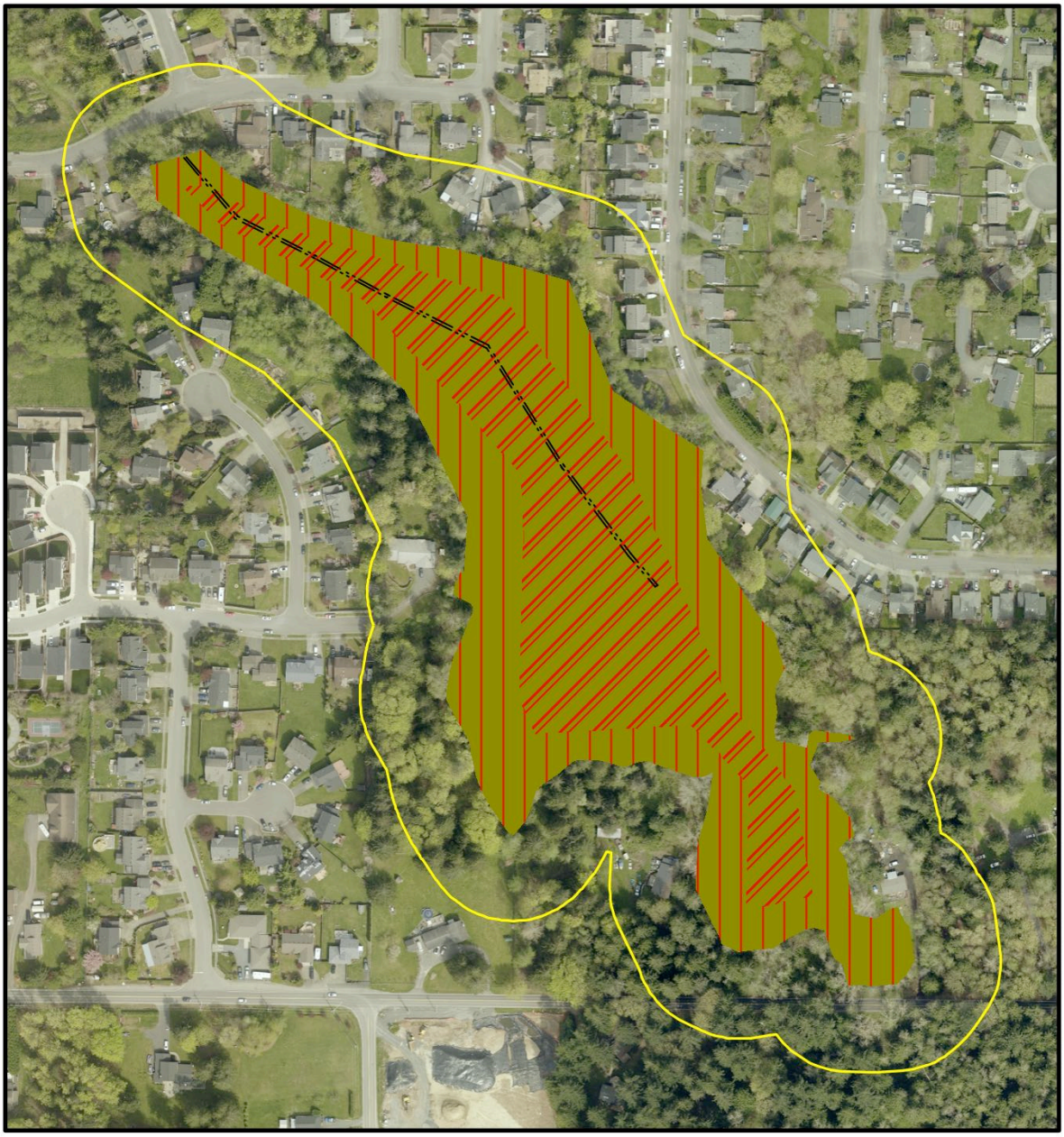
Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number A

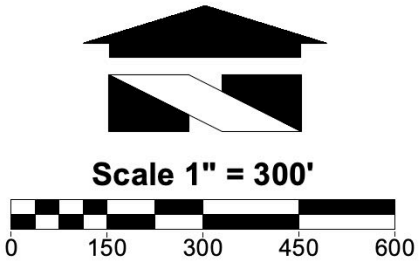
SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* ☐ The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

WETLAND RATING FIGURE 1- WETLAND A



LEGEND

- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY
- INTERMITTENT STREAM

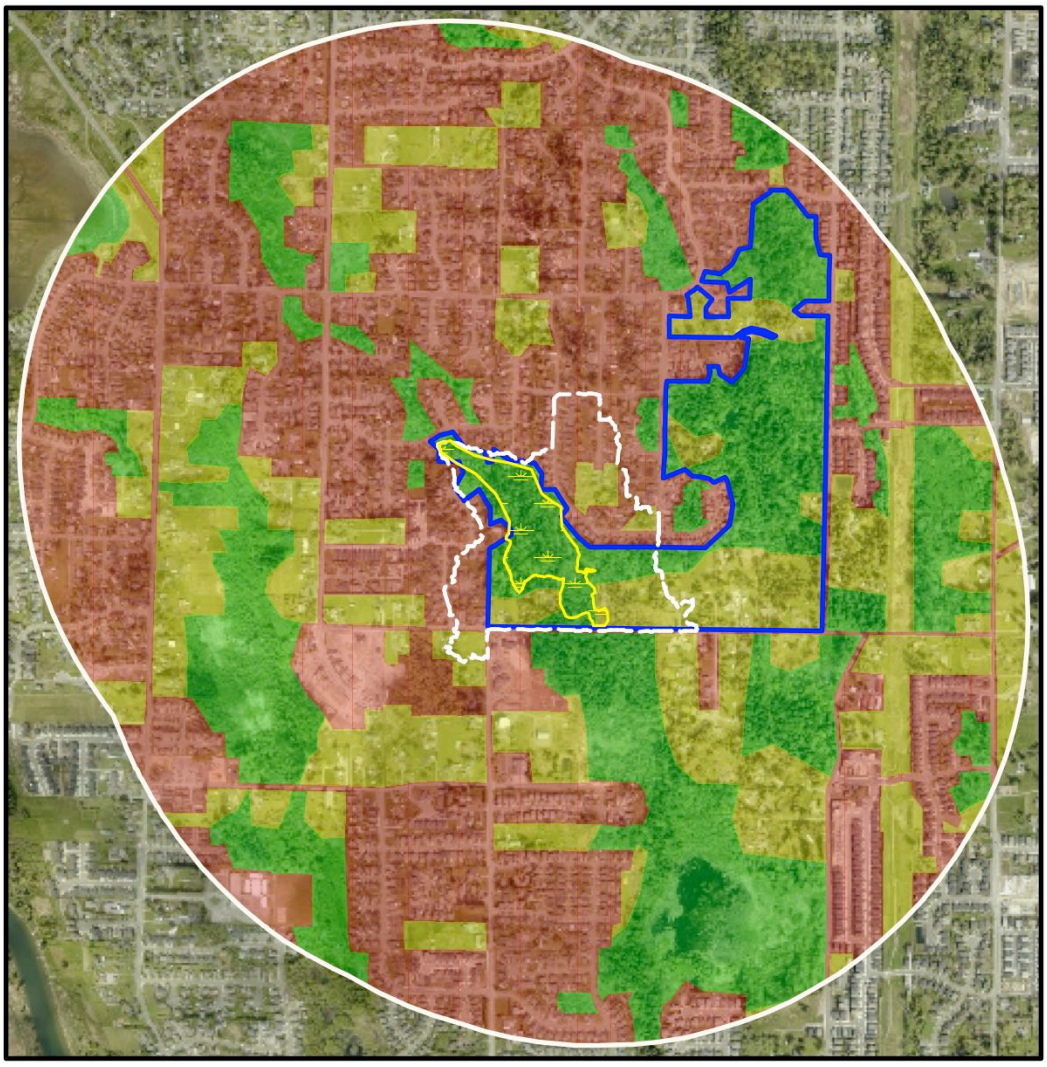


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WETLAND RATING
Wetland A

Figure A-1
WRI Job #
Rated b

WETLAND RATING FIGURE 2- WETLAND A



CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 4.3:1

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

Scale 1" = 1,500'

0 1,500 3,000

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WETLAND RATING
Wetland A

Figure A-2
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 3- WETLAND A



LEGEND

- WETLAND
- AQUATIC RESOURCES ON THE 303(d) LIST
- AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 1,000'

0 1,000 2,000

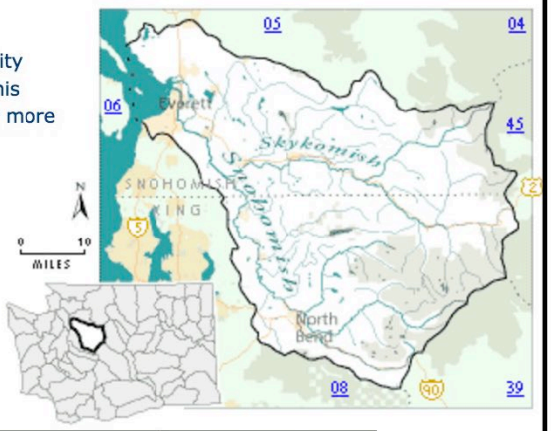
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WETLAND RATING
Wetland A

Figure A-3
WRI Job #
Rated b

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland A

Figure A-4
WRI Job #
Rated b

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

✔ **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
										Circle the appropriate ratings
Site Potential	H	[M]	L	H	M	[L]	H	M	[L]	
Landscape Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Value	[H]	M	L	H	M	[L]	H	[M]	L	**TOTAL**
Score Based on Ratings	**7**			**4**			**5**			**16**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	[ ]

Wetland name or number B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number B

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number B

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☑ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**3**
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☑ Wetland has persistent, ungrazed plants > 95% of area points = 5 ☐ Wetland has persistent, ungrazed plants > ½ of area points = 3 ☐ Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	**5**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☐ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is ≥ ¼ total area of wetland points = 2 ☑ Area seasonally ponded is < ¼ total area of wetland points = 0	**0**
Total for D 1 Add the points in the boxes above	**8**

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

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

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

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

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

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- [x] Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- [ ] Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- [ ] Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- [ ] Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

4

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- [ ] Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- [ ] Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- [ ] Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- [ ] The wetland is a "headwater" wetland points = 3
- [ ] Wetland is flat but has small depressions on the surface that trap water points = 1
- [x] Marks of ponding less than 0.5 ft (6 in) points = 0

0

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- [ ] The area of the basin is less than 10 times the area of the unit points = 5
- [ ] The area of the basin is 10 to 100 times the area of the unit points = 3
- [x] The area of the basin is more than 100 times the area of the unit points = 0
- [ ] Entire wetland is in the Flats class points = 5

0

Total for D 4 — Add the points in the boxes above: **4**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 [No = 0] — **0**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? [Yes = 1] No = 0 — **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? [Yes = 1] No = 0 — **1**

Total for D 5 — Add the points in the boxes above: **2**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- [ ] • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- [ ] • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- [ ] • Flooding from groundwater is an issue in the sub-basin. points = 1
- [x] • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- [ ] • There are no problems with flooding downstream of the wetland. points = 0

0

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [No = 0] — **0**

Total for D 6 — Add the points in the boxes above: **0**

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

Wetland name or number B

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____Aquatic bed — 4 structures or more: points = 4
____Emergent — 3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover) — [2 structures: points = 1]
✔ Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

✔ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated — 4 or more types present: points = 3
____Seasonally flooded or inundated — 3 types present: points = 2
____Occasionally flooded or inundated — 2 types present: points = 1
✔ Saturated only — [1 type present: points = 0]
____Permanently flowing stream or river in, or adjacent to, the wetland
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland
____**Lake Fringe wetland** — **2 points**
____**Freshwater tidal wetland** — **2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

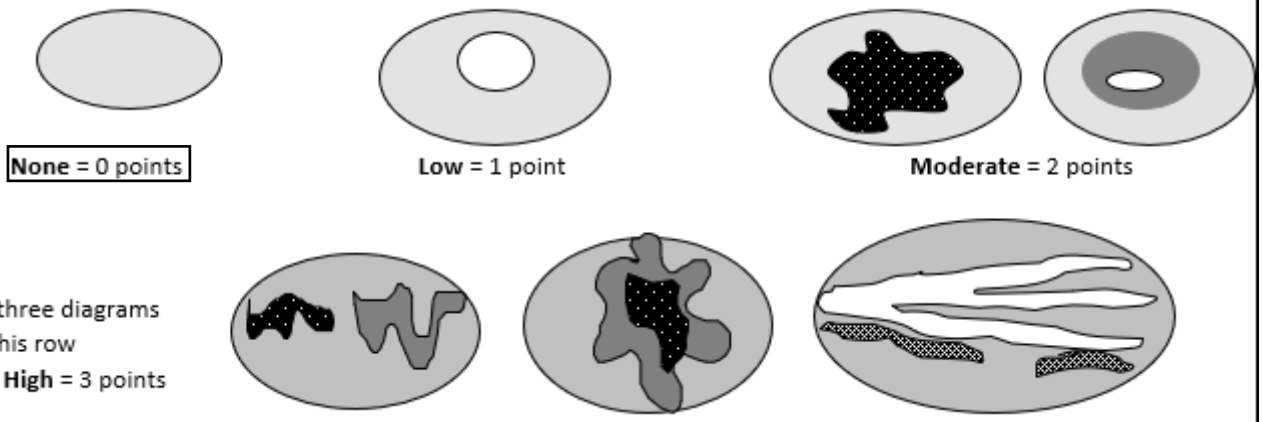
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

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

1

H 1.4. Interspersion of habitats

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



[**None** = 0 points]

Low = 1 point

Moderate = 2 points

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

0

Wetland name or number B

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**0**
Total for H 1 Add the points in the boxes above	**2**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 9 **+** [(% moderate and low intensity land uses)/2] 2 **=** 11 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☑ 10-19% of 1 km Polygon points = 1 ☐ < 10% of 1 km Polygon points = 0	**1**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 31 **+** [(% moderate and low intensity land uses)/2] 13 **=** 43 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ☑ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☑ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**2**

Rating of Landscape Potential If score is**: __4-6 = H** __✔**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

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

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

Wetland name or number B

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☑ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number B

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☐ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number B

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm).

Yes = **Category I** | No = **Not a forested wetland for this section**

Cat. I

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes – Go to **SC 5.1** | No = **Not a wetland in a coastal lagoon**

Cat. I

SC 5.1. Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

Yes = **Category I** No = **Category II**

Cat. II

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW.

Yes – Go to **SC 6.1** | No = **Not an interdunal wetland for rating**

Cat I

Cat. II

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**

Cat. III

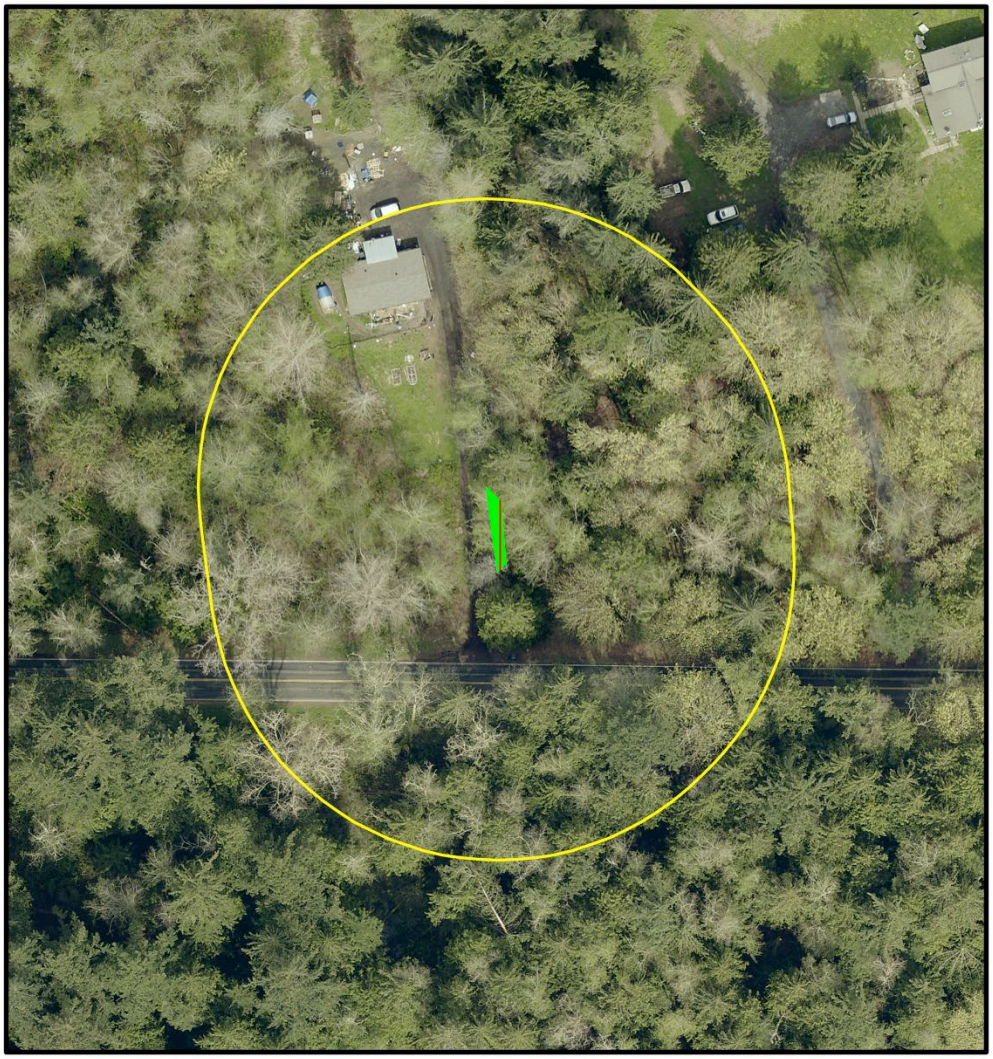
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**

Cat. IV

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form

WETLAND RATING FIGURE 1- WETLAND B



Scale 1" = 100'

0 50 100 150 200

LEGEND

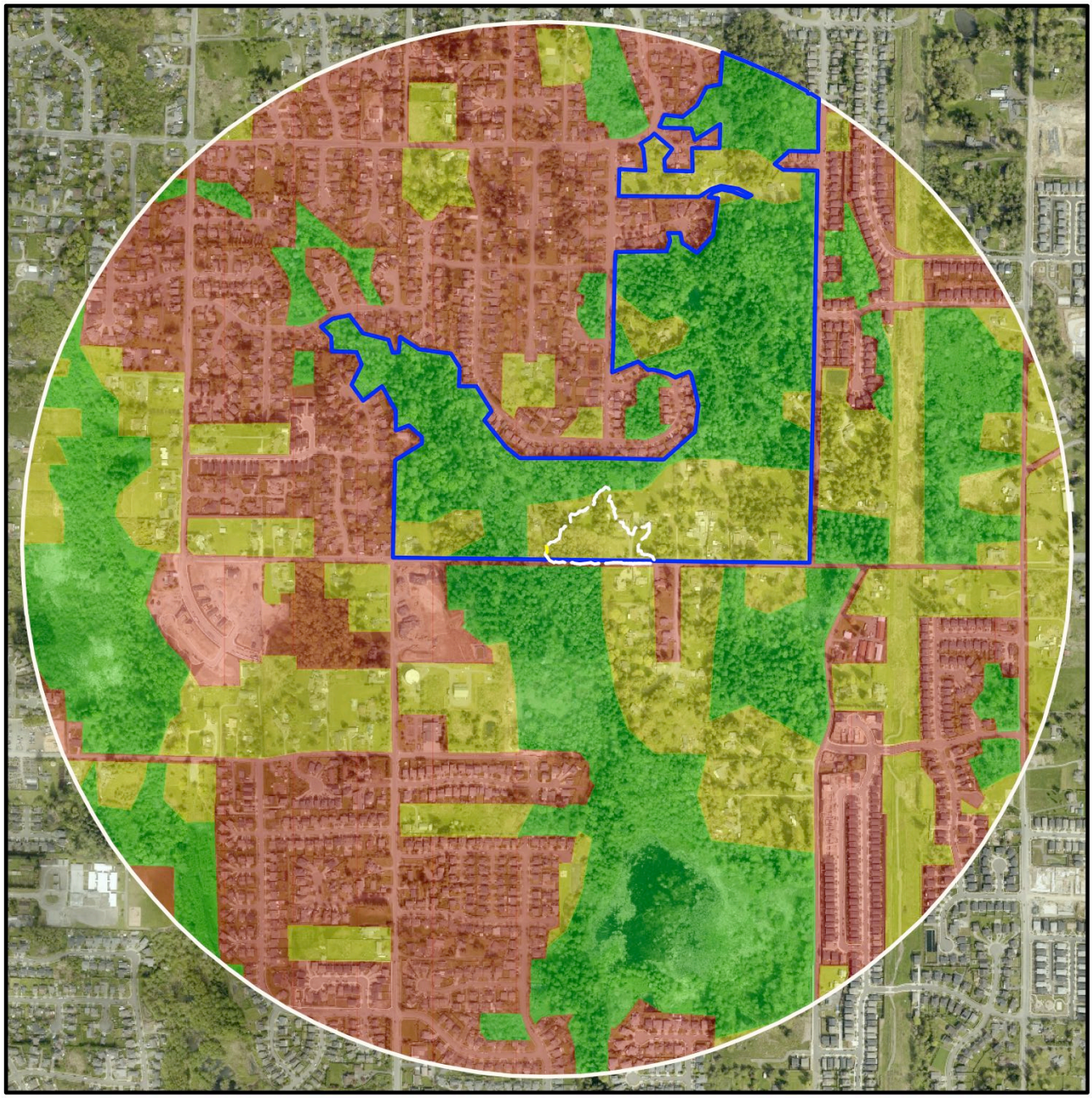
- SCRUB-SHRUB
- SATURATED ONLY
- 150' FROM WL BOUNDARY

Wetland Resources, Inc.
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Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland B

Figure B-1
WRI Job #
Rated b

WETLAND RATING FIGURE 2- WETLAND B



SCALE

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS XX:1

Scale 1" = 1,000'

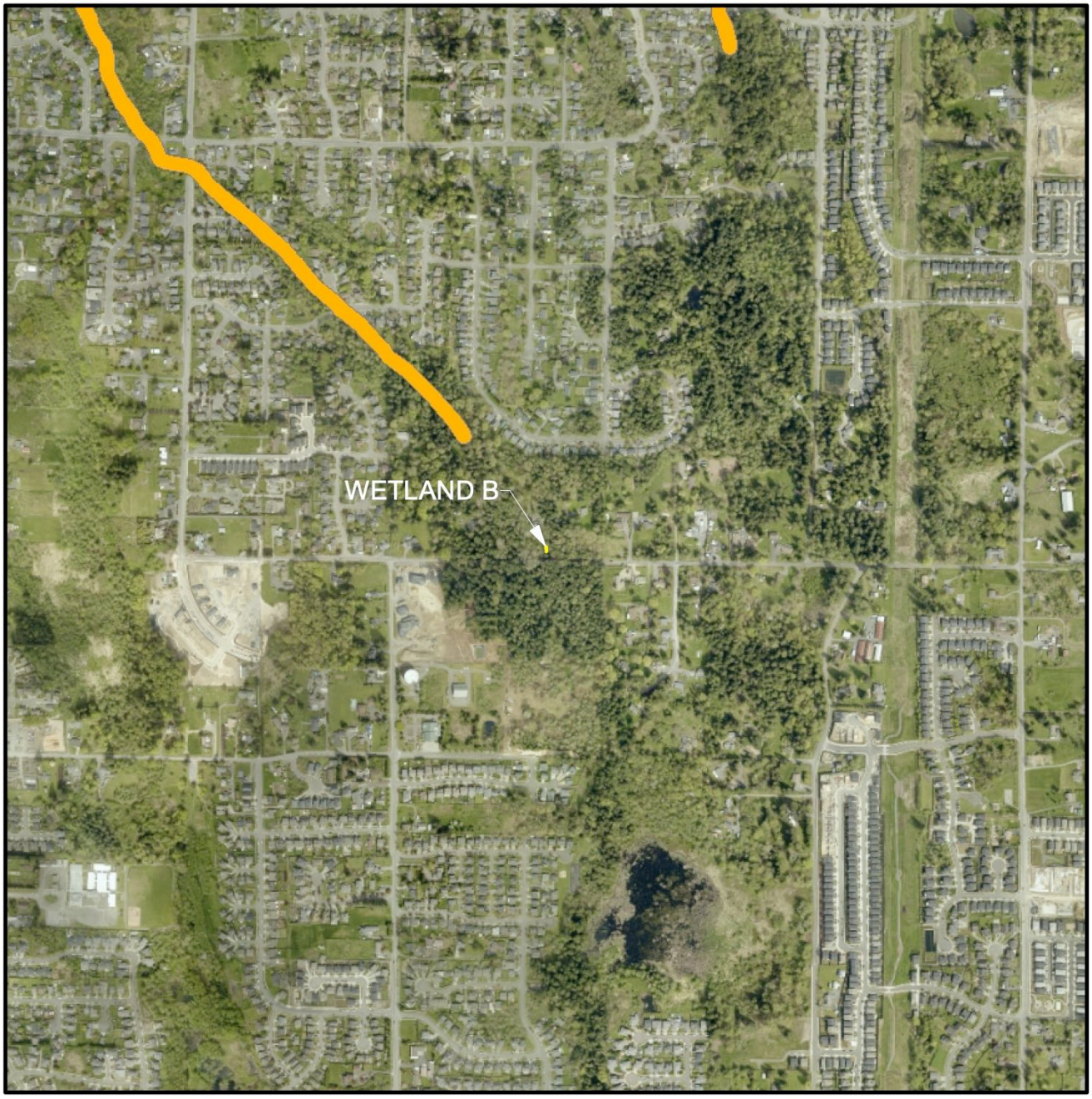
0 1,000 2,000

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WETLAND RATING
Wetland B

Figure B-2
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 3- WETLAND B



LEGEND

WETLAND

AQUATIC RESOURCES ON THE 303(d) LIST

AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 1,000'

0 1,000 2,000

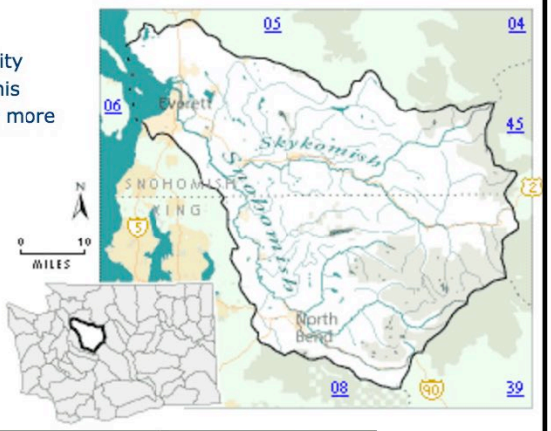
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WETLAND RATING
Wetland B

Figure B-3
WRI Job #
Rated b

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland B

Figure B-4
WRI Job #
Rated b

Wetland name or number C

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland C Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY **II** (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

✔ **Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	[M]	L	[H]	M	L	
Landscape Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Value	[H]	M	L	H	[M]	L	[H]	M	L	**TOTAL**
Score Based on Ratings	**7**			**6**			**8**			**21**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	[ ]

Wetland name or number C

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number C

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number C

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- ☑ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

1

D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0 — **0**

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

- ☐ Wetland has persistent, ungrazed plants > 95% of area points = 5
- ☑ Wetland has persistent, ungrazed plants > ½ of area points = 3
- ☐ Wetland has persistent, ungrazed plants ≥ $^1/_{10}$ of area points = 1
- ☐ Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0

3

D 1.4. Characteristics of seasonal ponding or inundation:

This is the area that is ponded for at least 2 months. See description in manual.

- ☑ Area seasonally ponded is > ½ total area of wetland points = 4
- ☐ Area seasonally ponded is ≥ ¼ total area of wetland points = 2
- ☐ Area seasonally ponded is < ¼ total area of wetland points = 0

4

Total for D 1 — Add the points in the boxes above — **8**

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 — **0**

D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0 — **0**

D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0 — **1**

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0 — **0**

Total for D 2 — Add the points in the boxes above — **1**

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

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0 — **0**

D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0 — **1**

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0 — **2**

Total for D 3 — Add the points in the boxes above — **3**

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

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- ☐ Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- ☐ Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- ☑ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

0

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- ☑ The wetland is a "headwater" wetland points = 3
- ☐ Wetland is flat but has small depressions on the surface that trap water points = 1
- ☐ Marks of ponding less than 0.5 ft (6 in) points = 0

3

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- ☐ The area of the basin is less than 10 times the area of the unit points = 5
- ☑ The area of the basin is 10 to 100 times the area of the unit points = 3
- ☐ The area of the basin is more than 100 times the area of the unit points = 0
- ☐ Entire wetland is in the Flats class points = 5

3

Total for D 4 — Add the points in the boxes above — **6**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 [No = 0] — **0**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 [No = 0] — **0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? [Yes = 1] No = 0 — **1**

Total for D 5 — Add the points in the boxes above — **1**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- ☐ • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- ☑ • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- ☐ • Flooding from groundwater is an issue in the sub-basin. points = 1
- ☐ • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- ☐ • There are no problems with flooding downstream of the wetland. points = 0

1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [No = 0] — **0**

Total for D 6 — Add the points in the boxes above — **1**

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

Wetland name or number C

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

✔	Aquatic bed	4 structures or more: points = 4
✔	Emergent	3 structures: points = 2
✔	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
✔	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

✔ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

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

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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

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

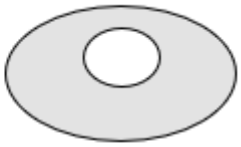
2

H 1.4. Interspersion of habitats

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



None = 0 points

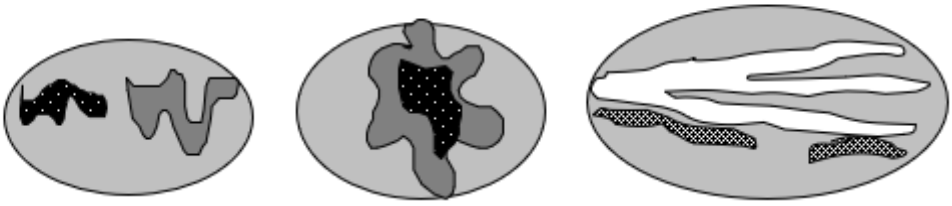


Low = 1 point



Moderate = 2 points

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



3

Wetland name or number C

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✔ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✔ Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ✔ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ✔ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**4**
Total for H 1 Add the points in the boxes above	**15**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 5 + [(% moderate and low intensity land uses)/2] 3 = 8 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ✔ < 10% of 1 km Polygon points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 24 + [(% moderate and low intensity land uses)/2] 16 = 40 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ✔ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ✔ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**1**

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

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

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

Wetland name or number C

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☑ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number C

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☑ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number C

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

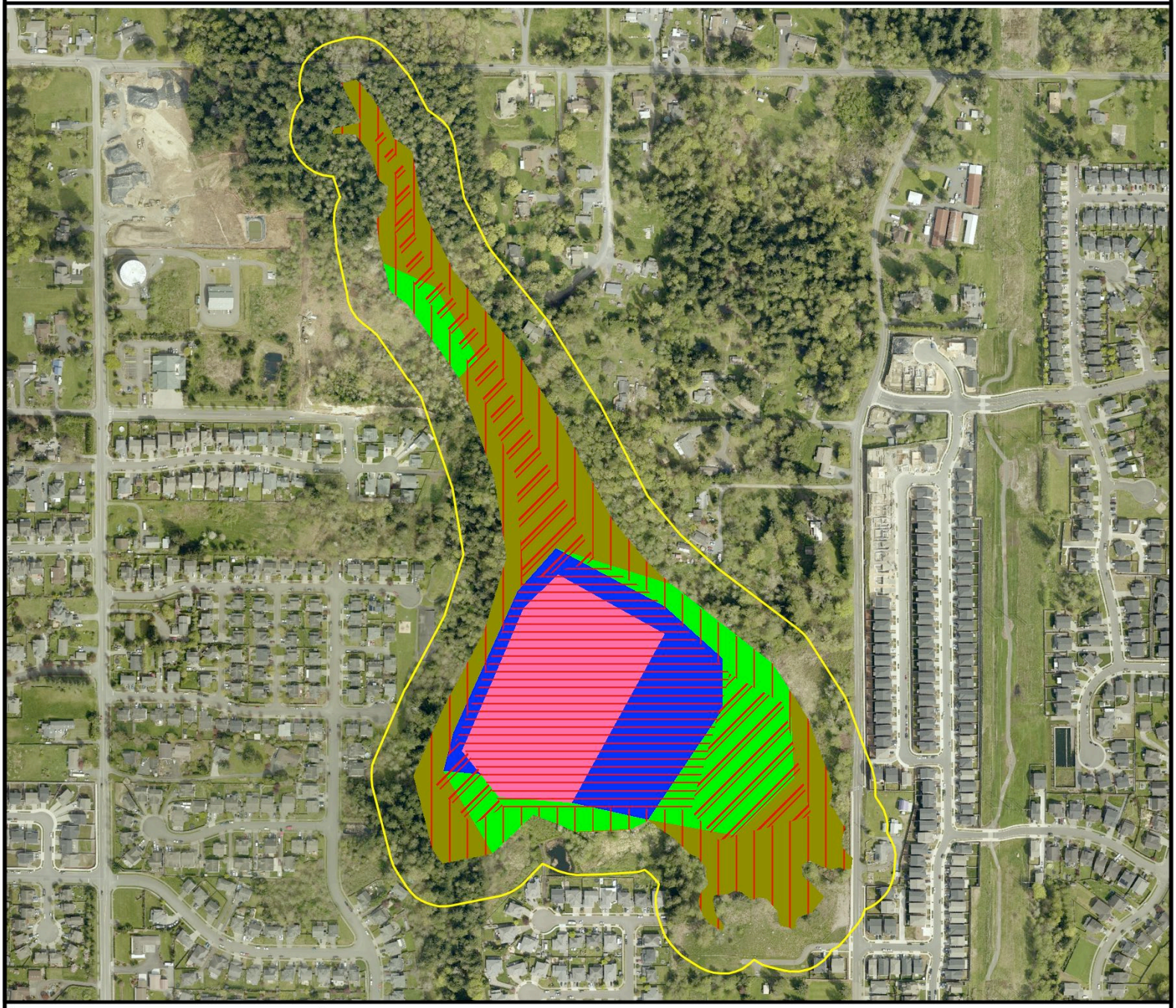
Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number C

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* ☐ The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

WETLAND RATING FIGURE 1- WETLAND C



LEGEND

- SCRUB-SHRUB
- AQUATIC BED
- EMERGENT VEGETATION
- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- PERMANENTLY FLOODED
- 150' FROM WL BOUNDARY

Scale 1" = 500'

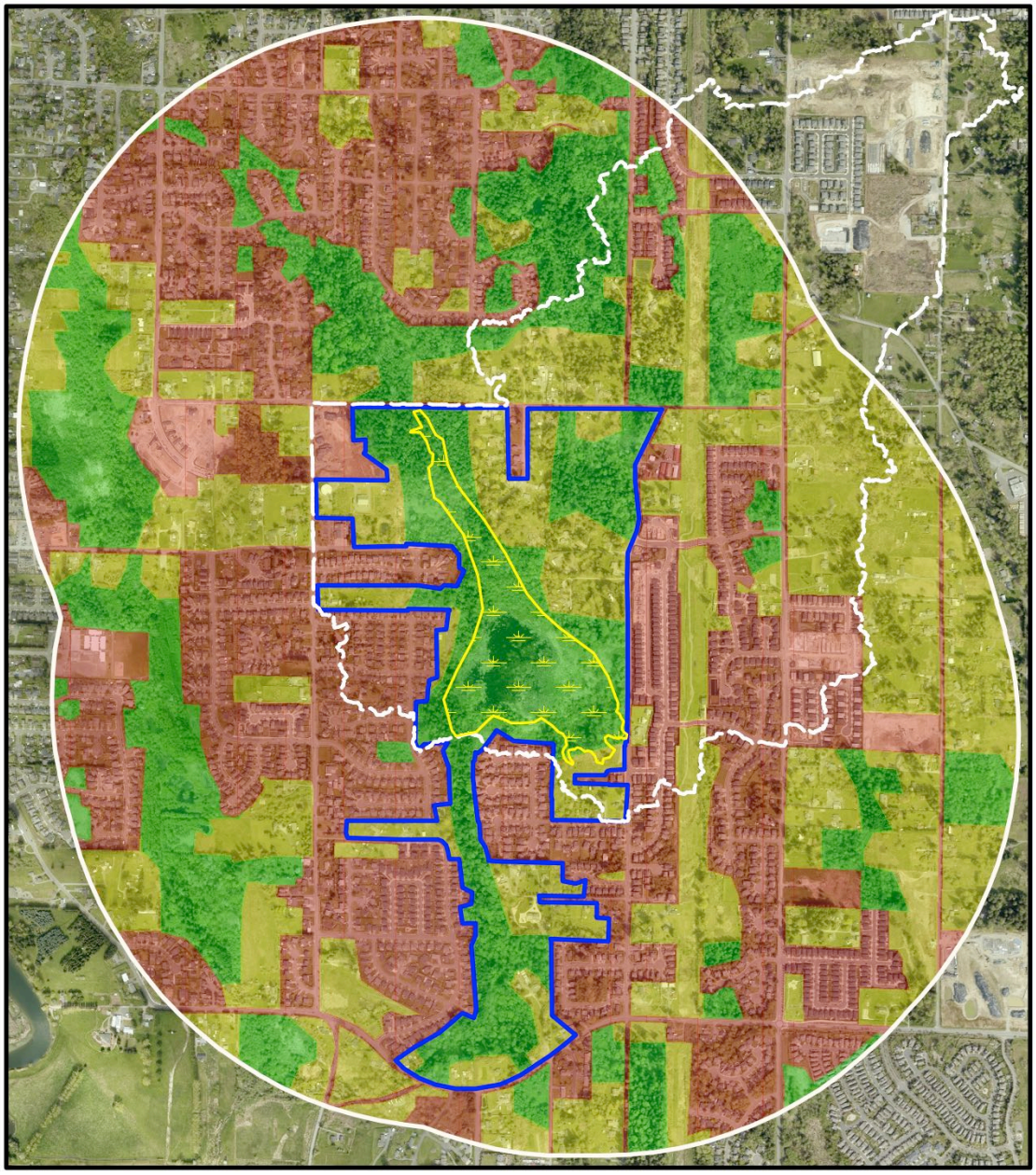
0 250 500 750 1000

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WETLAND RATING
Wetland C

Figure C-1
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 2- WETLAND C



CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 13.5:1

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

Scale 1" = 1,500'

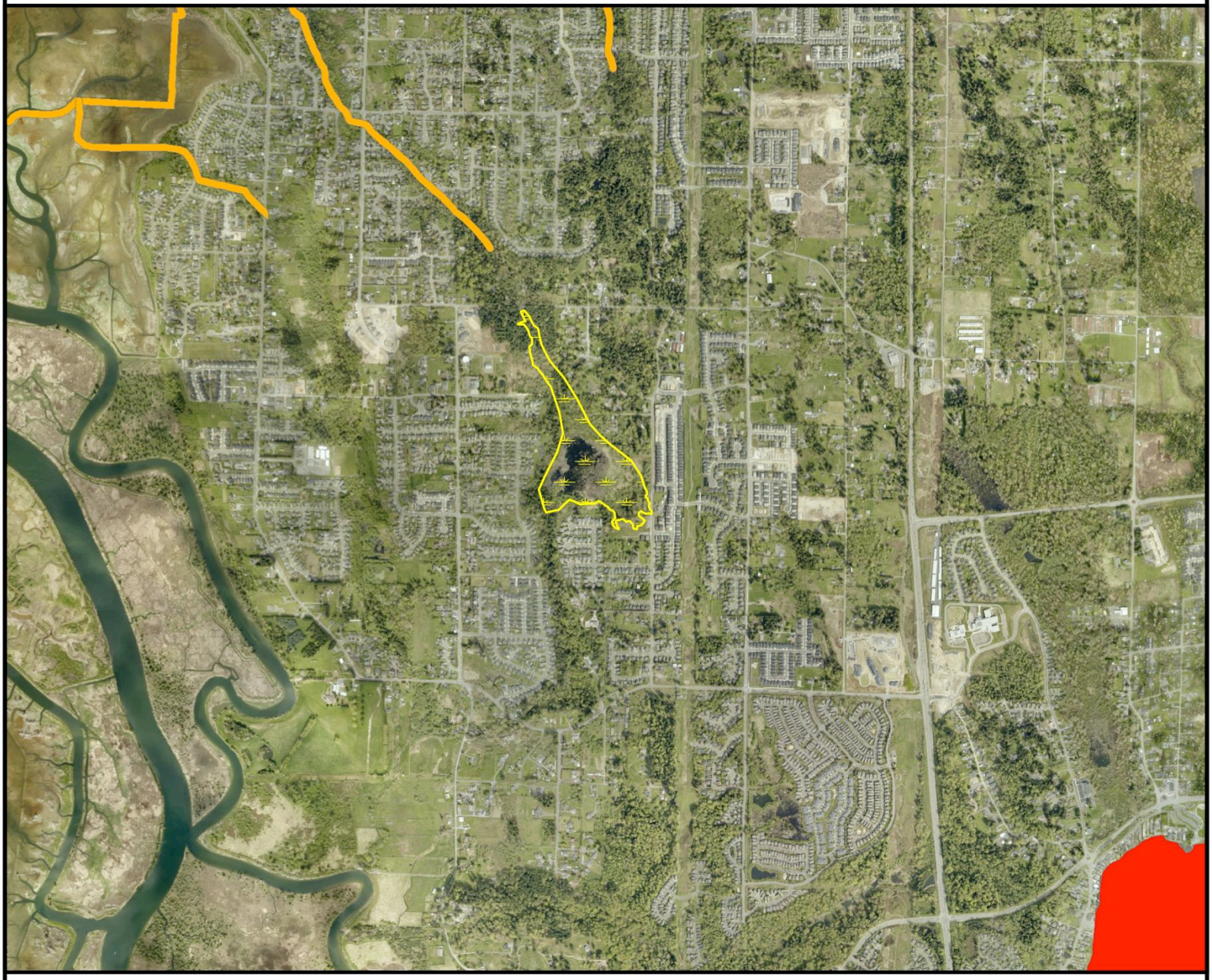
0 1,500 3,000

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WETLAND RATING
Wetland C

Figure C-2
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 3- WETLAND C



LEGEND

- WETLAND
- AQUATIC RESOURCES ON THE 303(d) LIST
- AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 2,000'

0 2,000 4,000

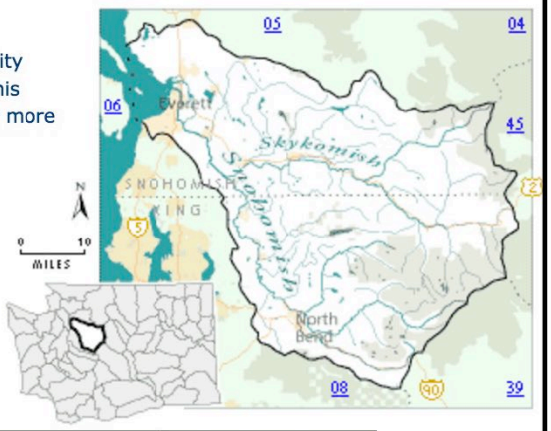
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WETLAND RATING
Wetland C

Figure C-3
WRI Job #
Rated b

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland C

Figure C-4
WRI Job #
Rated b

Wetland name or number D

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland D Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	M	[L]	H	[M]	L	
Landscape Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Value	[H]	M	L	H	[M]	L	H	[M]	L	**TOTAL**
Score Based on Ratings	**7**			**5**			**6**			**18**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	[ ]

Wetland name or number D

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number D

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number D

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number D

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☑ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**2**
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☐ Wetland has persistent, ungrazed plants > 95% of area points = 5 ☑ Wetland has persistent, ungrazed plants > ½ of area points = 3 ☐ Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	**3**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☑ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is ≥ ¼ total area of wetland points = 2 ☐ Area seasonally ponded is < ¼ total area of wetland points = 0	**4**
Total for D 1 Add the points in the boxes above	**9**

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

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

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

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

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

Wetland name or number D

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- ☑ Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- ☐ Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

2

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- ☐ The wetland is a "headwater" wetland points = 3
- ☐ Wetland is flat but has small depressions on the surface that trap water points = 1
- ☑ Marks of ponding less than 0.5 ft (6 in) points = 0

0

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- ☐ The area of the basin is less than 10 times the area of the unit points = 5
- ☑ The area of the basin is 10 to 100 times the area of the unit points = 3
- ☐ The area of the basin is more than 100 times the area of the unit points = 0
- ☐ Entire wetland is in the Flats class points = 5

3

Total for D 4 — Add the points in the boxes above — **5**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 [No = 0] — **0**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? [Yes = 1] No = 0 — **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? [Yes = 1] No = 0 — **1**

Total for D 5 — Add the points in the boxes above — **2**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- ☐ • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- ☑ • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- ☐ • Flooding from groundwater is an issue in the sub-basin. points = 1
- ☐ • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- ☐ • There are no problems with flooding downstream of the wetland. points = 0

1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [No = 0] — **0**

Total for D 6 — Add the points in the boxes above — **1**

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

Wetland name or number D

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____Aquatic bed
____Emergent
__✔__Scrub-shrub (areas where shrubs have > 30% cover)
__✔__Forested (areas where trees have > 30% cover)

If the unit has a Forested class, check if:

__✔__The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

4 structures or more: points = 4
[3 structures: points = 2]
2 structures: points = 1
1 structure: points = 0

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated
__✔__Seasonally flooded or inundated
____Occasionally flooded or inundated
__✔__Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland
____**Lake Fringe wetland** **2 points**
____**Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
[2 types present: points = 1]
1 type present: points = 0

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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

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

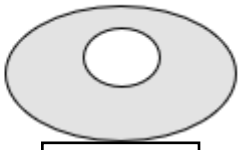
1

H 1.4. Interspersion of habitats

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



None = 0 points

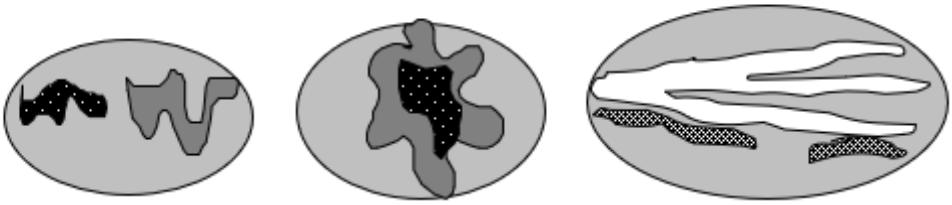


[**Low** = 1 point]



Moderate = 2 points

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



1

Wetland name or number D

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✔ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✔ Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ✔ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**3**
Total for H 1 Add the points in the boxes above	**8**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 11 + [(% moderate and low intensity land uses)/2] 3 = 14 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ✔ 10-19% of 1 km Polygon points = 1 ☐ < 10% of 1 km Polygon points = 0	**1**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 30 + [(% moderate and low intensity land uses)/2] 13 = 43 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ✔ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ✔ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**2**

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

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

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

Wetland name or number D

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number D

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☐ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number D

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number D

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm).

Yes = **Category I** | No = **Not a forested wetland for this section**

Cat. I

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes – Go to **SC 5.1** | No = **Not a wetland in a coastal lagoon**

Cat. I

SC 5.1. Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

Yes = **Category I** No = **Category II**

Cat. II

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW.

Yes – Go to **SC 6.1** | No = **Not an interdunal wetland for rating**

Cat I

Cat. II

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**

Cat. III

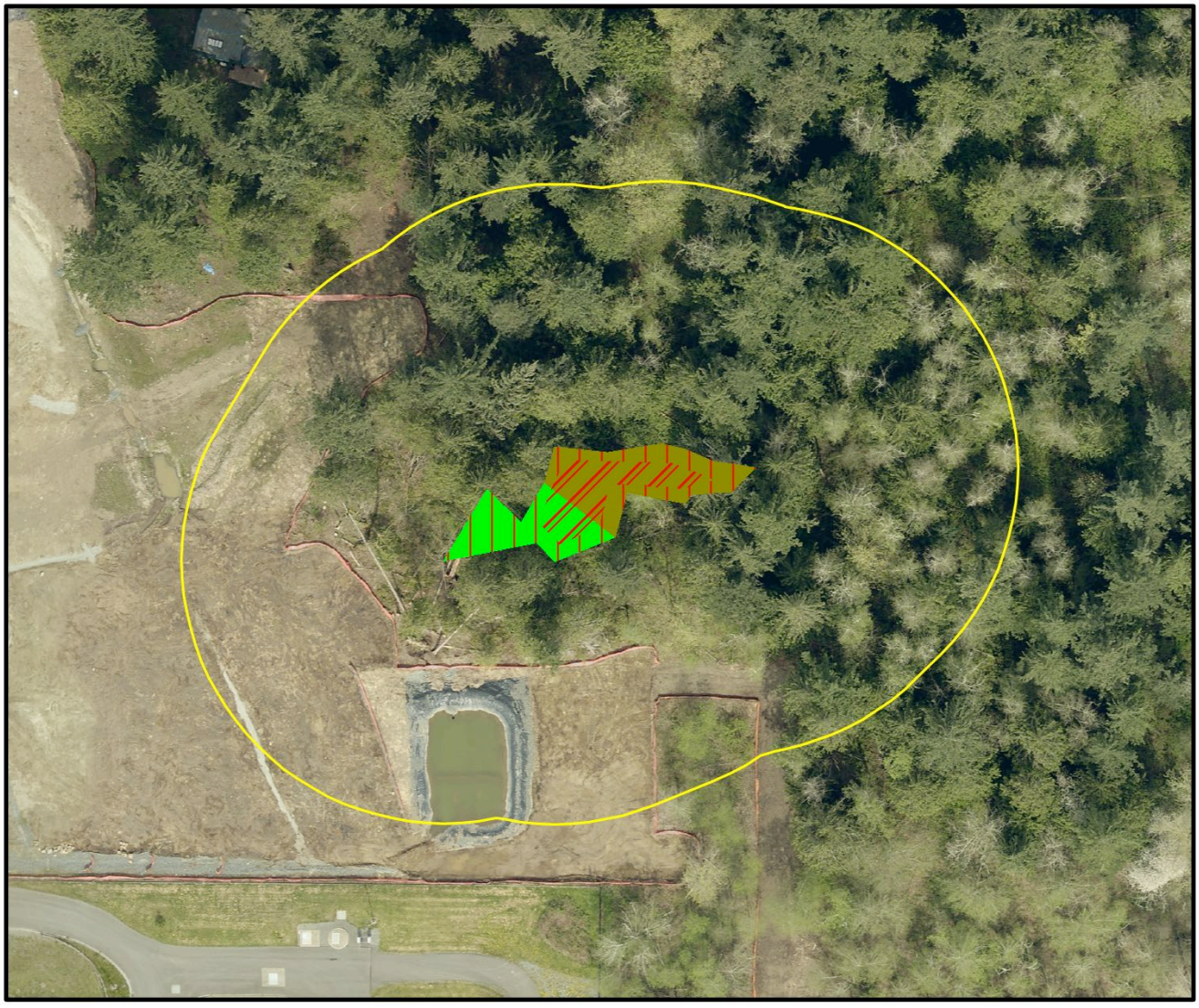
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**

Cat. IV

Category of wetland based on Special Characteristics

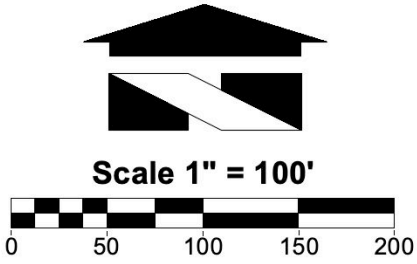
If you answered No for all types, enter "Not Applicable" on Summary Form

WETLAND RATING FIGURE 1- WETLAND D



LEGEND

- SCRUB-SHRUB
- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY

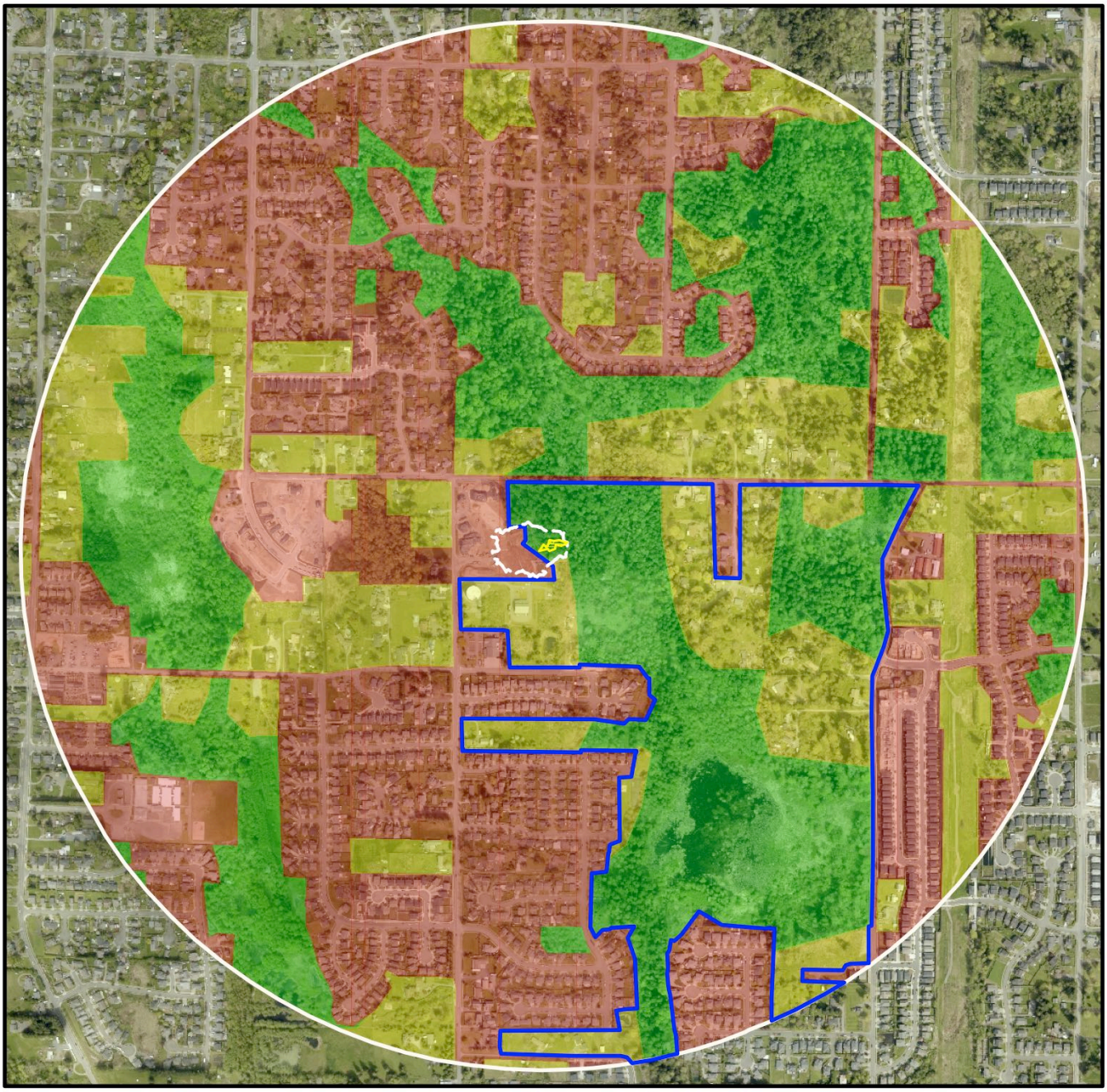


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Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland D

Figure D-1
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 2- WETLAND D



LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 20.8:1

Scale 1" = 1,000'

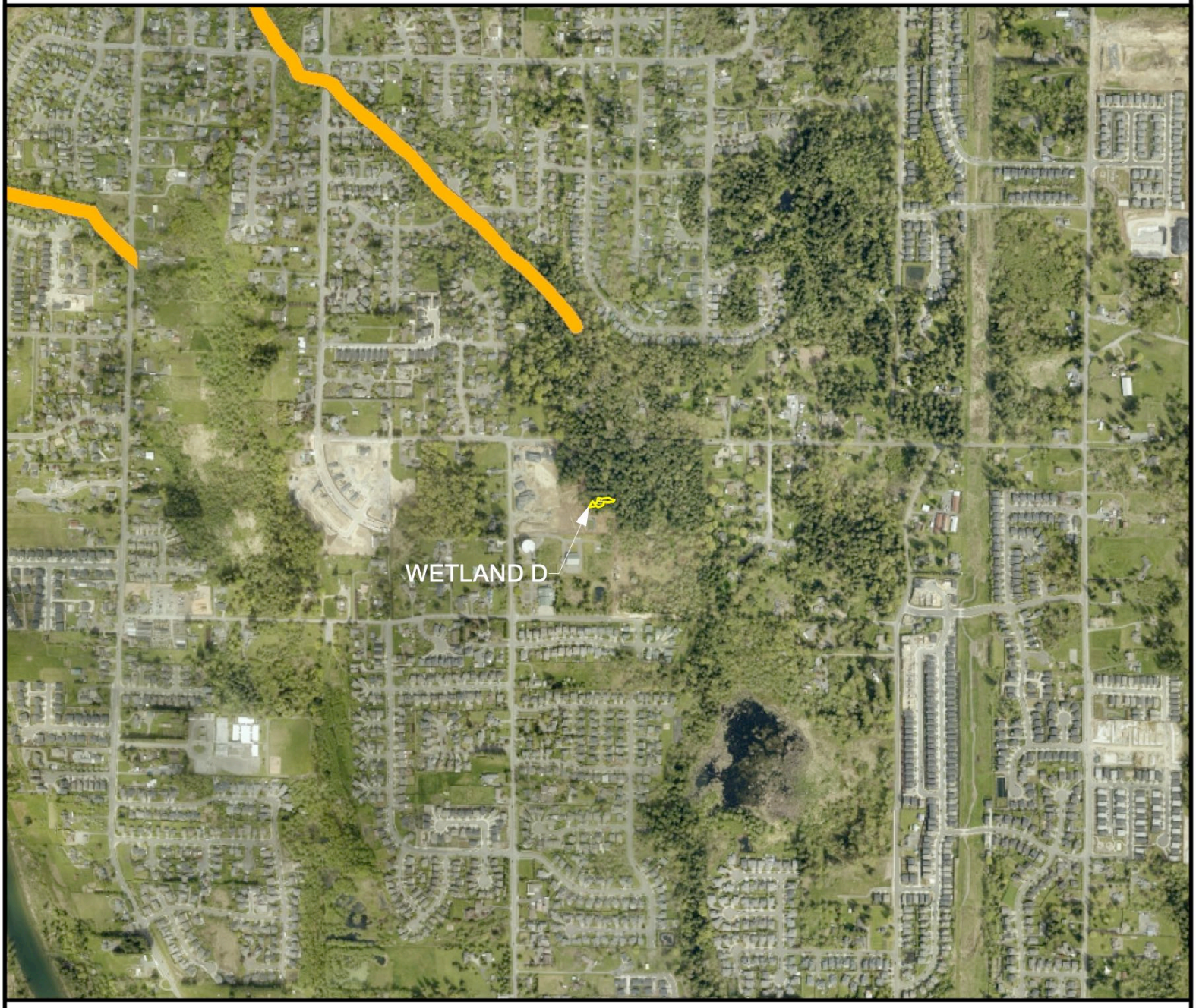
0 1,000 2,000

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WETLAND RATING
Wetland D

Figure D-2
WRI Job #
Rated b

WETLAND RATING FIGURE 3- WETLAND D



LEGEND

- WETLAND
- AQUATIC RESOURCES ON THE 303(d) LIST
- AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 1,000'

0 1,000 2,000

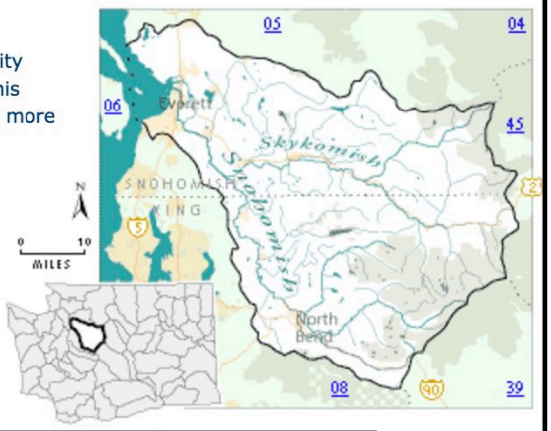
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WETLAND RATING
Wetland D

Figure D-3
WRI Job #
Rated b

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland D

Figure D-4
WRI Job # [illegible]
Rated b

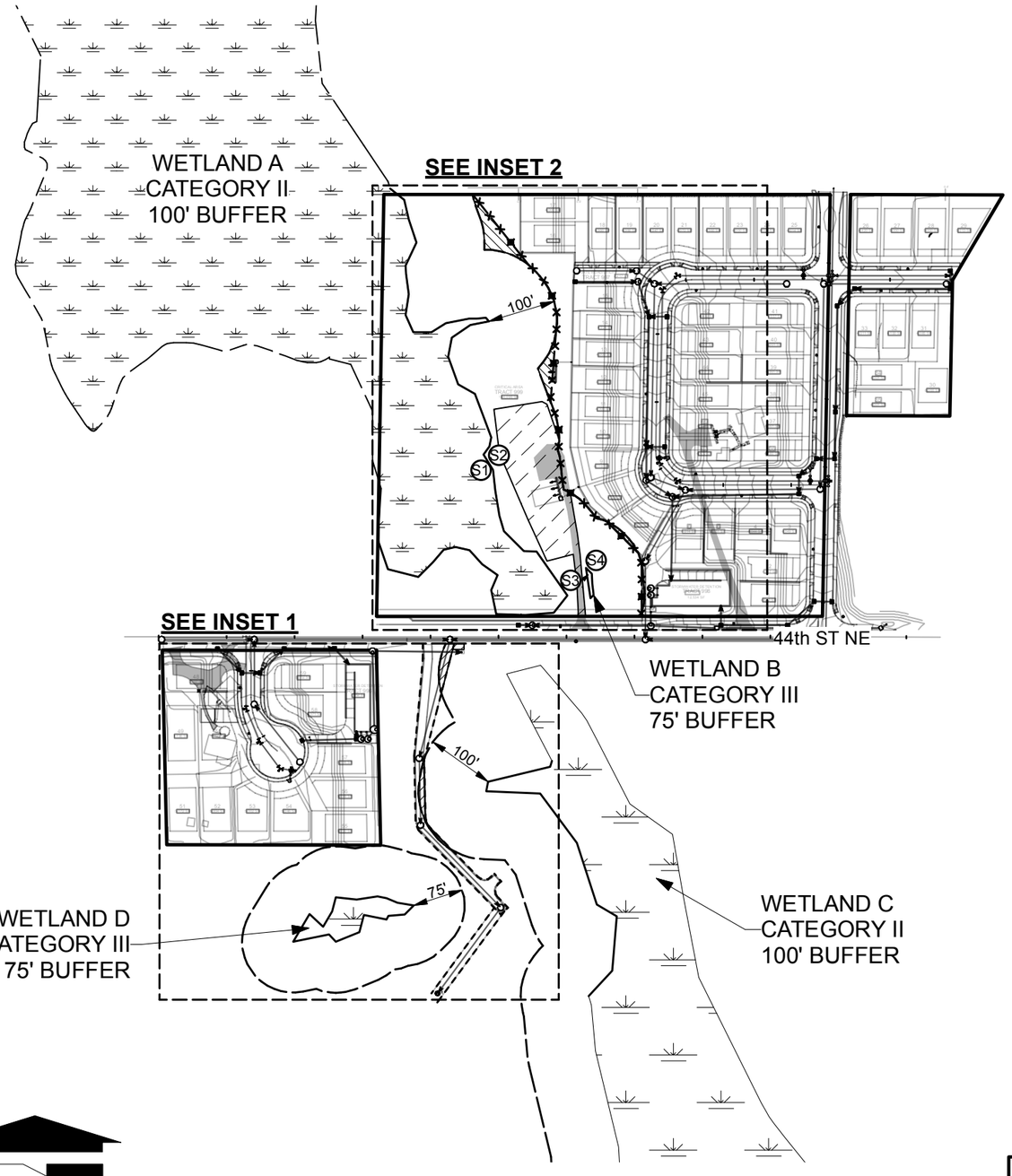
APPENDIX C

CRITICAL AREA STUDY & BUFFER MITIGATION MAPS (SHEETS 1-2/2)

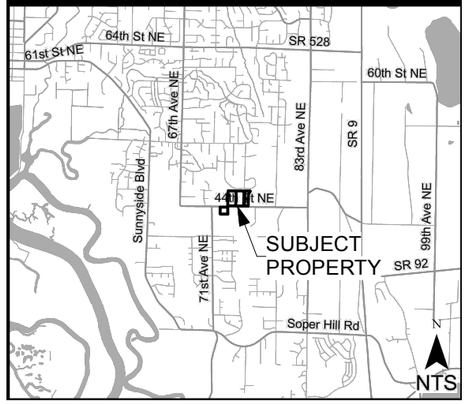
CRITICAL AREA STUDY AND BUFFER MITIGATION MAP

WILLIAMS POINTE

PORTION OF SECTION 2, 35, TOWNSHIP 29, 30N, RANGE 5E, W.M.



VICINITY MAP



LEGEND

- WETLAND
- WETLAND (APPROX.)
- BUFFER
- S1–S4 DATA SITES
- SEWER EASEMENT
- BUFFER AVERAGING REDUCTION AREA
- BUFFER AVERAGING ADDITION AREA
- BUFFER ENHANCEMENT AREA
- SPLIT-RAIL FENCING/ CRITICAL AREA SIGN

Scale 1" = 200'

0 100 200 300 400

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CRITICAL AREA STUDY AND BUFFER MITIGATION MAP
WILLIAMS POINTE

Keystone Land LLC
Attn: Joe Long
13805 Smokey Point Blvd, #102
Marysville, WA 98271

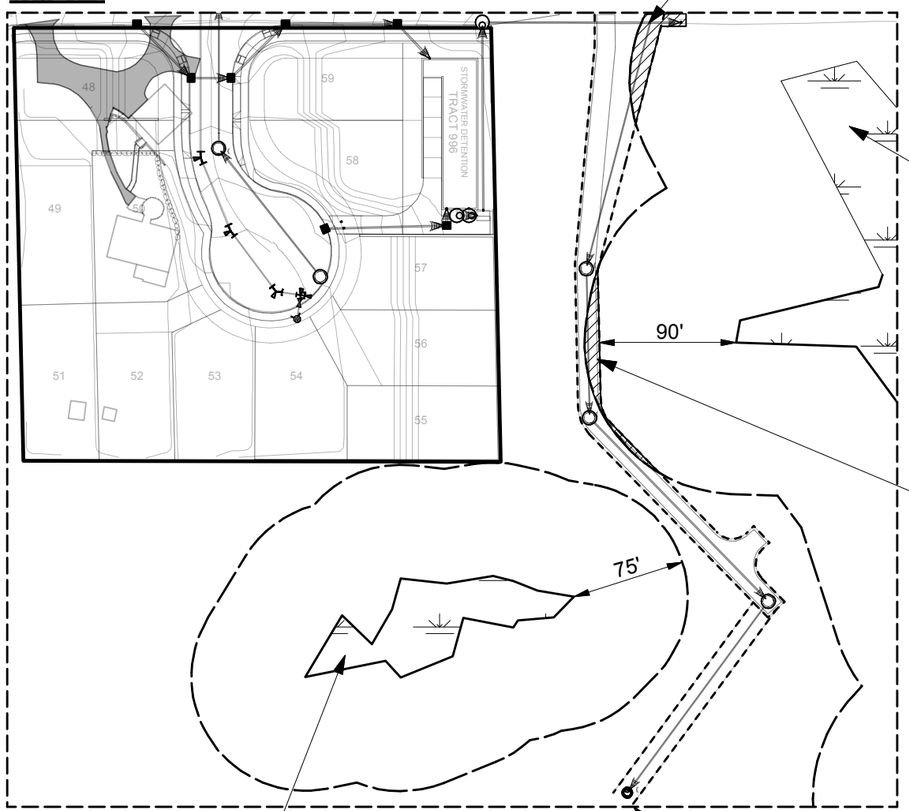
Sheet 1/2
WRI #: 23338
Drawn b
Date: 4/25/

CRITICAL AREA STUDY AND BUFFER MITIGATION MAP

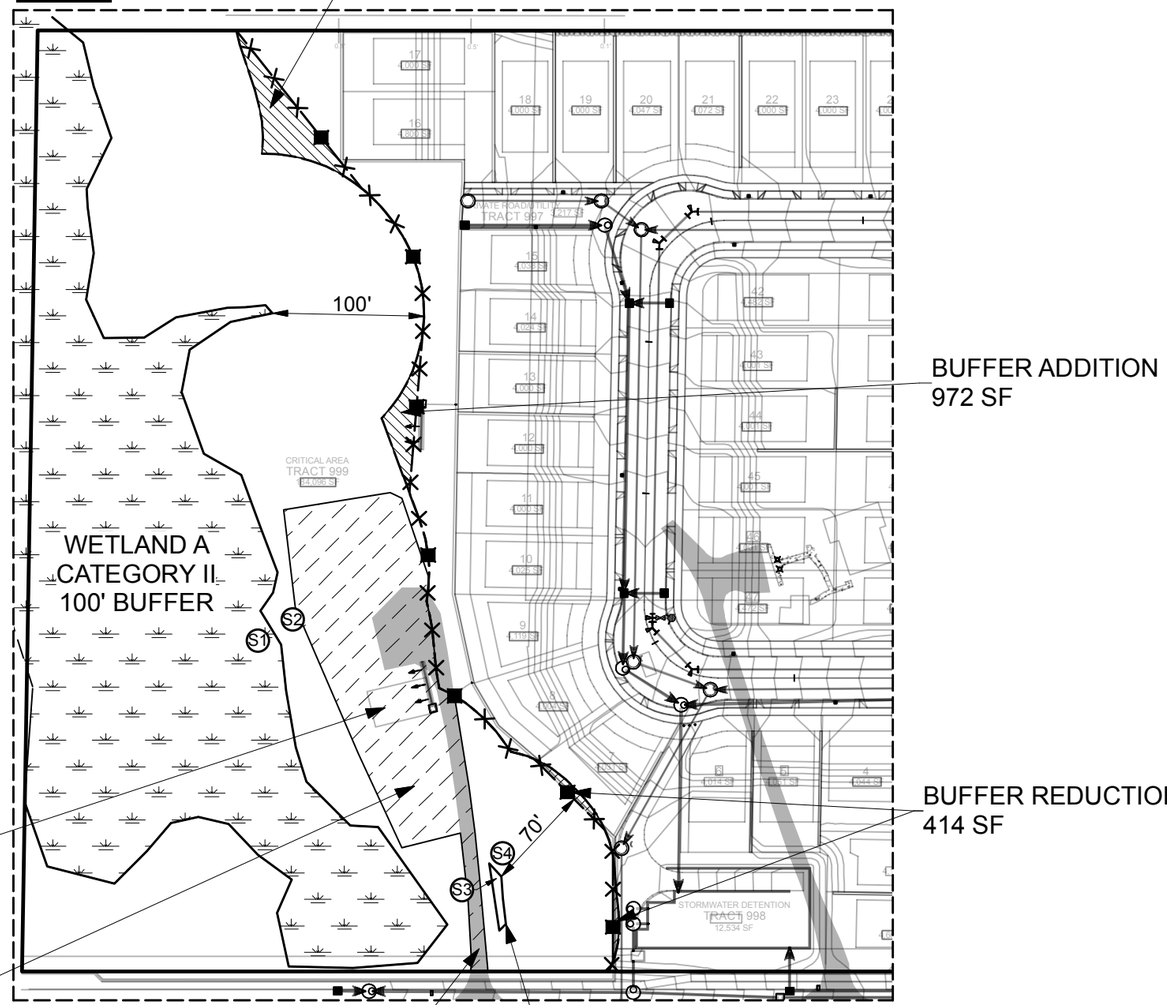
WILLIAMS POINTE

PORTION OF SECTION 2, 35, TOWNSHIP 29, 30N, RANGE 5E, W.M.

INSET 1



INSET 2



LEGEND	
WETLAND	BUFFER AVERAGING REDUCTION AREA
WETLAND (APPROX.)	BUFFER AVERAGING ADDITION AREA
BUFFER	BUFFER ENHANCEMENT AREA
S1–S4 DATA SITES	
SEWER EASEMENT	SPLIT-RAIL FENCING/ CRITICAL AREA SIGN

Scale 1" = 100'

0 50 100 150 200

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CRITICAL AREA STUDY AND BUFFER MITIGATION MAP
WILLIAMS POINTE

Keystone Land LLC
Attn: Joe Long
13805 Smokey Point Blvd, #102
Marysville, WA 98271

Sheet 2/2
WRI #: 23338
Drawn b
Date: 4/25/

GENERAL NOTES

THE GENERAL CONTRACTOR IS TO PROVIDE SUBGRADES 4" BELOW HARD SURFACES PLUS/MINUS .1 FOOT.

ALL ROUGH GRADING SHALL BE POSITIVE, DRAINING AWAY FROM ALL STRUCTURES.

ALL STONES LARGER THAN 1.5" DIAMETER SHALL BE REMOVED FROM THE GROWING MEDIUM.

TOPSOIL SHALL BE PLACED AT A MINIMUM DEPTH OF 4" IN ALL LAWN AND BED AREAS.

TOPSOIL SHALL BE TILLED INTO THE EXISTING SUBGRADE TO ELIMINATE SOIL INTERFACE PROBLEMS.

TOPSOIL SHALL BE TOPSOILS NW 3-WAY MIX OR APPROVED EQUAL.

ALL BED AREAS TO RECEIVE 2" OF FINE GROUND FIR OR HEMLOCK BARK, COMPOSITION MULCHES ARE NOT AN ACCEPTABLE ALTERNATIVE.

TREES AND SHRUBS ARE TO BE PLANTED AT A DEPTH 3/4" HIGHER THAN THE LEVEL THAT THEY WERE GROWN IN THE NURSERY.

BARK MULCH IS NOT TO BE PLACED ABOVE THE ROOT CROWN.

ALL PLANTS SHALL AT LEAST CONFORM TO THE MINIMUM STANDARD ESTABLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

LAWN AREAS ARE TO BE HYDROSEEDED WITH A PACIFIC NORTHWEST LAWN MIX PER MANUFACTURER'S SPECIFICATIONS, OR APPROVED EQUAL. REMOVE ALL STONES LARGER THAN 1" FROM LAWN AREAS.

SUBSTITUTIONS ARE STRONGLY DISCOURAGED. IF PLANT AVAILABILITY IS A PROBLEM, CONTACT THE LANDSCAPE ARCHITECT FOR SOURCES OR ACCEPTABLE ALTERNATIVES.

IF THE SITE WORK IS DIFFERENT THAN SHOWN ON THE LANDSCAPE PLAN, OR POOR SOILS AND DEBRIS ARE DISCOVERED, REQUIRING CHANGES TO THE LANDSCAPE PLAN, CONTACT THE LANDSCAPE ARCHITECT FOR INSTRUCTION.

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22C.120.180 Landscaping – Maintenance.

(1) All landscaped areas and plants required by this chapter must be permanently maintained in a healthy growing condition in order to accomplish the purpose for which they were required.

(2) Dead or diseased plants must be replaced within 30 days of notification, or as soon as practical in regard to freezing weather, or complex situations involving the removal and replacement of large trees.

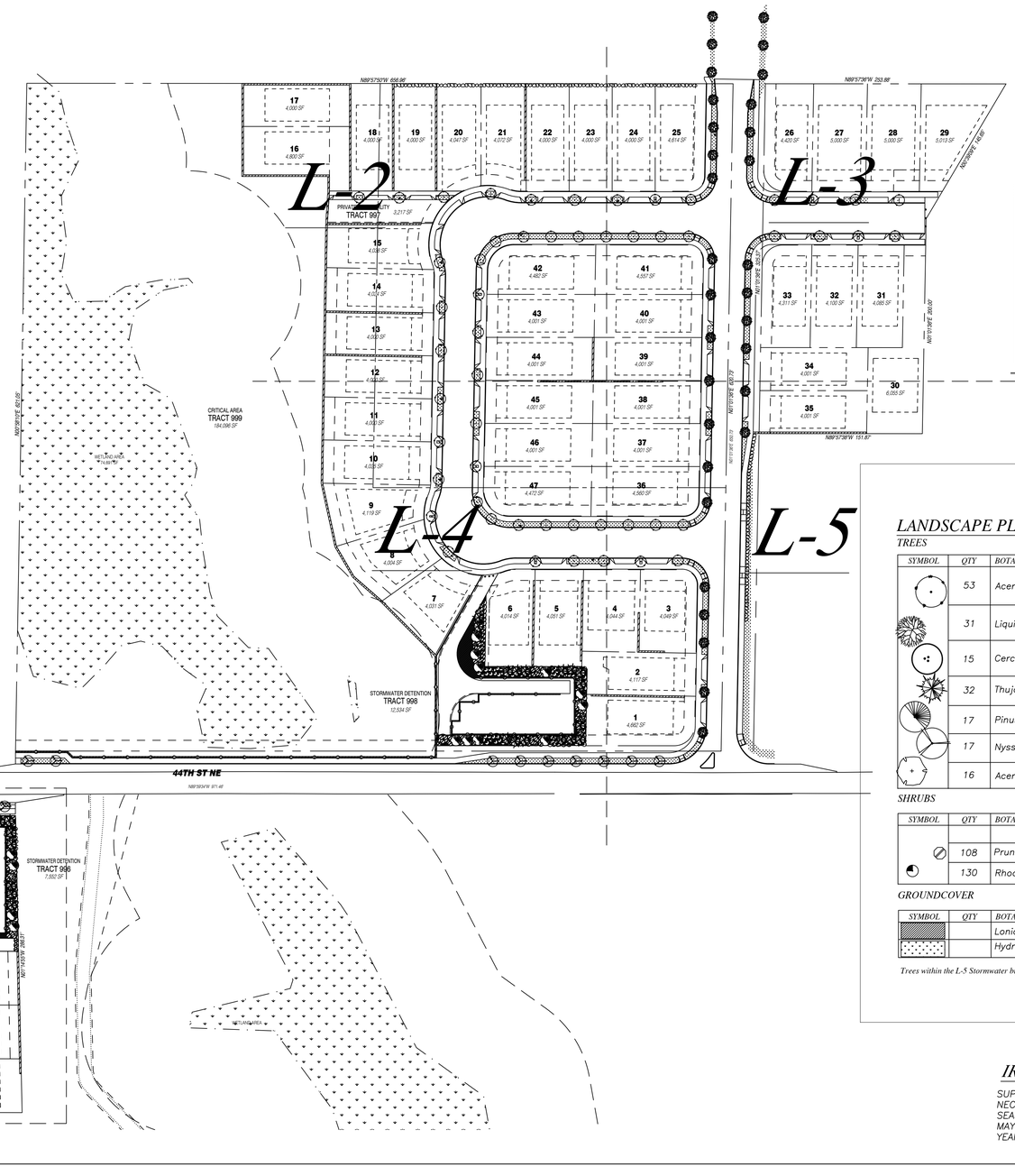
(3) All landscaped areas must be kept free of debris and weeds.

(4) Plant material must not interfere with public utilities, restrict pedestrian or vehicular access, or constitute a traffic hazard.

(5) Planted areas next to pedestrian walkways and sidewalks shall be maintained or plant material chosen to maintain a clear zone between three and eight feet from ground level.

(6) The owners, their agents and assigns are responsible for providing, protecting, and maintaining all landscaping material in a healthy and growing condition, replacing it when necessary, and keeping it free of refuse and debris.

(7) All fencing, walls and other features used for screening purposes shall be kept free of litter, debris, and weeds. (Ord. 2852 § 10 (Exh. A), 2011).


L-2
L-3
L-4
L-5
L-6
TRACT 997
CRITICAL AREA TRACT 999
STORMWATER DETENTION TRACT 998
44TH ST NE
N89°57'50"W 656.96'
N89°57'36"W 253.88'
N89°57'36"W 131.67'
N89°58'24"W 313.06'
N01°19'49"E 285.59'
N01°19'49"E 300.00'
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IRRIGATION ASSESSMENT

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Trees within the L-5 Stormwater buffer include 50 evergreens and 15 deciduous totaling 77% evergreens

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(IN FEET)
1"=20'

DATE		REVISION	BY
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Williams Point Plat

Keystone Land LLC

LANDSCAPE PLAN

APPLICANT:
Solid Ground Engineering

DATE:
4.30.24

PJLA JOB NO.:

DRAWN BY: PJ

CHECKED BY: PJ

LANDSCAPE PLAN

SHEET
L-2
OF 6

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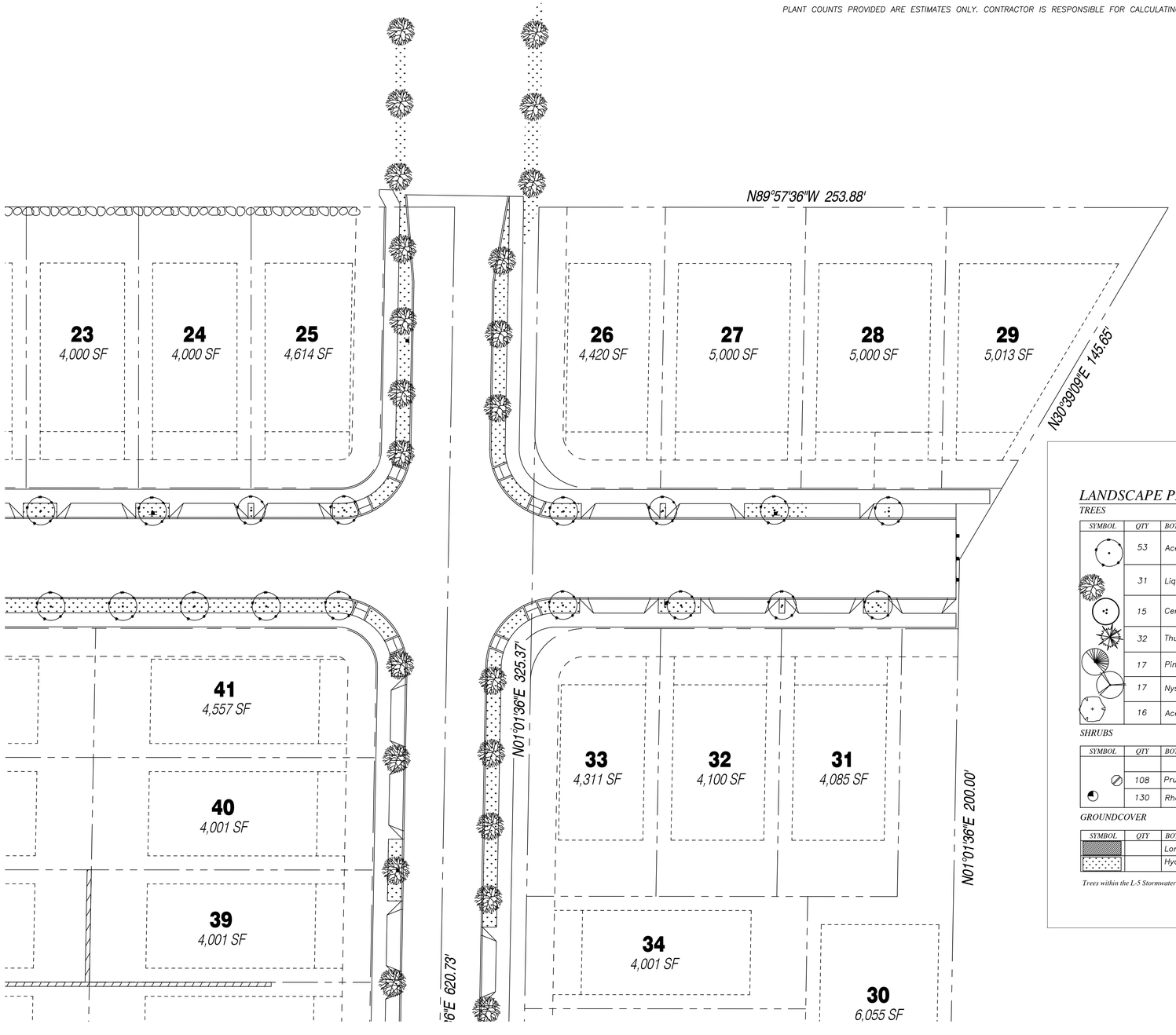
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Keystone Land LLC

LANDSCAPE PLAN

APPLICANT:
Solid Ground Engineering

DATE:
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LANDSCAPE PLAN

SHEET
L-3
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DATE:
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LANDSCAPE PLAN

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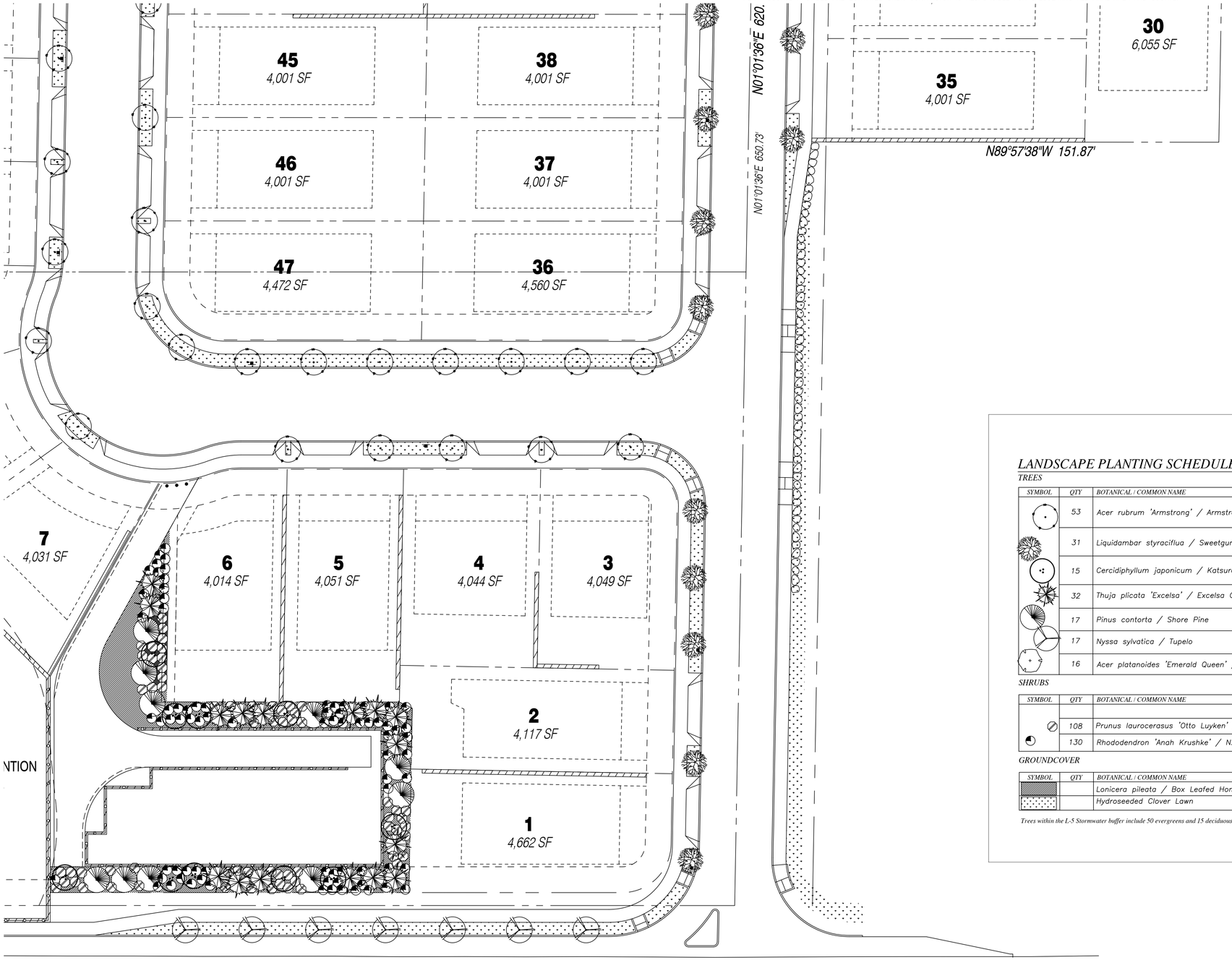
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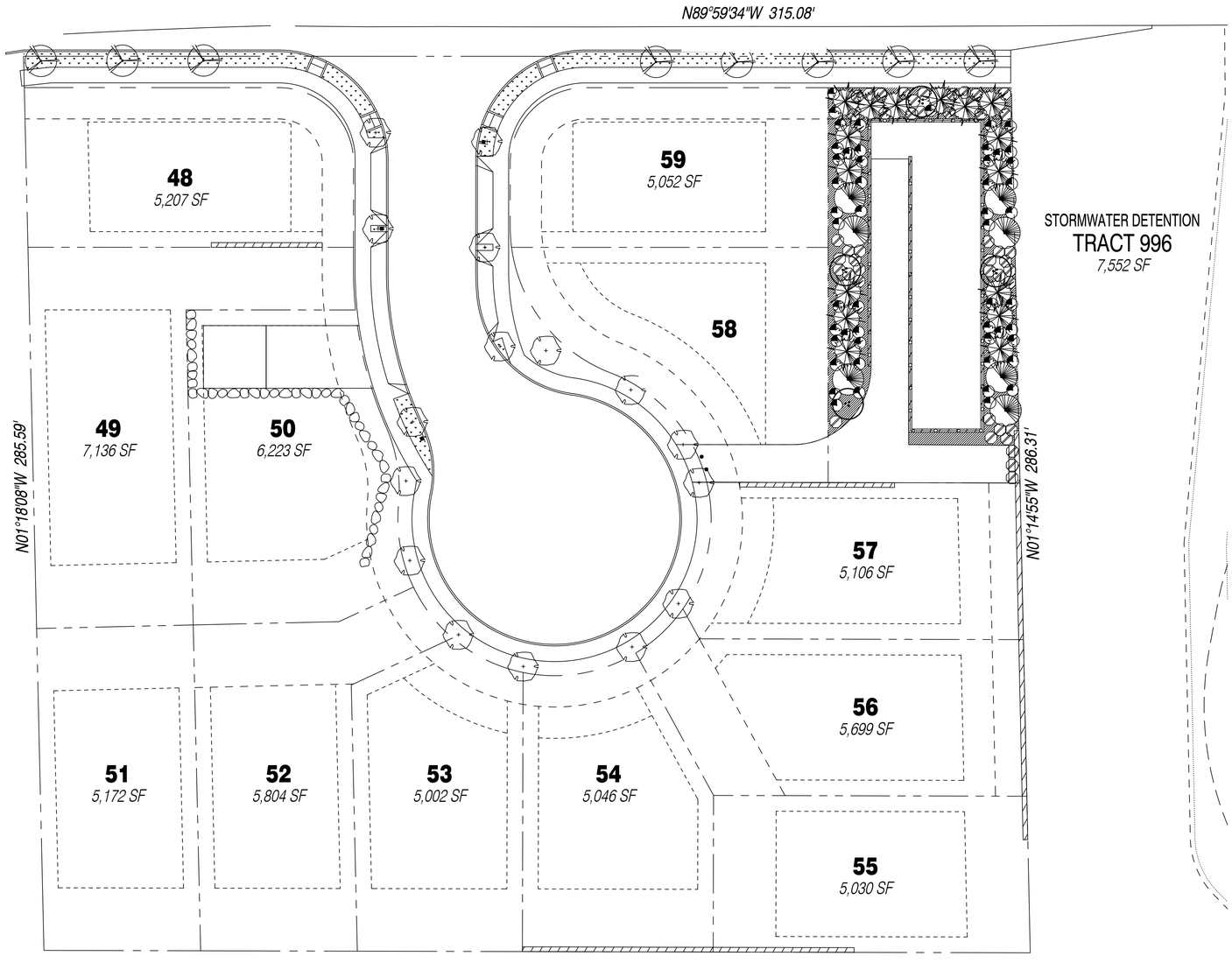
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DURING THE WARRANTY PERIOD, THE LANDSCAPE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT DEATH CAUSED BY UNUSUAL CLIMATIC CONDITIONS, VANDALISM, THEFT, FIRE, OR POOR MAINTENANCE PRACTICES. THE LANDSCAPE ARCHITECT SHALL HAVE SOLE AUTHORITY TO DETERMINE THE CAUSE OF DEATH.

PLANT COUNTS PROVIDED ARE ESTIMATES ONLY. CONTRACTOR IS RESPONSIBLE FOR CALCULATING ALL FINAL AREA AND COUNTS.





LANDSCAPE PLANTING SCHEDULE

TREES

SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
	53	Acer rubrum 'Armstrong' / Armstrong Red Maple	1 ¾" CAL.	B&B
	31	Liquidambar styraciflua / Sweetgum	1 ¾" CAL.	B&B
	15	Cercidiphyllum japonicum / Katsura Tree	6' MIN. HT.	B&B
	32	Thuja plicata 'Excelsa' / Excelsa Cedar	6' MIN. HT.	B&B
	17	Pinus contorta / Shore Pine	6' MIN. HT.	B&B
	17	Nyssa sylvatica / Tupelo	1 ¾" CAL.	B&B
	16	Acer platanoides 'Emerald Queen' / Norway Maple	1 ¾" CAL.	B&B

SHRUBS

SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
	108	Prunus laurocerasus 'Otto Luyken' / Otto Luyken Laurel	21" MIN. HT.	Container Grown
	130	Rhododendron 'Anah Krushke' / N.C.N.	21" MIN. HT.	Container Grown

GROUNDCOVER

SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	CONDITION
		Lonicera pileata / Box Leafed Honeysuckle	1 gallon	30" On Center
		Hydroseeded Clover Lawn		

Trees within the L-5 Stormwater buffer include 50 evergreens and 15 deciduous totaling 77% evergreens

GRAPHIC SCALE

N

20 0 10 20 40

(IN FEET)
1"=20'

DATE		REVISION	BY
2.22.24	1	City Comments	PJ

Paul Jay
Landscape Architect
1115 Bridge Road
Eastham, MA 02642
p. 360.659.8159
c. 425.210.1986
e. pauljayla@gmail.com

State of Washington registered Landscape Architect

Paul Jay
certificate no. 566

Williams Point Plat

Keystone Land LLC

LANDSCAPE PLAN

APPLICANT:
Solid Ground Engineering

DATE:
4.30.24

PJLA JOB NO.:

DRAWN BY: PJ

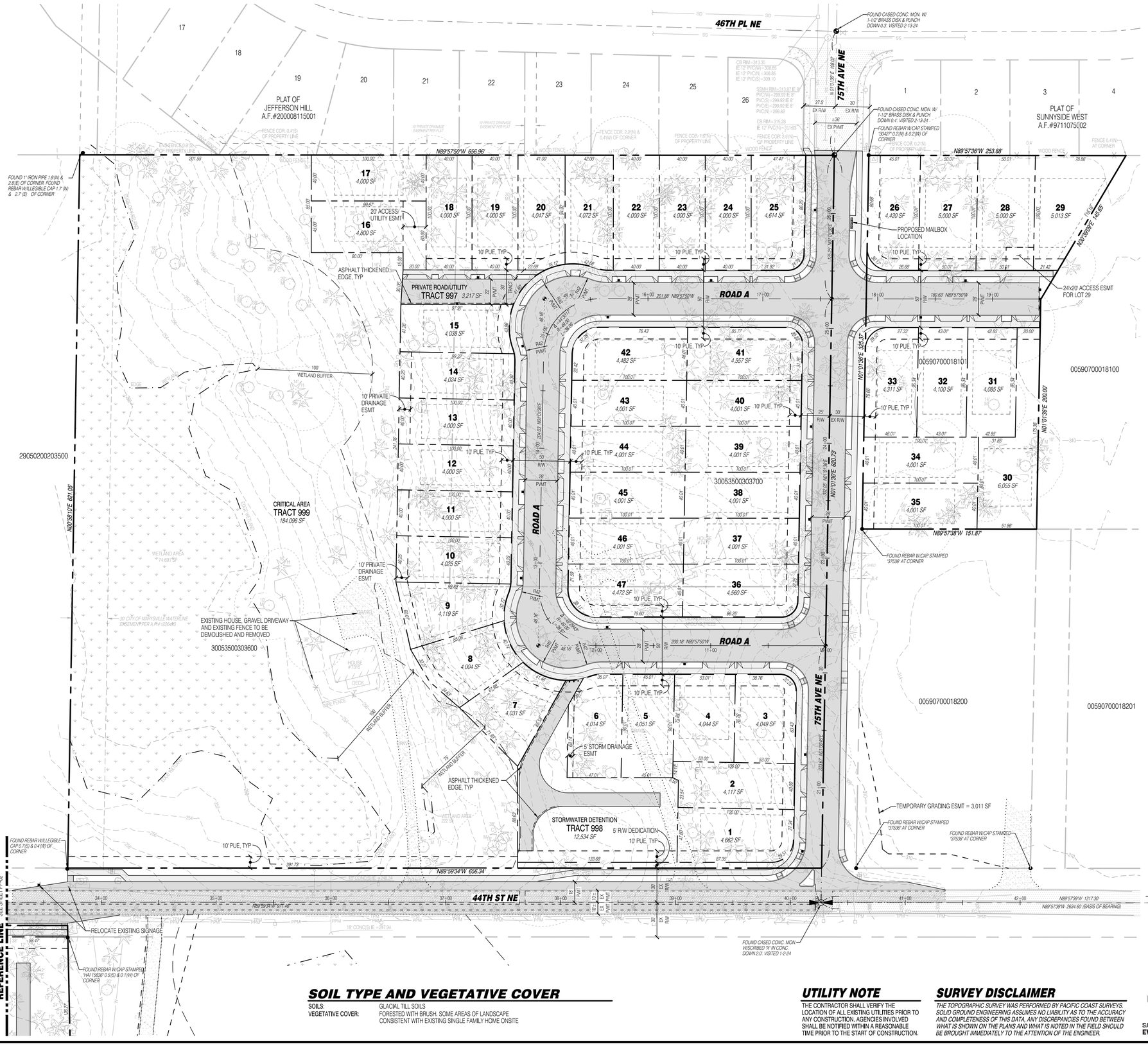
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LANDSCAPE PLAN

SHEET
L-6
OF 6

Apr 30, 2024 - 11:38am Paul E:\Shr\Data\Company\Projects\2024 Cape Cod\Williams Point\Plans\LP4.30.24.dwg Layout Name: L-6

NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON



LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT

PROJECT INFORMATION

TAX PARCELS:	30053500303600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

DENSITY CALCULATIONS

ZONE (DENSITY):	R-6.5
GROSS AREA:	570,000 SF (13.09 AC)
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ALLOWABLE DENSITY:	10.47 x 6.5 DU/AC = 68 LOTS
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SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

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THOMAS P. ARBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE	#

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY PLAT MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

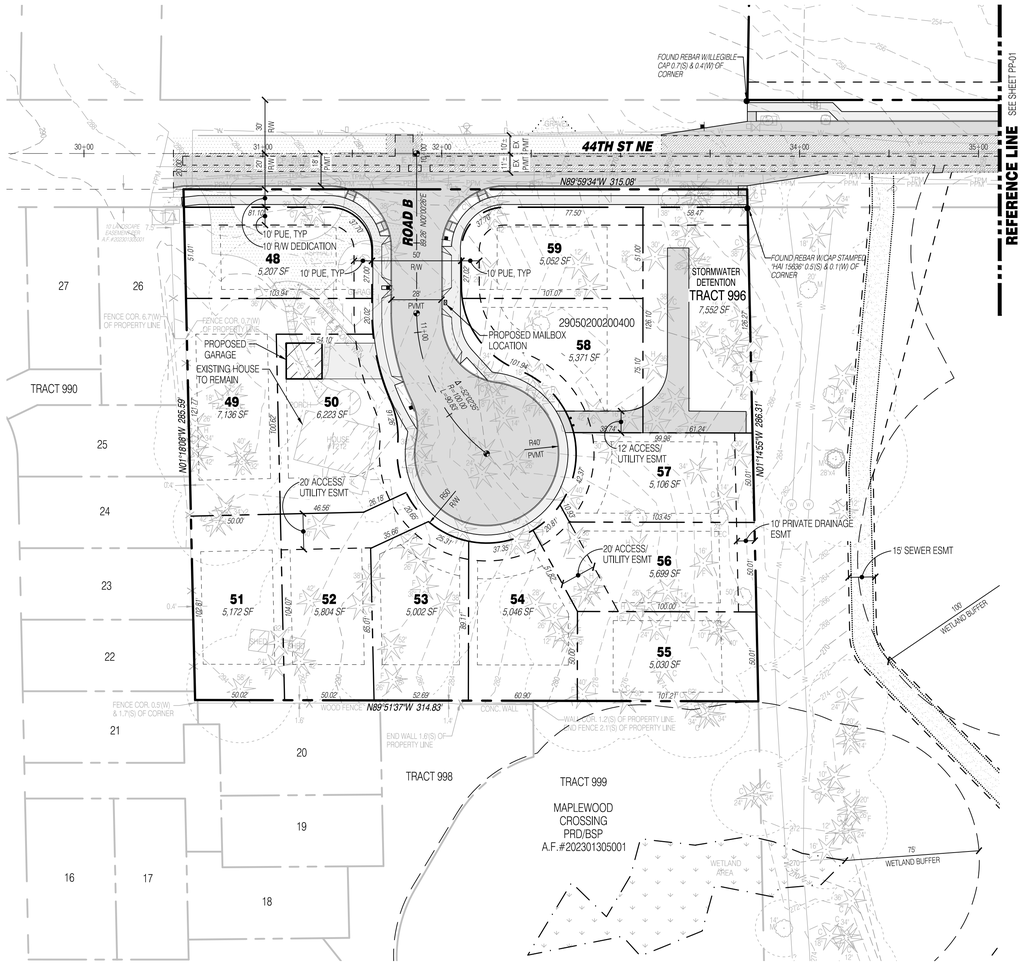
MARYSVILLE, WASHINGTON

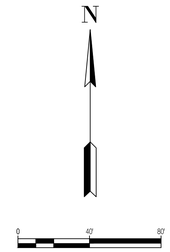
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JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

PP-01
4 OF 14

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Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY PLAT MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

PP-02

5 OF 14

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WILLIAMS POINTE
PRELIMINARY PLANS
MARYSVILLE, WA

LEGEND AND ABBREVIATIONS

EXISTING SYMBOLS	DESCRIPTION
●	SET 1/2" X 24" REBAR W/CAP "PCS 37536"
○	EXISTING CORNER MONUMENT AS NOTED
	QUARTER SECTION TIE
	SECTION TIE
	FOUND MONUMENT AS NOTED
	BLOW-OFF VALVE
	CATCH BASIN
	FIRE HYDRANT
	GUY ANCHOR
H.B.	HOSE BIB
	INVERT/CULVERT
	MAILBOX
P.M.	POWER METER
	POWER TRANSFORMER
	SANITARY SEWER MANHOLE
	SIGN POST
	STORM DRAIN MANHOLE
	TELEVISION RISER
	UTILITY/ POLE
	WATER MANHOLE
	WATER METER
	WATER VALVE
	WETLAND FLAG
	YARD LIGHT
	CONIFEROUS TREE
	DECIDUOUS TREE

ABBREVIATIONS	
CPP	CORRUGATED PLASTIC PIPE
IE	INVERT ELEVATION
INV	INVERT ELEVATION
OHP	OVERHEAD POWER LINE
TPM	TELEPHONE PAINT MARK
C	CEDAR
F	FIR
H	HEMLOCK
M	MAPLE

PROPOSED WATER SYMBOLS

SYMBOL	DESCRIPTION
	WATER CAP
	CONCRETE BLOCKING
	11.25° BEND
	22.5° BEND
	45° BEND
	90° BEND
	VALVE
	HYDRANT ASSEMBLY
	BLOW-OFF VALVE
	REDUCER
	AIR-VAC ASSEMBLY
	WATER METER
	WATER PIPE

PROPOSED SURVEY SYMBOLS

SYMBOL	DESCRIPTION
	SURVEY MONUMENT IN PROPOSED ROAD

PROPOSED STORM SYMBOLS

SYMBOL	DESCRIPTION
	SD CAP
	TYPE 1 CATCH BASIN, GRATED LID
	TYPE 1 CATCH BASIN, SOLID LID
	TYPE 2 CATCH BASIN, GRATED LID
	TYPE 2 CATCH BASIN, SOLID LID
	BEEHIVE MANHOLE COVER
	SQUARE YARD DRAIN
	ROUND YARD DRAIN
	STORM CLEAN OUT
	STORM PIPE

PROPOSED SEWER SYMBOLS

SYMBOL	DESCRIPTION
	SEWER CAP
	SEWER CLEANOUT
	SEWER MANHOLE
	SEWER PIPE

CONTACT LIST

DEVELOPER:
KEYSTONE LAND, LLC
13805 SMOKEY POINT BLVD #102
MARYSVILLE, WA 98271
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CONTACT: TOM ABBOTT, PE
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EMAIL: tabbott@solidgroundpnw.com

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CONTACT: HENRY WRIGHT, PE
PHONE: (425) 449-4704
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PAUL JAY LANDSCAPE ARCHITECT
1115 BRIDGE ROAD
EASTHAM, MA 02642
CONTACT: PAUL JAY
PHONE: (425) 210-1986
EMAIL: pauljayla@gmail.com

SURVEYOR:
PACIFIC COAST SURVEYS, INC.
P.O. BOX 13619
MILL CREEK, WASHINGTON 98082
CONTACT: DARREN RIDDLE, PLS
PHONE: (425) 512-7099
FAX: (425) 357-3577
EMAIL: darren@pcsurveys.net

WETLAND BIOLOGIST:
WETLAND RESOURCES
9505 19TH AVE SE, STE 106
EVERETT, WASHINGTON 98208
CONTACT: JOHN LAUFENBURG
PHONE: (425) 337-3174
FAX: (425) 337-3045
EMAIL: john@wetlandresources.com

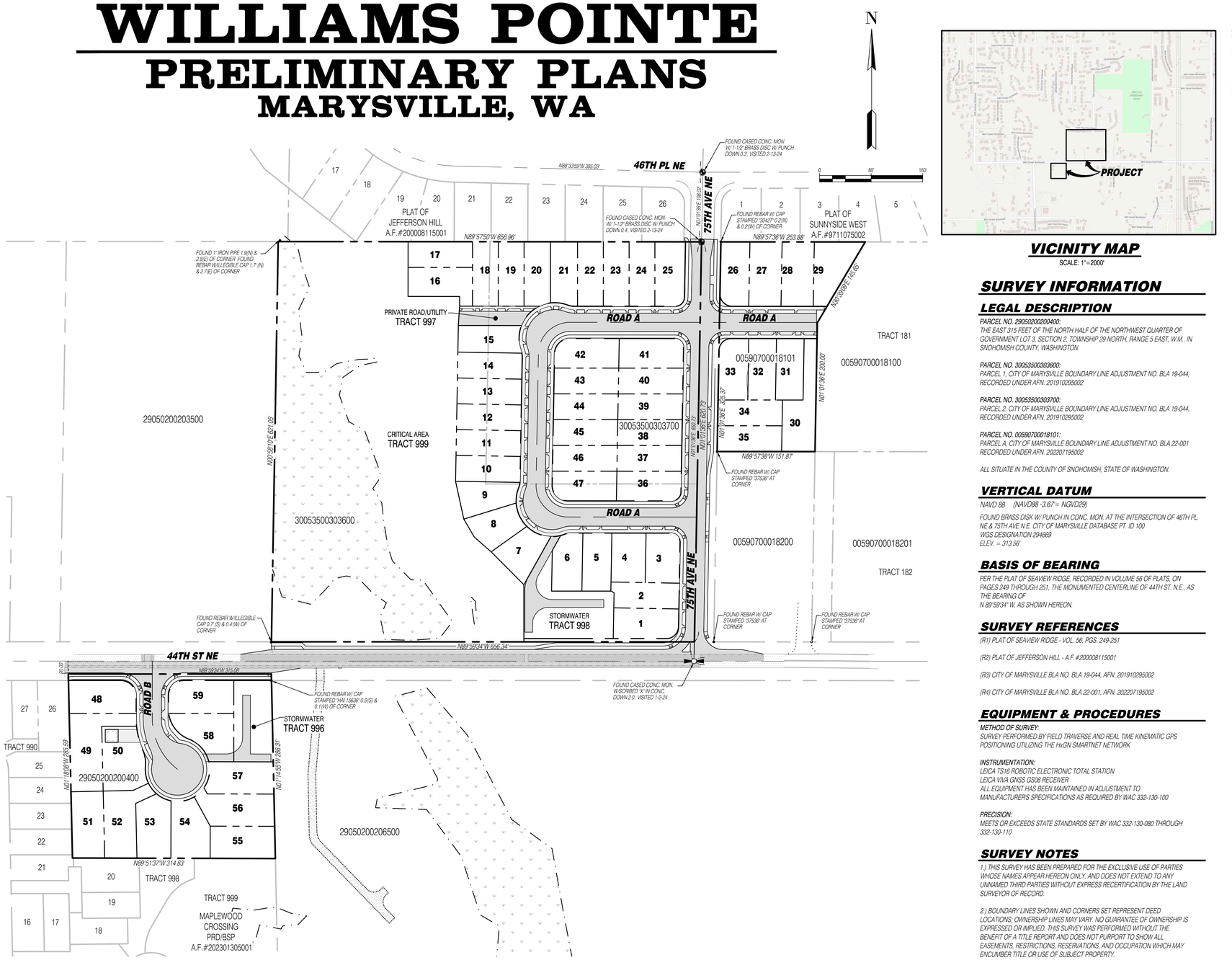
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TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

EARTHWORK QUANTITIES

STRIPPING:	10,500 CY
CUT:	40,000 CY
FILL:	35,000 CY
NET:	5,000 CY (CUT)
DISTURBED AREA:	436,728 SF (10.03 AC)

THE ABOVE QUANTITIES ARE FOR PERMITTING PURPOSES. CONTRACTOR TO VERIFY.



VICINITY MAP
SCALE: 1" = 2000'

SURVEY INFORMATION

LEGAL DESCRIPTION

PARCEL NO. 29050200200400:
THE EAST 315 FEET OF THE NORTH HALF OF THE NORTHWEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

PARCEL NO. 30053500303600:
PARCEL 1, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 30053500303700:
PARCEL 2, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 00590700018101:
PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 22-001 RECORDED UNDER AFN. 202207195002

ALL SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 (NAVD88 -3.67'= NGVD29)

FOUND BRASS DISK W/ PUNCH IN CONC. MON. AT THE INTERSECTION OF 46TH PL. NE & 75TH AVE N.E. CITY OF MARYSVILLE DATABASE PT. ID 100
WGS DESIGNATION 294669
ELEV. = 313.56'

BASIS OF BEARING

PER THE PLAT OF SEAVIEW RIDGE. RECORDED IN VOLUME 56 OF PLATS, ON PAGES 249 THROUGH 251, THE MONUMENTED CENTERLINE OF 44TH ST. N.E., AS THE BEARING OF
N 89°59'34" W, AS SHOWN HEREON.

SURVEY REFERENCES

(R1) PLAT OF SEAVIEW RIDGE - VOL. 56, PGS. 249-251

(R2) PLAT OF JEFFERSON HILL - A.F.#200008115001

(R3) CITY OF MARYSVILLE BLA NO. BLA 19-044, AFN. 201910295002

(R4) CITY OF MARYSVILLE BLA NO. BLA 22-001, AFN. 202207195002

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE AND REAL TIME KINEMATIC GPS POSITIONING UTILIZING THE HxGN SMARTNET NETWORK

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION
LEICA VIVA GNSS GS08 RECEIVER
ALL EQUIPMENT HAS BEEN MAINTAINED IN ADJUSTMENT TO MANUFACTURER'S SPECIFICATIONS AS REQUIRED BY WAC 332-130-100

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS SET BY WAC 332-130-080 THROUGH 332-130-110

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TABLE OF CONTENTS

1	COVER SHEET
2-3	EXISTING CONDITIONS MAP
4-5	PRELIMINARY PLAT MAP
6-7	PRELIMINARY ROAD AND GRADING PLAN
8-11	PRELIMINARY ROAD PROFILES
12	PRELIMINARY ROAD SECTIONS
13-14	PRELIMINARY UTILITY PLAN

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ENGINEER'S STAMP

REVISIONS

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8105 166th Ave NE
Redmond, WA 98052

COVER SHEET

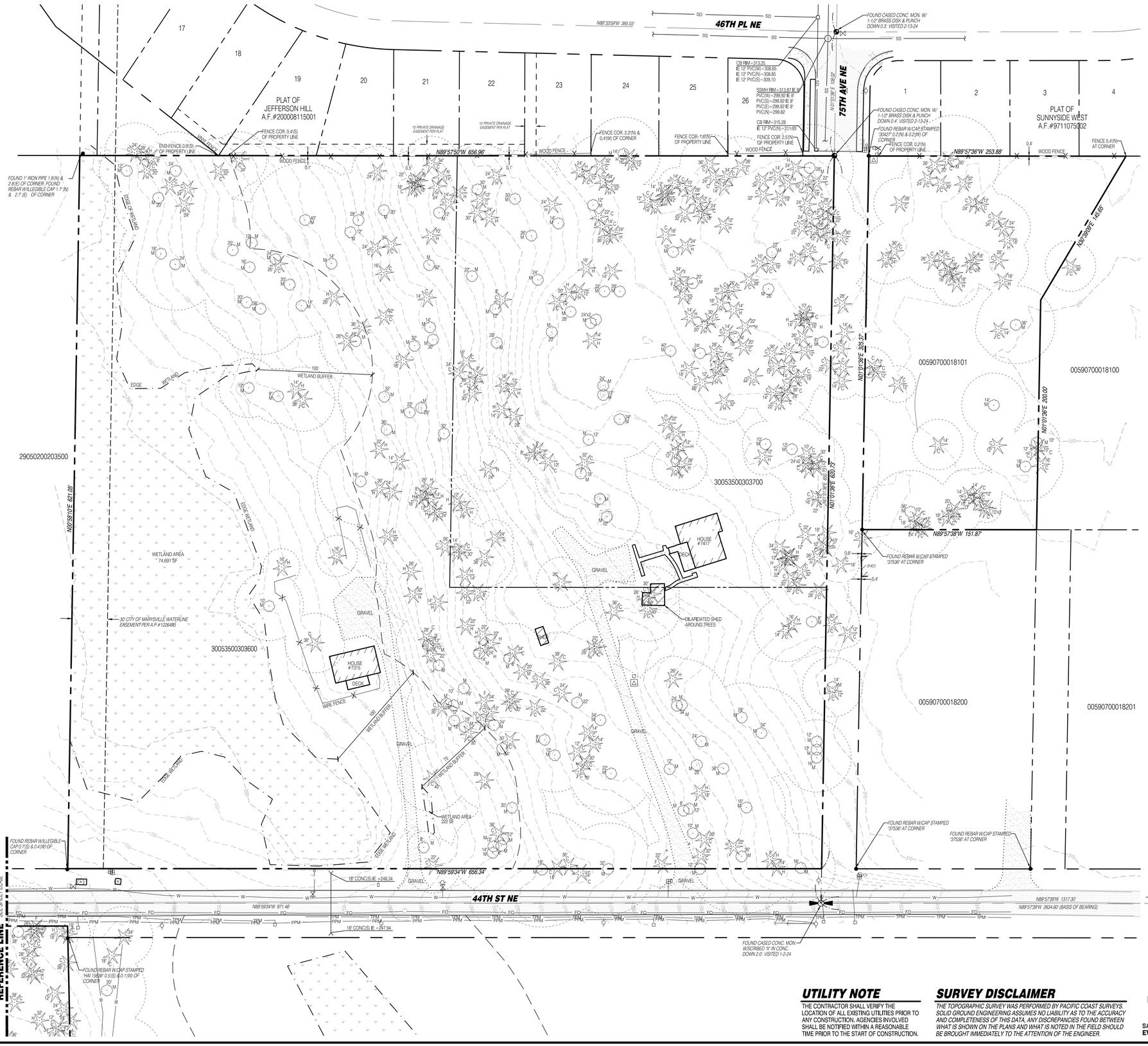
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ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

SGE
Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

EXISTING CONDITIONS MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

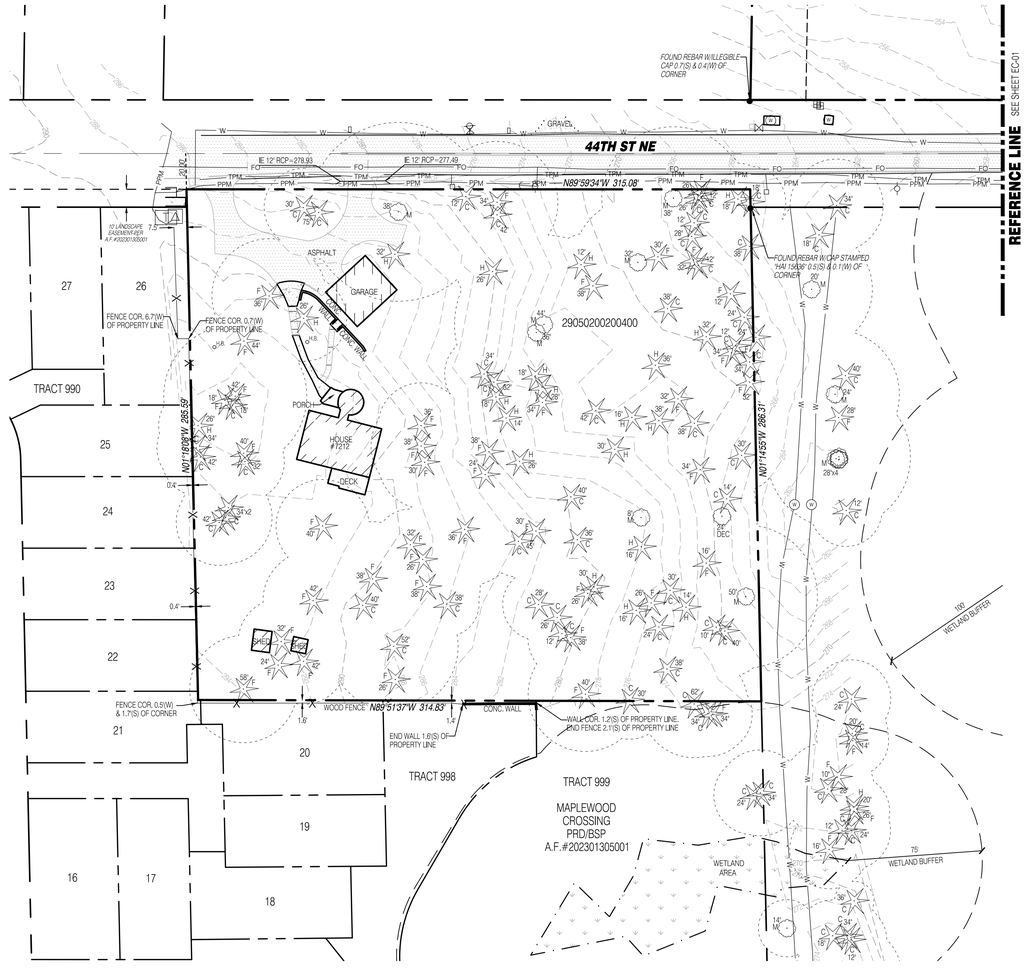
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JOB NUMBER:	23-0010

EC-01

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NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON



SURVEY INFORMATION

LEGAL DESCRIPTION

PARCEL NO. 29050200200400:
THE EAST 315 FEET OF THE NORTH HALF OF THE NORTH-WEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

PARCEL NO. 30053500303600:
PARCEL 1, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 30053500303700:
PARCEL 2, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 00590700018101:
PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 22-001 RECORDED UNDER AFN. 202207195002

ALL SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 (NAVD88 -3.67'= NGVD29)

FOUND BRASS DISK W/ PUNCH IN CONC. MON. AT THE INTERSECTION OF 46TH PL. NE & 75TH AVE N.E. CITY OF MARYSVILLE DATABASE PT. ID 100
WGS DESIGNATION 294669
ELEV. = 313.56'

BASIS OF BEARING

PER THE PLAT OF SEAVIEW RIDGE, RECORDED IN VOLUME 56 OF PLATS, ON PAGES 249 THROUGH 251, THE MONUMENTED CENTERLINE OF 44TH ST. N.E., AS THE BEARING OF
N 89°59'34" W, AS SHOWN HEREON.

SURVEY REFERENCES

(R1) PLAT OF SEAVIEW RIDGE - VOL. 56, PGS. 249-251

(R2) PLAT OF JEFFERSON HILL - A.F.#200008115001

(R3) CITY OF MARYSVILLE BLA NO. BLA 19-044, AFN. 201910295002

(R4) CITY OF MARYSVILLE BLA NO. BLA 22-001, AFN. 202207195002

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE AND REAL TIME KINEMATIC GPS POSITIONING UTILIZING THE HxGN SMARTNET NETWORK

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION
LEICA VIVA GNSS GS08 RECEIVER
ALL EQUIPMENT HAS BEEN MAINTAINED IN ADJUSTMENT TO MANUFACTURER'S SPECIFICATIONS AS REQUIRED BY WAC 332-130-100

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS SET BY WAC 332-130-080 THROUGH 332-130-110

SURVEY NOTES

1.) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR OF RECORD.

2.) BOUNDARY LINES SHOWN AND CORNERS SET REPRESENT DEED LOCATIONS; OWNERSHIP LINES MAY VARY. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, AND OCCUPATION WHICH MAY ENCUMBER TITLE OR USE OF SUBJECT PROPERTY.

UTILITY NOTE

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811
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EVERY DIG. EVERY TIME.

THOMAS P. ABBOTT
STATE OF WASHINGTON
56921
REGISTERED
PROFESSIONAL ENGINEER

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KEYSTONE LAND, LLC

WILLIAMS POINTE

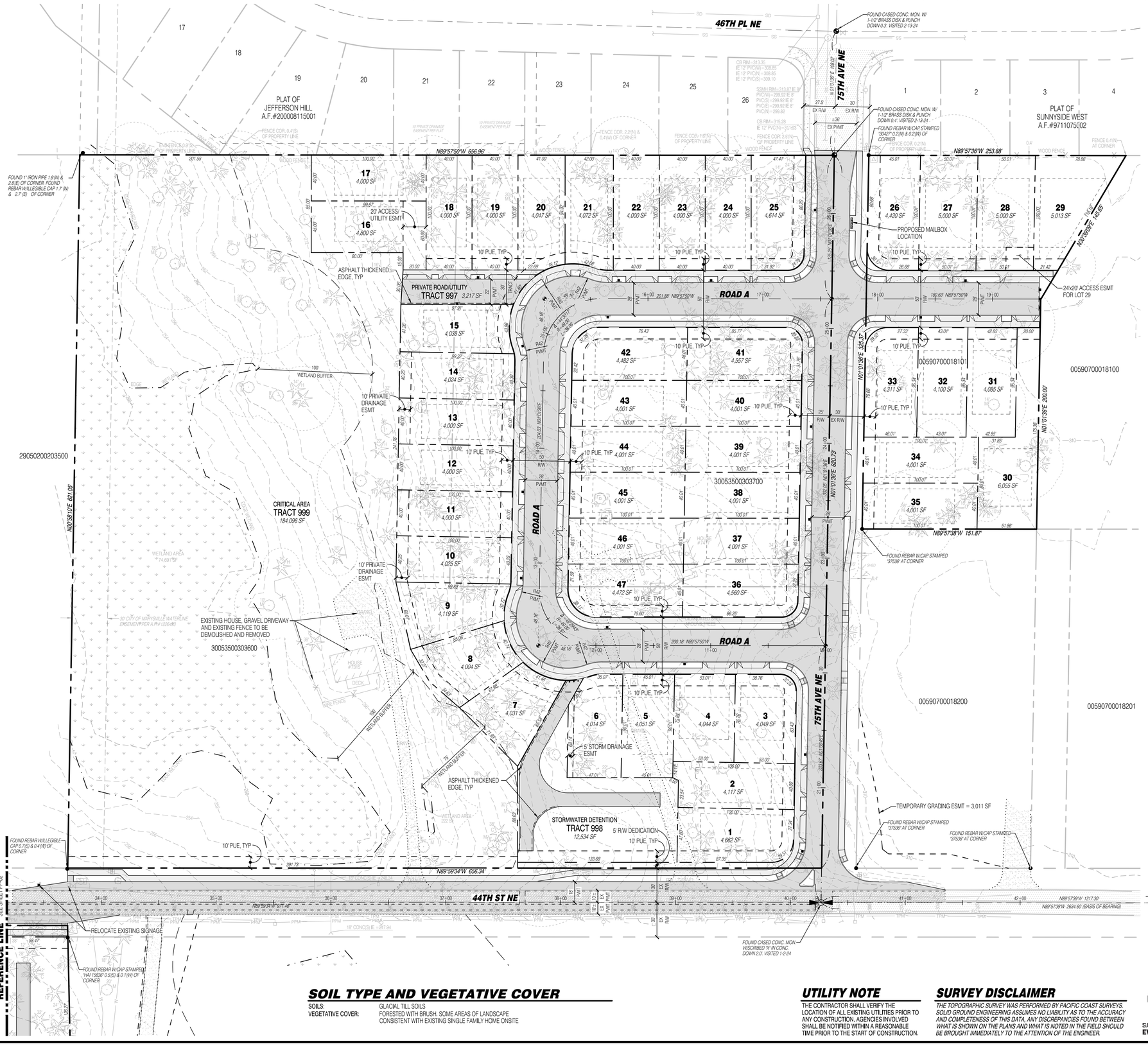
MARYSVILLE, WASHINGTON

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EC-02
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LEGEND

SYMBOLS	DESCRIPTION
•	REMOVABLE BOLLARD
◂	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT

PROJECT INFORMATION

TAX PARCELS:	30053500303600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

DENSITY CALCULATIONS

ZONE (DENSITY):	R-6.5
GROSS AREA:	570,000 SF (13.09 AC)
FLAT 20% DEDUCTION:	114,000 SF (2.62 AC)
NET AREA:	456,000 SF (10.47 AC)
ALLOWABLE DENSITY:	10.47 x 6.5 DU/AC = 68 LOTS
LOTS PROPOSED:	59 LOTS

SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

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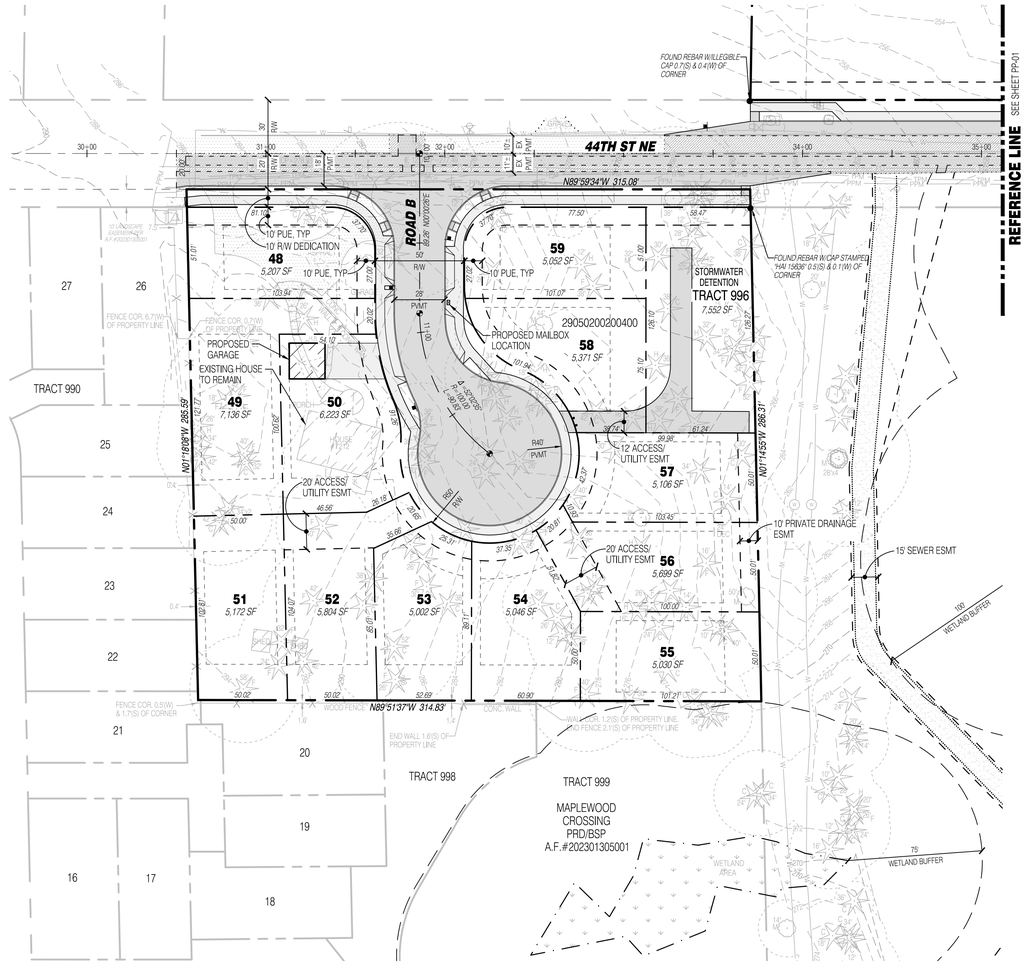
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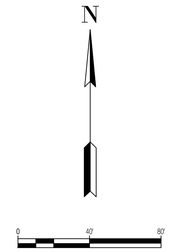
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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
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	ASPHALT GRIND AND OVERLAY
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THOMAS P. ARBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

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KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

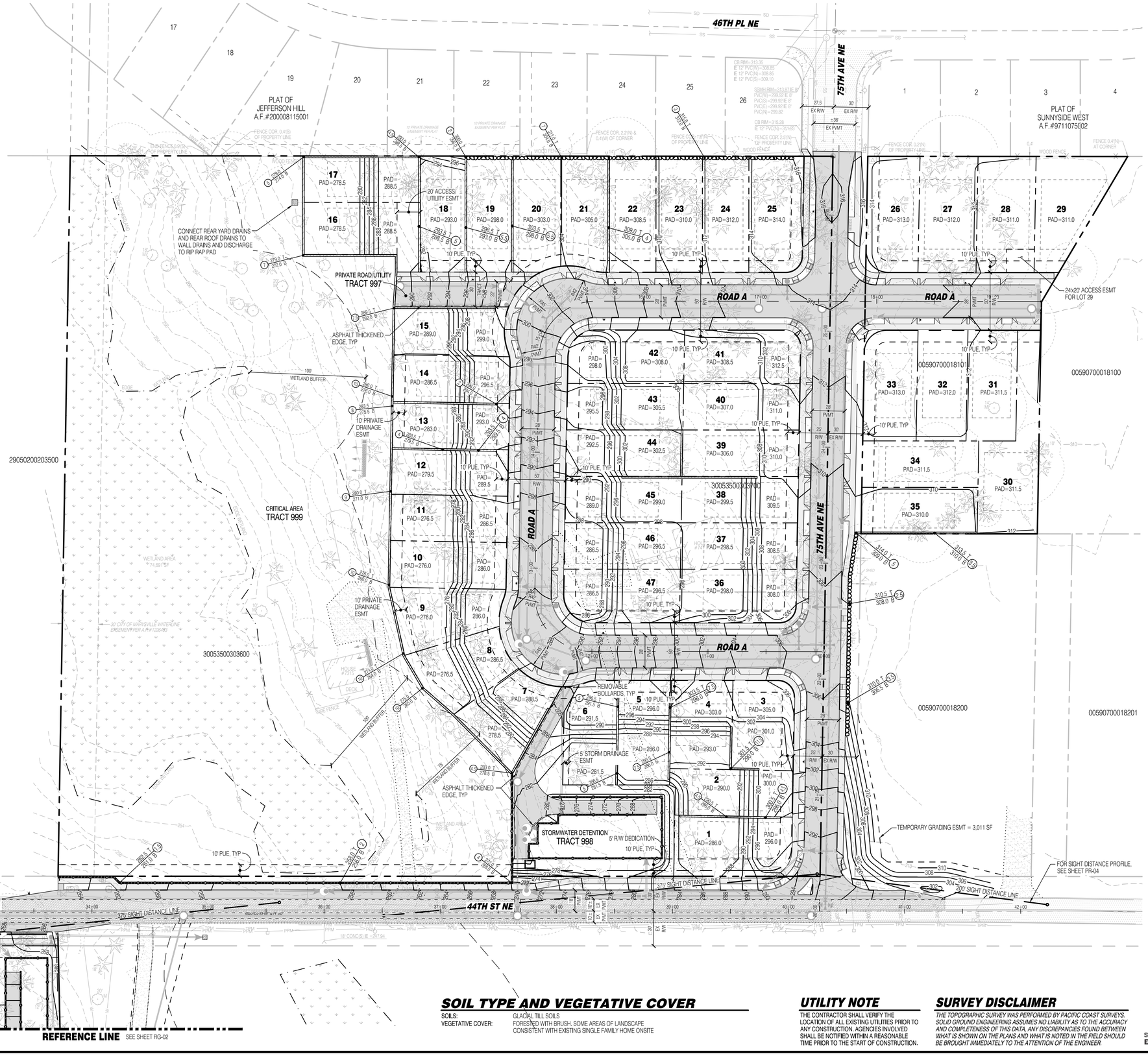
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LEGEND

SYMBOLS	DESCRIPTION
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	PROPOSED SIGNAGE
	RETAINING WALL
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	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING

ROAD AND GRADING NOTES

1. GRADING AND PLACEMENT OF WALLS MUST BE IN CONFORMANCE WITH 220.50.030 OF THE MMC.
2. ALL DISTURBED PERVIOUS AREAS TO BE UNDERLAIN WITH BMP T5.13 SOILS.
3. TRENCH RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 3-703 OF THE EDDS.
4. ALL OVERHEAD UTILITIES ARE TO BE PLACED UNDERGROUND.
5. ALL WALLS OVER 48" REQUIRE A SEPARATE BUILDING PERMIT.
6. ALL WALLS OVER 30" REQUIRE FALL PROTECTION FENCING.
7. ALL WALLS TO BE 2' OR LESS AT TERMINATION.
8. ALL PAVEMENT CUTS SHALL BE RESTORED PER APPENDIX B OF EDDS CHAPTER 3. TACK AND SEAL SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN SECTION 9-02.1(6) OF THE STANDARD SPECIFICATIONS AND SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGES OF SAWCUTS AS SPECIFIED IN SECTION 5-04 OF THE STANDARD SPECIFICATIONS.

SOIL TYPE AND VEGETATIVE COVER

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PRELIMINARY ROAD AND GRADING

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

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RG-01
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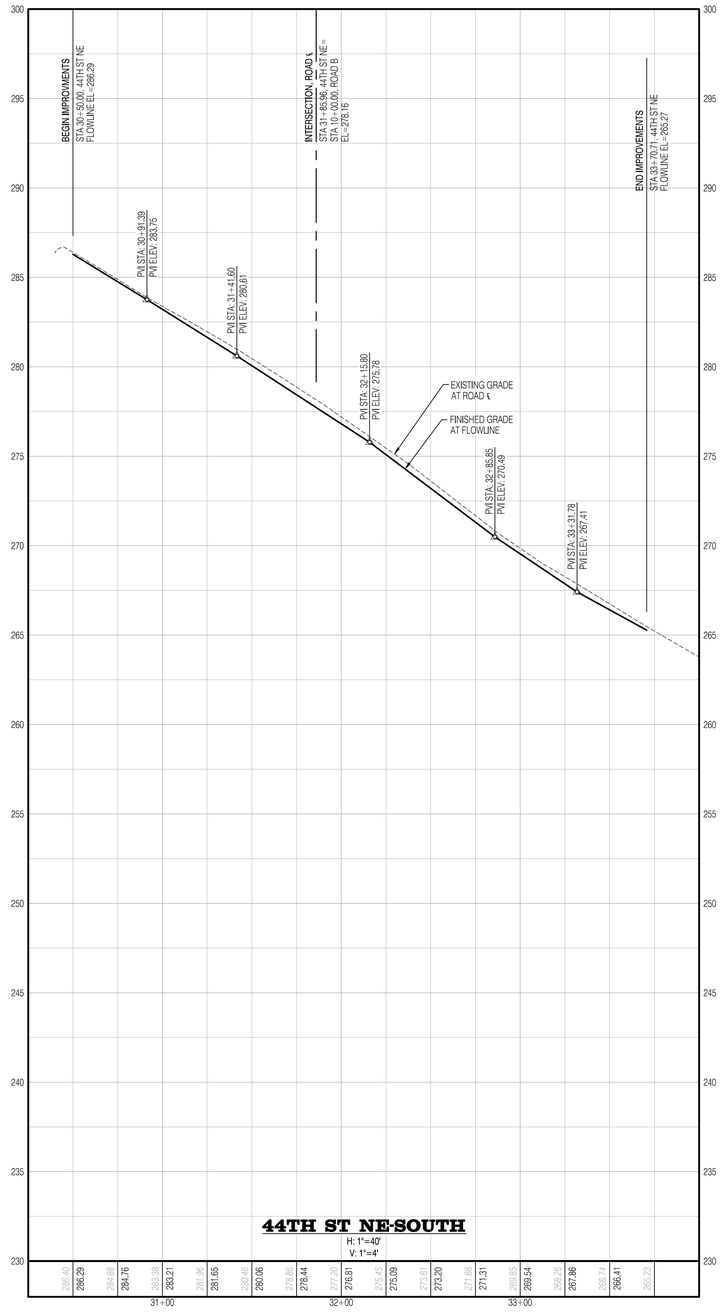
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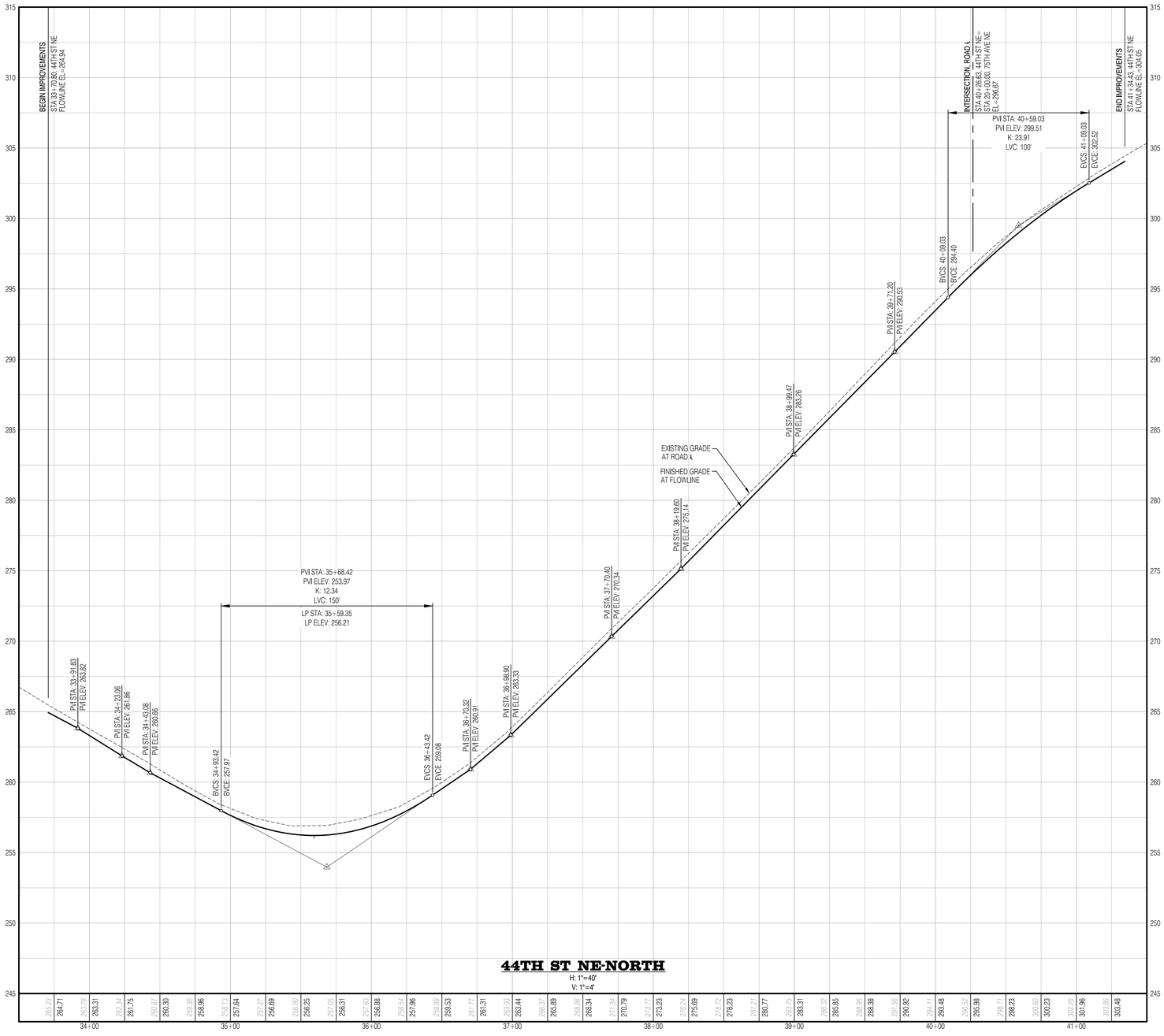
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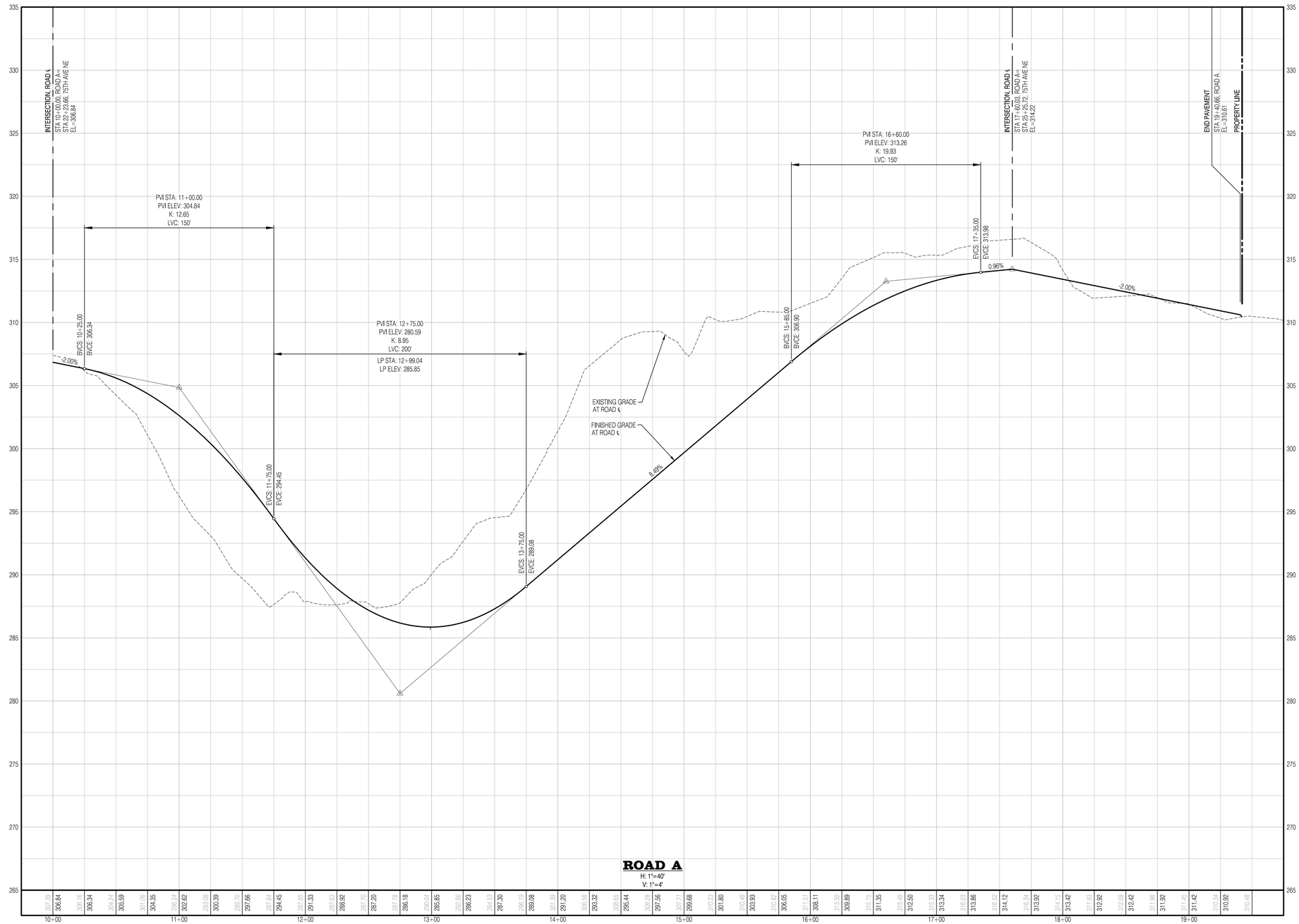
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PR-01

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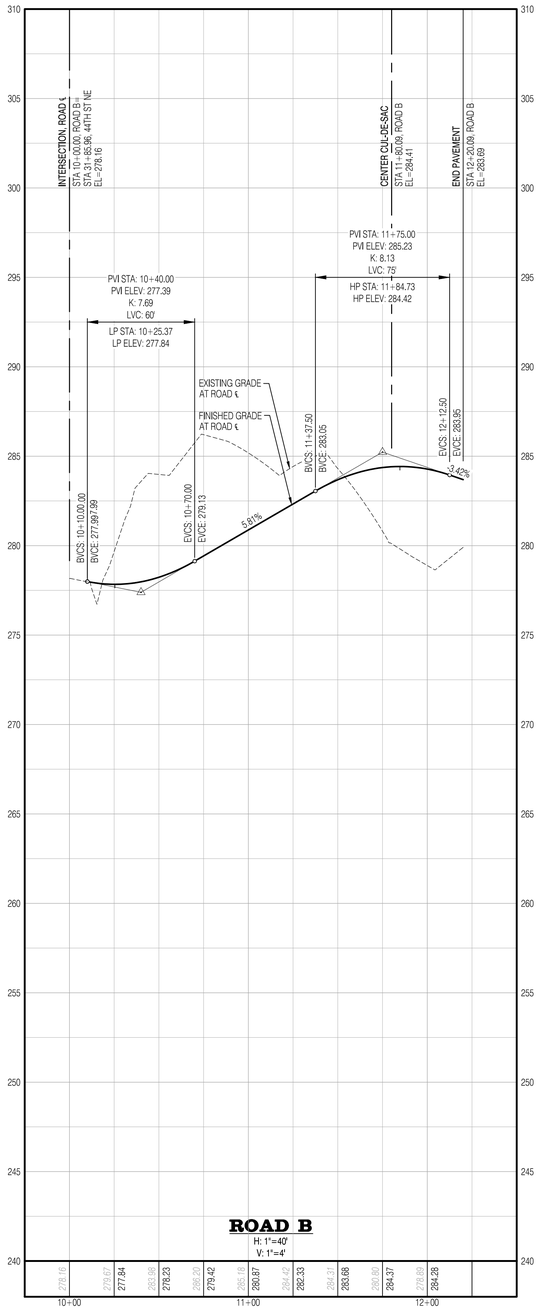
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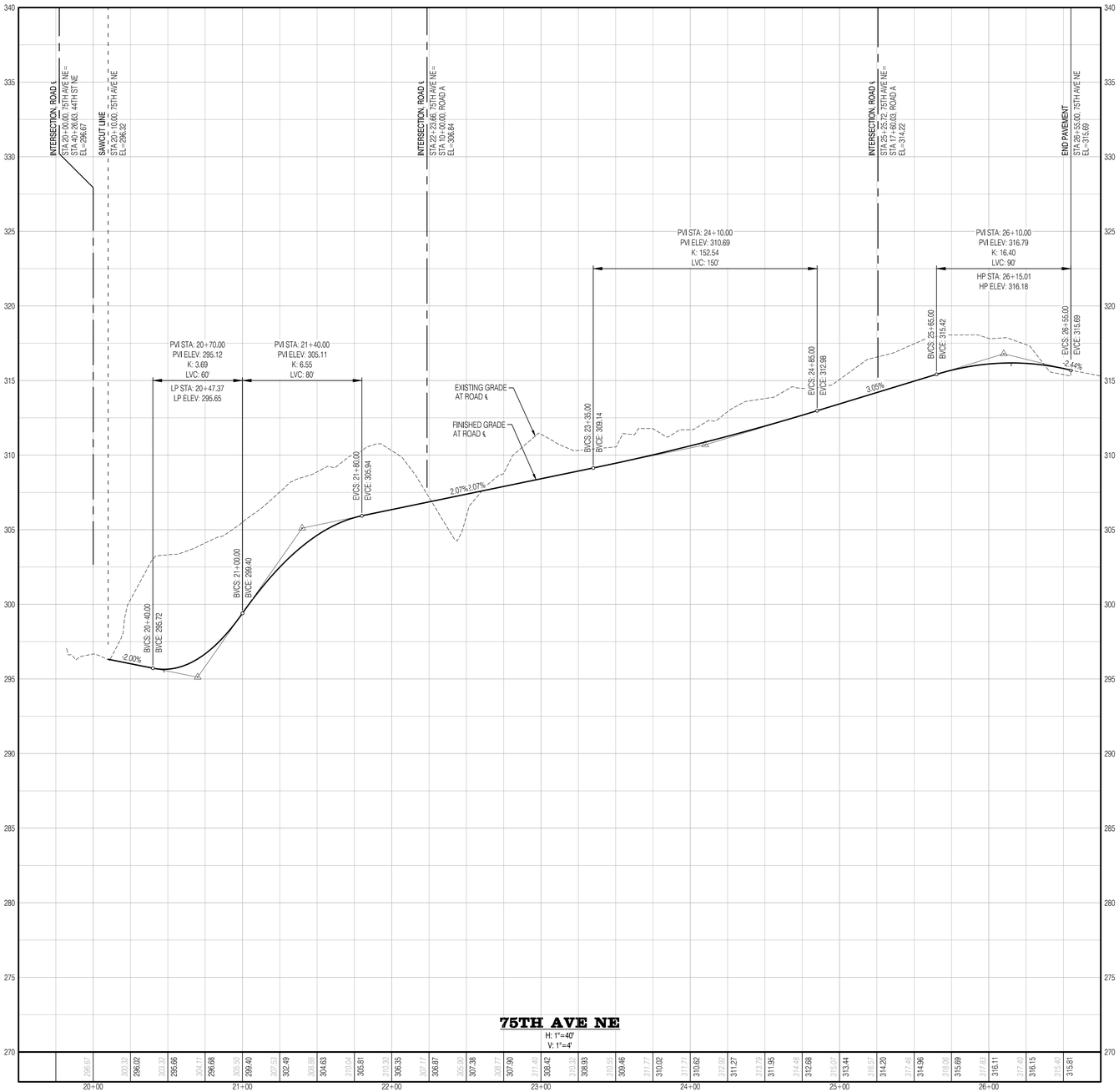
PR-02

9 OF 14

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UTILITY NOTE

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SURVEY DISCLAIMER

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811

SAFETY IS IN YOUR HANDS.
EVERY DIG. EVERY TIME.

THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY ROAD PROFILES

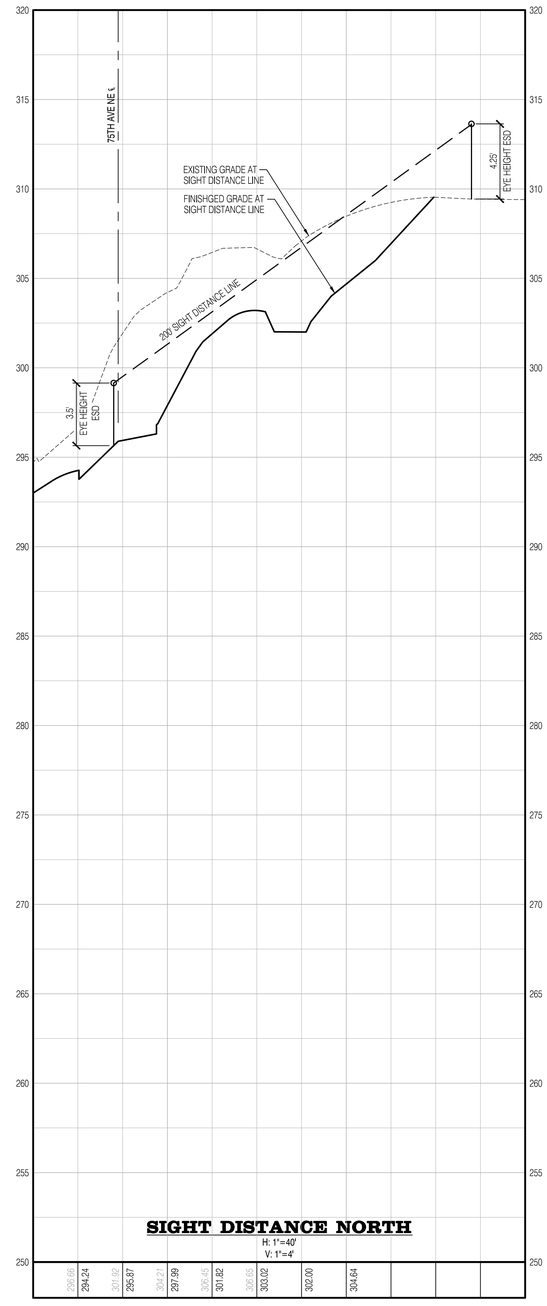
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

PR-03
10 OF 14

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SIGHT DISTANCE NORTH
H: 1"=40'
V: 1"=4'

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STATE OF WASHINGTON
56921
REGISTERED
PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

#	DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY ROAD PROFILES

KEYSTONE LAND, LLC

WILLIAMS POINTE

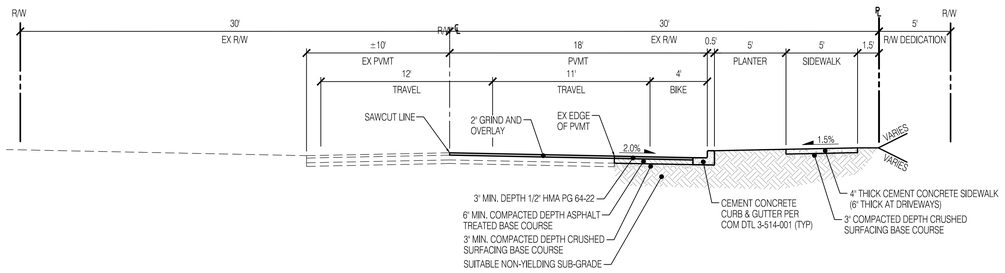
MARYSVILLE, WASHINGTON

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DATE:	3-22-24
JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

PR-04

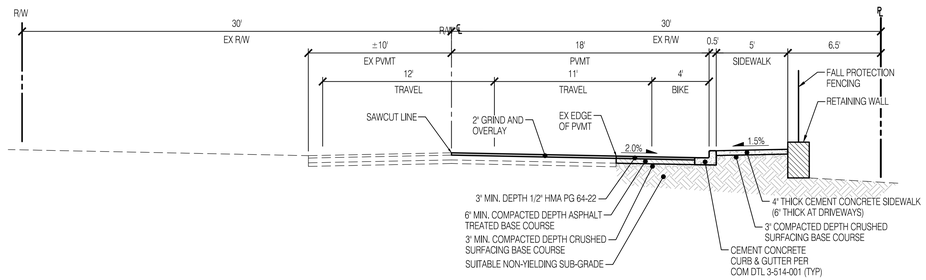
11 OF 14

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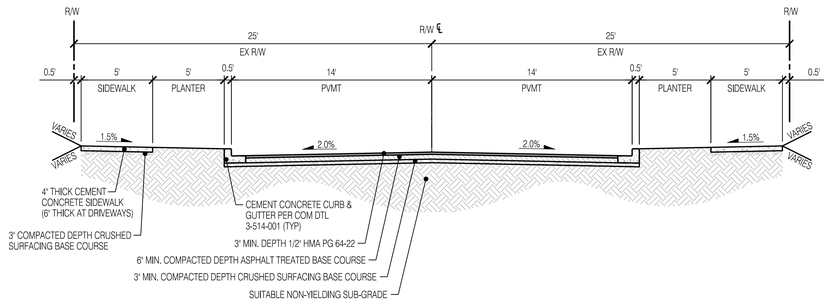
44TH ST NE ROAD SECTION STA 37+63 TO 41+34

SCALE: 1"=5'



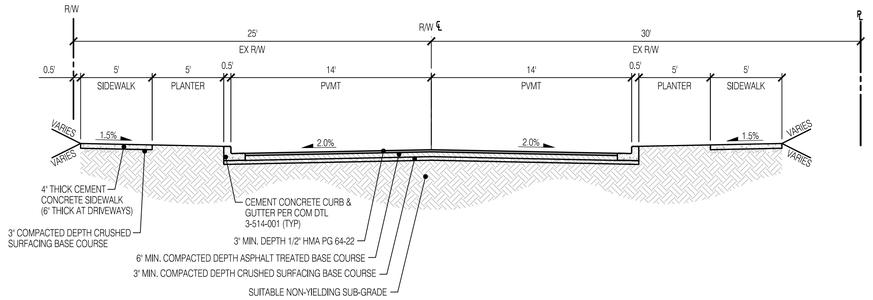
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SCALE: 1"=5'



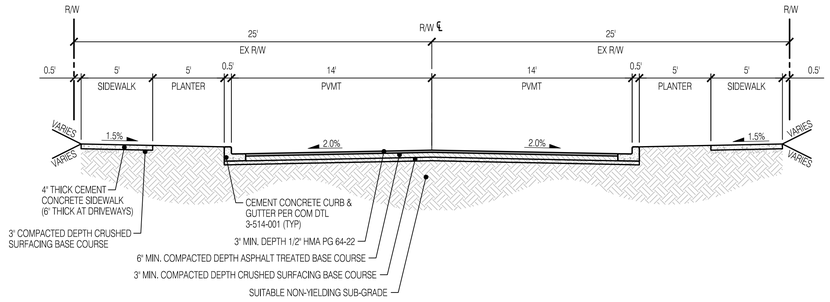
ROAD A ROAD SECTION

SCALE: 1"=5'



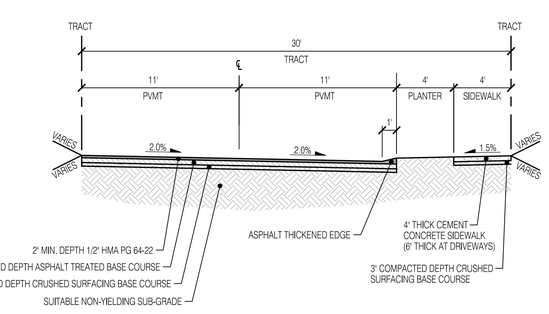
75TH RD NE ROAD SECTION

SCALE: 1"=5'



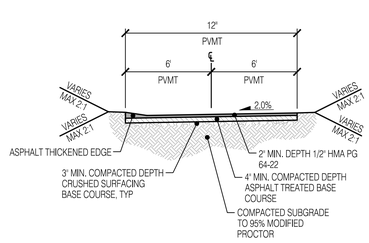
ROAD B ROAD SECTION

SCALE: 1"=5'



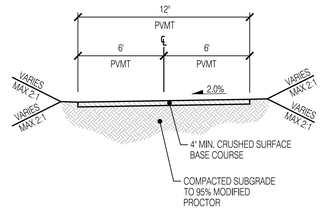
TRACT 997-PRIVATE ROAD

SCALE: 1"=5'



VAULT ACCESS - TRACT 998 AND 996

SCALE: 1"=5'



SEWER MAINTENANCE ROAD SECTION

SCALE: 1"=5'

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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S STAMP

REVISIONS

DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

ROAD SECTIONS

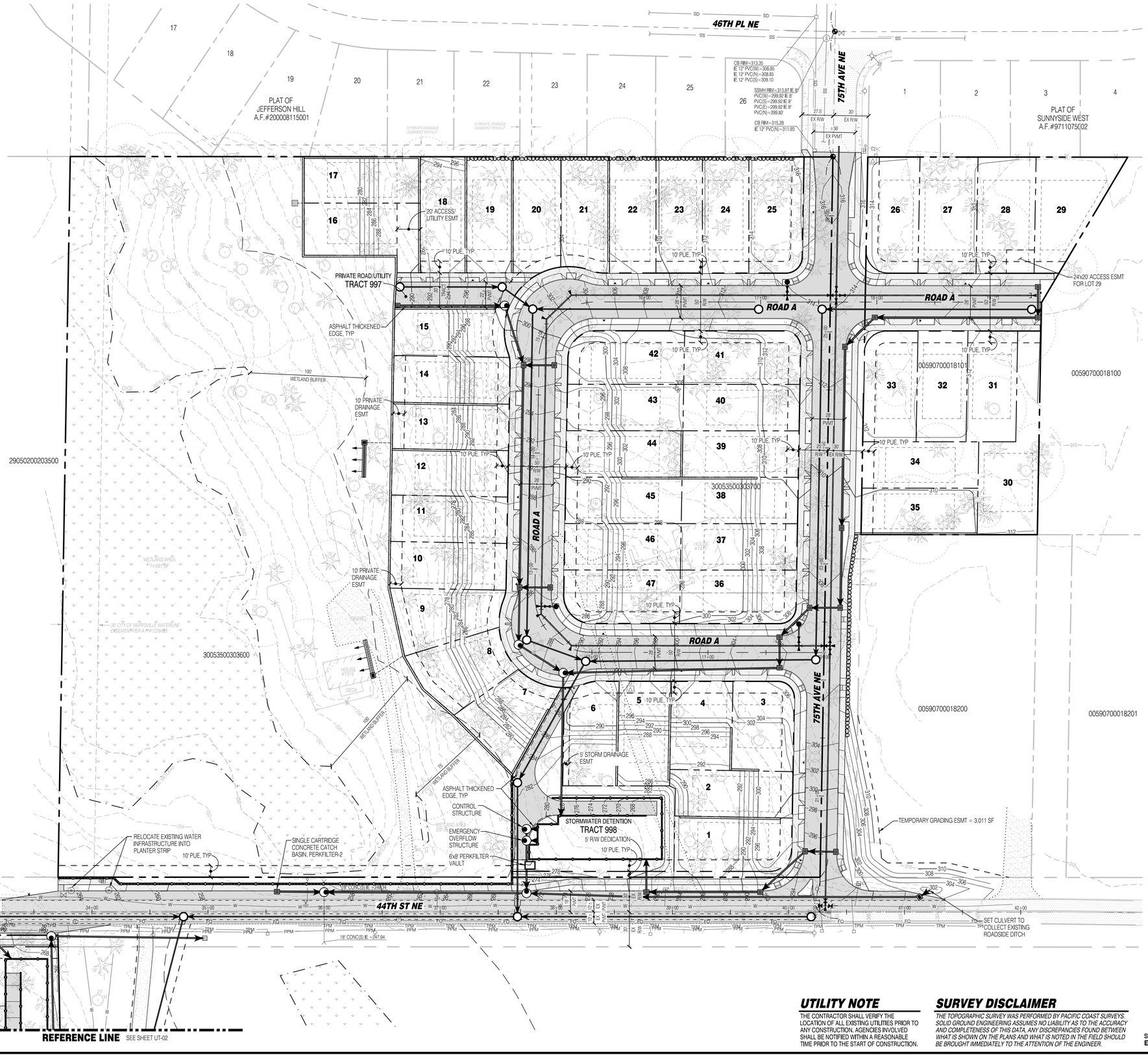
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

PR-05
12 OF 14

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NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON



LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING
	STORM MAIN PIPE
	SEWER MAIN PIPE
	WATER MAIN PIPE
	DRAIN PIPE
	FRENCH DRAIN
	FIRE HYDRANT
	SEWER MANHOLE
	SEWER CLEANOUT
	TYPE 1 CATCH BASIN W/ SOLID LID
	TYPE 1 CATCH BASIN W/ OPEN GRATE
	TYPE 2 CATCH BASIN, SOLID LID
	TYPE 2 CATCH BASIN W/ OPEN GRATE
	STORM CLEAN OUT

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DESCRIPTION	DATE

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY UTILITY PLAN

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

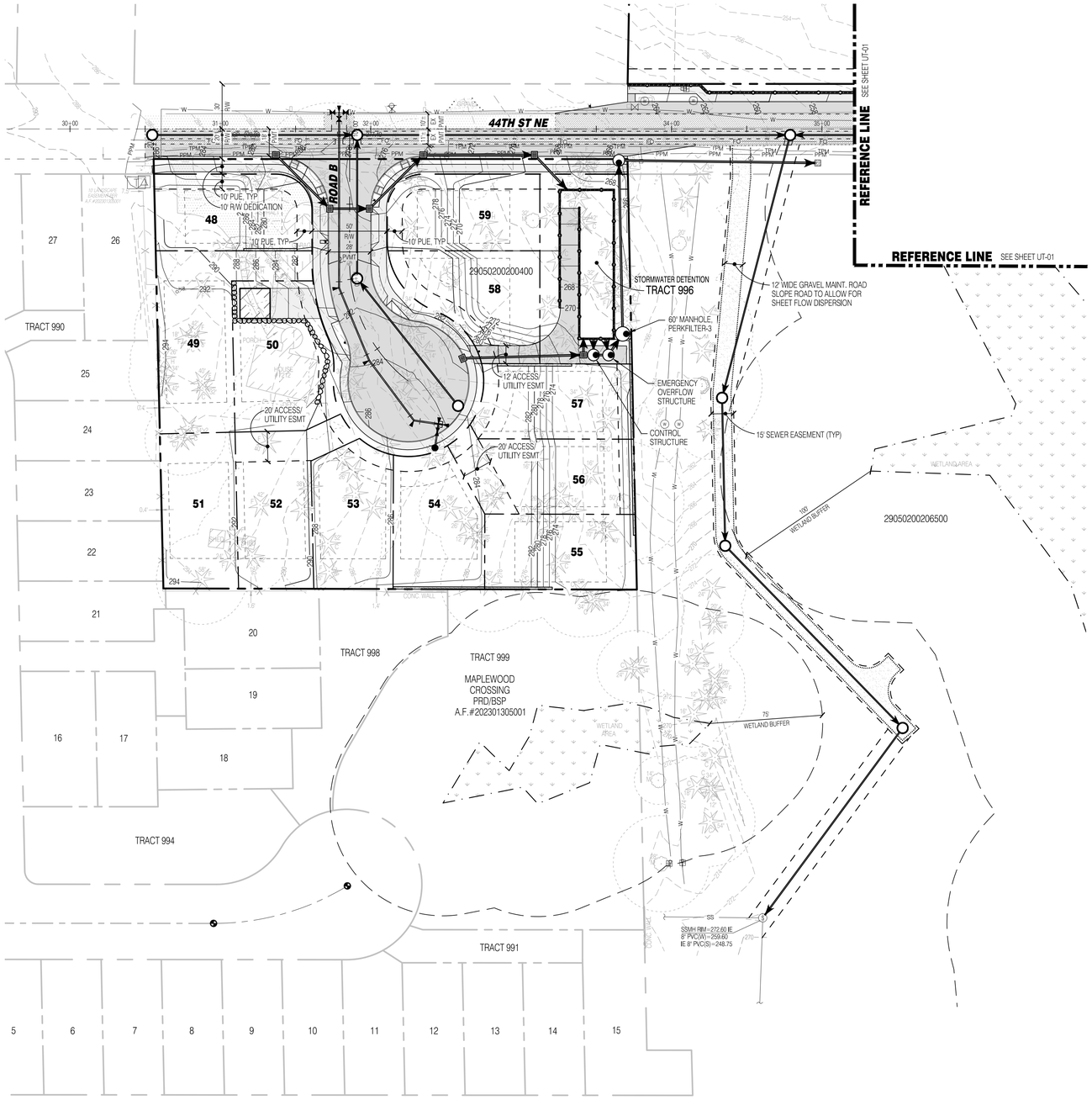
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JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

UT-01

13 OF 14

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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING
	STORM MAIN PIPE
	SEWER MAIN PIPE
	WATER MAIN PIPE
	DRAIN PIPE
	FRENCH DRAIN
	FIRE HYDRANT
	SEWER MANHOLE
	SEWER CLEANOUT
	TYPE 1 CATCH BASIN W/ SOLID LID
	TYPE 1 CATCH BASIN W/ OPEN GRATE
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Redmond, WA 98052

PRELIMINARY UTILITY PLAN

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

UT-02

14 OF 14

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COMMUNITY DEVELOPMENT DEPARTMENT
501 Delta Avenue ◆ Marysville, WA 98270
360.363.8000

May 1, 2024

Solid Ground Engineering
Attn: Tom Abbott
8105 166th Ave NE
Redmond, WA 98052

Re: **PA24-014 – Williams Pointe Subdivision – *Complete Application***
Major Subdivision

Dear Tom,

The Community Development Department has reviewed the above referenced application and determined the application ***complete*** on May 1, 2024. Any additional information/items that are needed will be requested after all affected departments and local agencies have had an opportunity to review the proposal.

If you have any questions regarding this application, please contact me at emorgan@marysvillewa.gov, or by phone at 360-363-8216.

Sincerely,

Emily Morgan

Emily Morgan
Senior Planner

e-copy: Haylie Miller, CD Director
Chris Holland, Planning Manager
Joe Long, Keystone Development

COMMUNITY DEVELOPMENT DEPARTMENT
501 Delta Avenue ◆ Marysville, WA 98270 ◆ (360) 363-8000

NOTICE OF APPLICATION

File Number: PA24-014

Project Title: Williams Pointe Subdivision

Applicant: Keystone Land, LLC

Project Contact: Tom Abbott, Solid Ground Engineering
8105 166th Ave NE, Redmond, WA 98052

Project Location: 7315 44th St NE

APN: 30053500303600, 30053500303700, 00590700018101, 29050200200400

Date of Completeness: May 1, 2024

Scan to View Project Materials

NOTICE IS HEREBY GIVEN THAT AN APPLICATION WAS MADE FOR THE FOLLOWING PROPOSAL:

The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE.

The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.

Existing Environmental Documents: SEPA Environmental Checklist; Traffic Impact Analysis; Geotechnical Report; Critical Area Report; Buffer Mitigation Planting Plan; Preliminary Drainage Report

Public Hearing: An Open Public Record Decision Hearing is required for this application; a subsequent Notice of Hearing will be published at a later date.

Public Comment Period: Written comments must be submitted to the contact person listed below by **5:00 PM on May 28, 2024**.

Document Availability: http://docs.marysvillewa.gov/htcomnet/public/?folder=74a9ab27

ANY PERSON HAS THE RIGHT TO RECEIVE NOTICE, PARTICIPATE IN ANY HEARINGS, REQUEST A COPY OF THE FINAL DECISION AND APPEAL THE DECISION AS PROVIDED BY LAW.

For project information or to become a party of record, please contact:
Emily Morgan, Senior Planner
(360) 363-8216
emorgan@marysvillewa.gov

THIS NOTICE IS NOT TO BE REMOVED CONCEALED OR DESTROYED

REQUEST FOR REVIEW

Community Development Department ◆ 501 Delta Avenue ◆ Marysville, WA 98270
Office Hours: Mon - Fri 8:00 AM - 4:30 PM ◆ Phone: (360) 363-8000

PROJECT INFORMATION					
File Number	PA24-014	**Date Sent**	5.7.2024	**Please Return by**	5.21.2024
Project Title	Williams Pointe Subdivision	**Related File Number**(s)	PA22-024; PreA24-002		
Project Description	The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE. The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.				

BACKGROUND SUMMARY									
Applicant	Joe Long, Keystone Land LLC / Tom Abbott, Solid Ground Engineering								
Location	7315 44th St NE			**APNs**	30053500303600, 30053500303700, 00590700018101, 29050200200400				
Acreage (SF)	13.09 acres			**Section**	35	**Township**	30	**Range**	05
Comprehensive Plan	Single Family High	**Zoning**	R-6.5	**Shoreline Environment**	N/A				

REVIEWING AGENCIES				
Marysville	**Local Agencies & Districts**	**State & Federal**	**County**	**Other**
☒ **Building** ☐ **Parks** ☒ **Police** ☒ **PW – Development Services** ☒ **PW – Engineering** ☒ **PW – Operations** ☒ **PW – Solid Waste** ☐ **PW – Streets** ☒ **PW – Traffic Eng.** ☒ **PW – Water Res.** ☒ **PW – WWTP**	☐ **Arlington Airport** ☐ **Arlington** (city) ☒ **Comcast** ☐ **Community Transit** ☒ **Marysville Fire District** ☒ **Maysville SD 25** ☒ **PUD No. 1** (electric) ☒ **Ziply**	☒ **US Army Corps of Engineers** ☐ **BNSF** ☒ **DAHP** ☐ **DNR** ☒ **DOE** (Bellevue) ☐ **DOE** (Floodplain) ☐ **DOE** (Register) ☐ **DOE** (Shorelands) ☒ **WDFW** ☐ **WSDOT** ☐ **WUTC**	☐ **Health District** ☐ **Planning** ☒ **Public Works - Land Development** ☐ ☐	☐ **Olympic Pipeline** ☐ **Puget Sound Energy** ☒ **Stillaguamish Tribe** ☒ **Tulalip Tribes** ☐ ☐

PROJECT MANAGER			
Name Emily Morgan	**Title** Senior Planner	**Phone** 360.363.8216	**E-mail** emorgan@marysvillewa.gov

The City of Marysville Community Development Department is reviewing this application and encourages other affected agencies, departments, community groups and municipalities to respond. Your comments will assist the City's evaluation of this application. Furthermore, you will become a Party of Record to this case if you submit a response with your name and address. We highly recommend that you send your comments on letterhead. Without a full name and address, you will not be considered a Party of Record. You may e-mail, fax or send via regular mail your comments to this project manager listed above.

If you have no comments, please check the box below, sign and return this form to the project manager.

☐ **NO COMMENTS** **Signature**: _____ **Date**: _____

☐ **ATTACHED** **Title**: _____ **Agency**: _____

Earth Solutions NW LLC

Geotechnical Engineering
Construction Observation/Testing
Environmental Services



GEOTECHNICAL ENGINEERING STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
7212, 7315, AND 7417 – 44TH STREET NORTHEAST
MARYSVILLE, WASHINGTON

ES-9592

15365 NE 90th Street, Suite 100 • Redmond, WA 98052 • (425) 449-4704
3130 Varney Lane, Suite 105 • Pasco, WA 99301 • (509) 905-0275
esnw.com

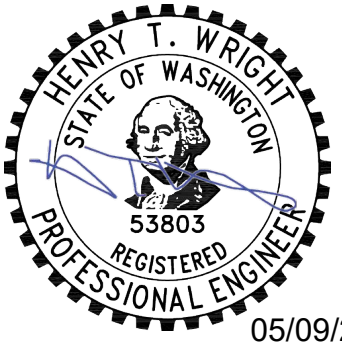
PREPARED FOR

KEYSTONE LAND, LLC

May 9, 2024



Brian C. Snow, L.G.
Project Geologist



05/09/2024

Henry T. Wright, P.E.
Associate Principal Engineer

GEOTECHNICAL ENGINEERING STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
7212, 7315, AND 7417 – 44TH STREET NORTHEAST
MARYSVILLE, WASHINGTON

ES-9592

Earth Solutions NW, LLC
15365 NE 90th Street, Suite 100 • Redmond, WA 98052 • (425) 449-4704
3130 Varney Lane, Suite 105 • Pasco, WA 99301 • (509) 905-0275
esnw.com

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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Earth Solutions NW LLC

Geotechnical Engineering, Construction
Observation/Testing and Environmental Services

May 9, 2024
ES-9592

Keystone Land, LLC
13805 Smokey Point Boulevard, Suite 102
Marysville, Washington 98271

Attention: Joe Long

Dear Joe:

Earth Solutions NW, LLC (ESNW), is pleased to present this report to support the proposed residential development to be located at 7212, 7315, and 7417 – 44th Street Northeast, approximately 300 to 1,300 feet east of the intersection with 71st Avenue Northeast, in Marysville, Washington. Based on the results of our investigation, the proposed development is feasible from a geotechnical standpoint.

Per the referenced documents, the site will be developed with 57 new residential lots, 2 stormwater detention facilities, and associated improvements. Grade modifications of up to 10 to 12 feet will be necessary in some areas to establish finish grade elevations for new building pads, including both grade cuts and fills.

Our field observations indicate the site is underlain primarily by medium dense to very dense silty sand (glacial till) deposits. Scarce groundwater seepages were observed during site subsurface exploration activities, and in our opinion, groundwater should be expected within site excavations during construction.

In our opinion, the proposed residential structures can be supported on conventional continuous and spread footing foundations bearing on competent native soil, recompacted native soil, or new structural fill placed directly atop a competent subgrade surface. In general, competent native soil suitable for support of foundations will likely be encountered beginning at depths of roughly two to four feet below the existing ground surface.

Based on our observations of a relatively shallow depth to very dense, weakly cemented, unweathered glacial till deposits with high fines content, full stormwater infiltration is not considered feasible for this site.

Pertinent geotechnical recommendations are provided in this report. We appreciate the opportunity to be of service to you on this project. Please call if you have any questions or if we can be of further assistance.

Sincerely,

EARTH SOLUTIONS NW, LLC



Brian C. Snow, L.G.
Project Geologist

cc: Perkls Properties, LLC
Attention: Nate Perkl

Solid Ground Engineering
Attention: Tom Abbott, P.E.

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Appendix A	**Subsurface Exploration Logs**
Appendix B	**Laboratory Test Results**

GEOTECHNICAL ENGINEERING STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
7212, 7315, AND 7417 – 44TH STREET NORTHEAST
MARYSVILLE, WASHINGTON

ES-9592

INTRODUCTION

General

This geotechnical engineering study (study) was prepared for the proposed residential development to be constructed at 7212, 7315, and 7417 – 44th Street Northeast, approximately 300 to 1,300 feet east of the intersection with 71st Avenue Northeast, in Marysville, Washington. In accordance with our proposal, the following tasks were completed as part of our scope of services:

- Subsurface exploration to characterize the soil and groundwater conditions.
- Laboratory testing of representative soil sample collected on site.
- Engineering analyses.
- Preparation of this report.

Project Description

The subject site is located at 7212, 7315, and 7417 – 44th Street Northeast, approximately 300 to 1,300 feet east of the intersection with 71st Avenue Northeast, in Marysville, Washington. The approximate site location is depicted on Plate 1 (Vicinity Map).

Per the referenced documents, the site will be developed with 57 new residential lots, 2 stormwater detention facilities, and associated improvements. Grade modifications of up to about 10 to 12 feet will be necessary in some areas to establish finish grade elevations for new building pads, including both grade cuts and fills.

At the time of report submission, specific building load values were not available for review; however, we anticipate the proposed residential structures will be two to three stories in height consisting of relatively lightly loaded wood framing supported on conventional foundations. Based on our experience with similar developments, we estimate wall loads of about 1 to 2 kips per linear foot, column loading of up to about 20 kips, and slab-on-grade loading of 150 pounds per square foot (psf) will be incorporated into the final design.

ESNW was provided a copy of the referenced geotechnical report prepared by Robinson Noble, Inc. (RNI), hereafter referred to as the "RNI report," to review and incorporate into our evaluation of the project site.

If the above design assumptions are incorrect or change, ESNW should be contacted to review the recommendations provided in this report. ESNW should review the final design to confirm that our geotechnical recommendations have been incorporated into the final plans.

SITE CONDITIONS

Surface

The subject site is located at 7212, 7315, and 7417 – 44th Street Northeast, approximately 300 to 1,300 feet east of the intersection with 71st Avenue Northeast, in Marysville, Washington. The site consists of three tax parcels (Snohomish County Parcel Nos. 2905020020-0400, 3005350030-3600, and 3005350030-3700) totaling about 11.53 acres of combined land area on both north and south sides of 44th Street Northeast.

Based on the documents provided to us, the project area straddles a northwest-southeast trending linear topographic depression, which accommodates about 64 feet of total topographic relief within the property boundaries.

The project area is currently developed with three single-family residences, outbuildings, landscaping, and associated improvements. The site is generally surrounded by existing residential development and undeveloped land, and is bisected by 44th Street Northeast.

Subsurface

An ESNW representative observed, logged, and sampled two test pits advanced at accessible locations within the southern property area on April 2, 2024, using a machine and operator provided by the client. The test pits were completed to assess and classify the site soils and to characterize the groundwater conditions within areas that were previously not explored as part of the RNI report. RNI previously observed the excavation of six test pits advanced within the northern property area on October 19, 2021. The maximum exploration depth completed by ESNW was approximately 10 feet below the existing ground surface (bgs). RNI's maximum exploration depth was reported at about nine feet bgs.

The approximate locations of the test pits are depicted on Plate 2 (Test Pit Location Plan). Please refer to the test pit logs provided in Appendix A for a more detailed description of subsurface conditions. Copies of the test pit logs provided in the RNI report are included in Appendix A. Representative soil samples collected at our exploration locations were analyzed in general accordance with Unified Soil Classification System (USCS) and United States Department of Agriculture (USDA) methods and procedures.

Topsoil

Topsoil was generally encountered within the upper 6 to 12 inches of existing grades at the test pit locations. Deeper or shallower pockets of topsoil may be encountered locally across the site. The topsoil was characterized by its dark brown color, the presence of fine organic material, and small root intrusions.

Fill

Fill was neither observed nor documented by ESNW or in the referenced RNI report.

Native Soil

Underlying the topsoil, native soil consisting primarily of dense silty sand deposits (USCS: SM) was observed, consistent with the typical make-up of glacial till deposits. The glacial till soil was observed in a light to moderately weathered and loose condition near surface, transitioning to a dense and relatively unweathered condition beginning at depths of approximately two-and-one-half feet bgs.

Similar conditions were reported in the RNI report, with the transition to relatively dense, unweathered glacial till soils indicated between two and four feet bgs.

Based on the results of our laboratory analyses, the native glacial till soils contain between 23 and 39 percent fines and were chiefly encountered in a moist condition during the April 2024 exploration.

Geologic Setting

Geologic mapping of the area identifies Vashon till (Qvt) as the primary geologic unit underlying the site. As reported on the geologic map resource, glacial till is a non-sorted mixture of mud, sand, pebbles, cobbles, and boulders (diamicton), resembling a low strength concrete mix. The glacial till was deposited directly from the glacier as it advanced over bedrock and older Quaternary deposits.

The referenced Web Soil Survey (WSS) identifies Tokul gravelly medial loam as the primary soil unit mantling the project site. Tokul series soils were formed over glacial till and volcanic ash. The referenced USDA soil survey characterizes this soil unit with slow surface water runoff and a slight hazard of water erosion.

In our opinion, the soils observed during the subsurface exploration are representative of glacial till deposits, consistent with the geologic and soils mapping resources outlined in this section.

Groundwater

Moderate groundwater seepage was encountered at test location TP-2 at a depth of roughly six feet bgs during the April 2024 exploration completed by ESNW. Groundwater was not reported in the RNI report.

Zones of perched groundwater seepage are typical of glacially derived deposits and should be expected within site excavations at depth, particularly during the wet season. Groundwater seepage rates and elevations may fluctuate depending on many factors, including precipitation duration and intensity, the time of year, and soil conditions. In general, groundwater flow rates are higher during the winter, spring, and early summer months.

Geologic Hazard Areas Assessment

ESNW reviewed Marysville Municipal Code, Chapter 22E.10 Article IV – Geologic Hazard Areas, to evaluate the presence of geologic hazard areas at or near the subject site. Along with site-specific field observations, ESNW reviewed the referenced critical areas map delineating areas potentially subject to geologic hazards. Geologic hazards within the City of Marysville include areas susceptible to landslides, seismic activity, and severe erosion.

Based on our review, the site and surrounding area do not contain geologic hazard areas as recognized by the MMC.

DISCUSSION AND RECOMMENDATIONS

General

Based on the results of our investigation, the proposed development is feasible from a geotechnical standpoint. Per the referenced documents, the site will be developed with 57 new residential lots, 2 stormwater detention facilities, and associated improvements. Grade modifications of up to about 10 to 12 feet will be necessary in some areas to establish finish grade elevations for new building pads, including both grade cuts and fills.

Our field observations indicate the site is underlain primarily by medium dense to very dense silty sand (glacial till) deposits. Scarce groundwater seepages were observed during site subsurface exploration activities, and in our opinion, groundwater should be expected within site excavations during construction.

In our opinion, the proposed residential structures can be supported on conventional continuous and spread footing foundations bearing on competent native soil, recompacted native soil, or new structural fill placed directly atop a competent subgrade surface. In general, competent native soil suitable for support of foundations will likely be encountered beginning at depths of roughly two to four feet below the existing ground surface.

Based on our observations of a relatively shallow depth to very dense, weakly cemented, unweathered glacial till deposits with high fines content, full stormwater infiltration is not considered feasible for this site.

Site Preparation and Earthwork

Site preparation activities should consist of installing temporary erosion control measures and performing site stripping within the designated clearing limits. Subsequent earthwork activities will likely involve additional mass grading and infrastructure and utility installations.

Temporary Erosion Control

The following temporary erosion control measures should be considered:

- Temporary construction entrances and drive lanes, consisting of at least six inches of quarry spalls, should be considered to both minimize off-site soil tracking and provide stable surfaces at site entrances. Placing geotextile fabric underneath the quarry spalls will provide greater stability if needed.

- Silt fencing should be placed around the appropriate portions of the site perimeter.

- When not in use, soil stockpiles should be covered or otherwise protected to reduce the potential for soil erosion, especially during periods of wet weather.

- Temporary measures for controlling surface water runoff, such as interceptor trenches, sumps, or interceptor swales, should be installed prior to beginning earthwork activities.

- Dry soils disturbed during construction should be wetted to minimize dust and airborne soil erosion.

- When appropriate, permanent planting or hydroseeding will help to stabilize site soils.

Additional Best Management Practices, as specified by the project civil engineer and indicated on the plans, should be incorporated into construction activities. Temporary erosion control measures may be modified during construction as site conditions require, as approved by the site erosion control lead.

Stripping

Topsoil was encountered within the upper 6 to 12 inches, and root intrusions generally extended below the topsoil into the upper weathered soil horizon. The organic-rich topsoil should be stripped and segregated into a stockpile for later use on site or to haul off site. The material remaining immediately below the topsoil may have some root zones and will likely be variable in composition, density, and/or moisture content.

The material exposed after initial stripping may not be suitable for direct structural support as is and may need to either be compacted in place or stripped and stockpiled for reuse as fill; depending on the time of year stripping occurs, the soil exposed below the topsoil may be too wet to compact and will likely need to be aerated or treated. ESNW should observe initial stripping activities to provide recommendations regarding stripping depths and material suitability.

Excavations and Slopes

Based on the soil conditions observed at the subsurface exploration locations, excavation activities are likely to expose relatively loose native soils extending to depths of approximately two to four feet below the existing ground surface, becoming very dense at depth. Groundwater seepage will likely be encountered within site excavations depending on the time of year. The following Federal Occupation Safety and Health Administration and Washington Industrial Safety and Health Act soil classifications and maximum allowable temporary slope inclinations may be used:

- Areas exposing groundwater seepage — 1.5H:1V (Type C)
- Loose soil and fill — 1.5H:1V (Type C)
- Medium dense soil — 1H:1V (Type B)
- Dense to very dense native soil (hardpan) — 0.75H:1V (Type A)

Permanent slopes should be planted with vegetation to both enhance stability and minimize erosion and should maintain a gradient of 2H:1V or flatter. The presence of perched groundwater may cause localized sloughing of temporary slopes. An ESNW representative should be requested to observe temporary and permanent slopes to confirm the slope inclinations are suitable for the exposed soil conditions and to provide additional excavation and slope recommendations as necessary. If the recommended temporary slope inclinations cannot be achieved, temporary shoring will be necessary to support excavations.

Structural Fill

Structural fill is defined as compacted soil placed in foundation, slab-on-grade, roadway, permanent slope, retaining wall, and utility trench backfill areas. Structural fill placed and compacted during site grading activities should meet the following specifications and guidelines:

- Structural fill material — Granular soil
- Moisture content — At or slightly above optimum
- Relative compaction (minimum) — 95 percent (Modified Proctor)
- Loose lift thickness (maximum) — 12 inches

The existing soil may not be suitable for use as structural fill unless the soil is at (or slightly above) the optimum moisture content at the time of placement and compaction. Soil shall not be placed dry of the optimum moisture content and should be evaluated by ESNW during construction.

With respect to underground utility installations and backfill, local jurisdictions may dictate the soil type(s) and compaction requirements. Unsuitable material or debris must be removed from structural areas if encountered.

In-situ and Imported Soil

The in-situ soils observed at the subject site have a high sensitivity to moisture and were generally in a moist to wet condition at the time of exploration. Soils anticipated to be exposed on site will degrade rapidly if exposed to wet weather and construction traffic. Compaction of the soils to the levels necessary for use as structural fill may be difficult or impossible during wet weather conditions. Soils encountered during site excavations that are excessively over the optimum moisture content will likely require aeration or treatment prior to placement and compaction. Conversely, soils that are substantially below the optimum moisture content will require moisture conditioning through the addition of water prior to use as structural fill. An ESNW representative should determine the suitability of in-situ soils for use as structural fill at the time of construction.

Imported soil intended for use as structural fill should be evaluated by ESNW during construction. The imported soil must be workable to the optimum moisture content, as determined by the Modified Proctor Method (ASTM D1557), at the time of placement and compaction. During wet weather conditions, imported soil intended for use as structural fill should consist of a well-graded, granular soil with a fines content of 5 percent or less (where the fines content is defined as the percent passing the Number 200 sieve, based on the minus three-quarter-inch fraction).

Wet-Season Grading

Earthwork activities that occur during the wet season may require additional measures to protect both structural subgrades and soil intended for use as structural fill. Site specific recommendations can be provided at the time of construction and may include leaving cut areas several inches above design subgrade elevations, covering working surfaces with crushed rock, protecting structural fill soil from adverse moisture conditions, and additional TESC recommendations. ESNW can assist in obtaining a wet-season grading permit if required by the governing jurisdiction.

Foundations

The proposed residential structures can be supported on conventional continuous and spread footing foundations bearing on competent native soil, recompacted native soil, or new structural fill placed directly atop a competent subgrade surface. In general, competent native soil suitable for support of foundations will likely be encountered beginning at depths of roughly two to four feet bgs. Where loose or unsuitable soil conditions are exposed at foundation subgrade elevations, compaction of the soil to the specifications of structural fill or overexcavation and replacement with suitable structural fill will likely be necessary. An ESNW representative should be requested to confirm suitability of foundation subgrades at the time of construction.

Provided the structures will be supported as described above, the following parameters may be used for design of the new foundations:

- Allowable soil bearing capacity 2,500 psf
- Passive earth pressure 300 pcf
- Coefficient of friction 0.40

A one-third increase in the allowable soil bearing capacity can be assumed for short-term wind and seismic loading conditions. The passive earth pressure and coefficient of friction values include a safety factor of 1.5. With structural loading as expected, total settlement in the range of one inch is anticipated, with differential settlement of about one-half inch. The majority of the settlement should occur during construction as dead loads are applied.

Retaining Walls

Retaining walls must be designed to resist earth pressures and applicable surcharge loads. The following parameters may be used for retaining wall design:

- Active earth pressure (unrestrained condition) 35 pcf
- At-rest earth pressure (restrained condition) 55 pcf
- Traffic surcharge (passenger vehicles) 70 psf (rectangular distribution)
- Passive earth pressure 300 pcf
- Coefficient of friction 0.40
- Seismic surcharge 8H psf*

* *Where H equals the retained height (in feet).*

The passive earth pressure and coefficient of friction values include a safety factor of 1.5. Additional surcharge loading from adjacent foundations, sloped backfill, or other loads should be included in the retaining wall design.

Retaining walls should be backfilled with free-draining material that extends along the height of the wall and a distance of at least 18 inches behind the wall. The upper 12 inches of the wall backfill may consist of a less permeable soil, if desired.

Drainage should be provided behind retaining walls such that hydrostatic pressures do not develop. If drainage is not provided, hydrostatic pressures should be included in the wall design. A perforated drainpipe should be placed along the base of the wall and connected to an approved discharge location. A typical retaining wall drainage detail is provided on Plate 3.

Slab-on-Grade Floors

Slab-on-grade floors should be supported on a firm and unyielding subgrade consisting of competent native soil or at least 12 inches of new structural fill. Unstable or yielding areas of the subgrade should be recompacted or overexcavated and replaced with suitable structural fill prior to slab construction.

A capillary break consisting of a minimum of four inches of free-draining crushed rock or gravel should be placed below the slab. The free-draining material should have a fines content of 5 percent or less defined as the percent passing the number 200 sieve, based on the minus three-quarters-inch fraction. In areas where slab moisture is undesirable, installation of a vapor barrier below the slab should be considered. If used, the vapor barrier should consist of a material specifically designed to function as a vapor barrier and should be installed in accordance with the manufacturer's specifications.

Utility Support and Trench Backfill

The soils observed at the subsurface exploration locations are generally suitable for support of utilities. Use of the native soil as structural backfill in the utility trench excavations will depend on the in-situ moisture content at the time of placement and compaction. If native soil is placed below the optimum moisture content, settlement will likely occur once wet weather impacts the trenches. As such, backfill soils should be properly moisture conditioned, as necessary, to ensure acceptability of the soil moisture content at the time of placement and compaction. Native soil will be difficult or impossible to use as utility trench backfill during extended wet weather conditions. In this respect, moisture conditioning or treatment of the soils may be necessary at some locations prior to use as structural fill. Utility trench backfill should be placed and compacted to the specifications of structural fill provided in this report or to the applicable requirements of the presiding jurisdiction.

Preliminary Pavement Sections

The performance of site pavements is largely related to the condition of the underlying subgrade. To ensure adequate pavement performance, the subgrade should be in a firm and unyielding condition when subjected to proof rolling with a loaded dump truck. Structural fill in pavement areas should be compacted to the specifications previously detailed in this report. Soft, wet, or otherwise unsuitable or yielding subgrade conditions will require remedial measures, such as overexcavation and/or placement of thick crushed rock or structural fill sections, prior to pavement.

We anticipate new pavement sections will be subjected primarily to passenger vehicle traffic. For lightly loaded pavement areas subjected primarily to passenger vehicles, the following preliminary pavement sections may be considered:

- A minimum of two inches of hot-mix asphalt (HMA) placed over four inches of crushed rock base (CRB), or;

- A minimum of two inches of HMA placed over three inches of asphalt-treated base (ATB).

Heavier traffic areas generally require thicker pavement sections depending on site usage, pavement life expectancy, and site traffic. For preliminary design purposes, the following pavement sections for occasional truck traffic and access roadways may be considered:

- Three inches of HMA placed over six inches of CRB, or;

- Three inches of HMA placed over four and one-half inches of ATB.

A representative of ESNW should be requested to observe subgrade conditions prior to placement of CRB or ATB. As necessary, supplemental recommendations for achieving subgrade stability and drainage can be provided. If on-site roads will be constructed with an inverted crown, additional drainage measures will be recommended to assist in maintaining road subgrade and pavement stability.

Final pavement design recommendations, including recommendations for heavy traffic areas, access roads, and frontage improvement areas, can be provided once final traffic loading has been determined. Road standards utilized by the governing jurisdiction may supersede the recommendations provided in this report. The HMA, ATB, and CRB materials should conform to WSDOT specifications. All soil base material should be compacted to a relative compaction of 95 percent, based on the laboratory maximum dry density as determined by ASTM D1557.

Drainage

Groundwater seepage will likely be encountered within site excavations depending on the time of year grading operations take place. Temporary measures to control surface water runoff and groundwater during construction would likely involve passive elements such as interceptor trenches, interceptor swales, and sumps. ESNW should be consulted during preliminary grading to identify areas of seepage and provide recommendations to reduce the potential for seepage-related instability.

Finish grades must be designed to direct surface drain water away from structures and slopes. Water must not be allowed to pond adjacent to structures or slopes. In our opinion, a foundation drain should be installed along building perimeter footings. A typical foundation drain detail is provided on Plate 4.

Infiltration Evaluation

In general, the relatively dense, weakly cemented, and unweathered glacial till soils (hardpan) observed at depths beginning at about two to four feet bgs generally exhibit very poor soil infiltration characteristics. In our opinion, the unweathered glacial till soils should be considered impermeable for design purposes, and full infiltration should be considered infeasible from a geotechnical standpoint.

Stormwater Vault Design

We anticipate that site stormwater will be managed using detention vault systems constructed within the detention tract areas identified on the referenced site plans. Vault foundations should be supported on competent native soil or crushed rock placed on competent native soil. Competent native soil suitable for vault foundation support is expected to be exposed beginning at depths of about five feet bgs.

Final storm vault designs must incorporate adequate buffer space from property boundaries and structures such that temporary excavations to construct the vault structure can be successfully completed. Perimeter drains should be installed around the vault and conveyed to an approved discharge point. The presence of perched groundwater seepage (Type C soils, as outlined in the *Excavations and Slopes* section of this report) should be anticipated during excavation activities for the vault.

Provided the stormwater vault will be supported as described above, the following parameters can be used for stormwater vault design:

- Allowable soil bearing capacity 5,000 psf
- Active earth pressure (unrestrained) 35 pcf
- Active earth pressure (unrestrained, hydrostatic) 80 pcf
- At-rest earth pressure (restrained) 55 pcf
- At-rest earth pressure (restrained, hydrostatic) 100 pcf
- Coefficient of friction 0.40
- Passive earth pressure 300 pcf
- Seismic surcharge 8H psf*

* *Where H equals the retained height.*

The passive earth pressure and coefficient of friction values include a safety factor of 1.5. The vault walls should be backfilled with free-draining material or suitable sheet drainage that extends along the height of the walls. The upper one foot of the wall backfill can consist of a less permeable soil, if desired. A perforated drainpipe should be placed along the base of the wall and connected to an approved discharge location. If the elevation of the vault bottom is such that gravity flow to an outlet is not possible, the portion of the vault below the drain should be designed to include hydrostatic pressure. Design values accounting for hydrostatic pressure are included above.

An ESNW representative should be requested observe grading operations for the vault and the subgrade conditions prior to concrete forming and pouring to confirm conditions are as anticipated and to provide supplemental recommendations, as necessary. Additionally, ESNW should be contacted to review final vault designs to confirm that appropriate geotechnical parameters have been incorporated.

We anticipate native soil will be used as vault backfill. We recommend placing the native soil at or slightly above optimum moisture. Native soil placed substantially above optimum moisture will require additional time or remediation prior to supporting structural loads. Vault backfill should be placed and compacted in accordance with the *Structural Fill* section of this report.

Seismic Design

The 2018 International Building Code (2018 IBC) recognizes the most recent edition of the Minimum Design Loads for Buildings and Other Structures manual (ASCE 7-16) for seismic design, specifically with respect to earthquake loads. Based on the soil conditions encountered at the test pit locations, the parameters and values provided below are recommended for seismic design per the 2018 IBC.

Parameter	Value
Site Class	C*
Mapped short period spectral response acceleration, S_S (*g*)	1.108
Mapped 1-second period spectral response acceleration, S_1 (*g*)	0.394
Short period site coefficient, F_a	1.2
Long period site coefficient, F_v	1.5
Adjusted short period spectral response acceleration, S_{MS} (*g*)	1.329
Adjusted 1-second period spectral response acceleration, S_{M1} (*g*)	0.591
Design short period spectral response acceleration, S_{DS} (*g*)	0.886
Design 1-second period spectral response acceleration, S_{D1} (*g*)	0.394

* *Assumes very dense native soil conditions, encountered to a maximum depth of 10 feet bgs during the April 2024 field exploration, remain dense to at least 100 feet bgs. Based on our experience with the project geologic setting (glacial till) across the Puget Sound region, soil conditions are likely consistent with this assumption.*

Liquefaction Susceptibility

Liquefaction is a phenomenon that can occur within a soil profile as a result of an intense ground shaking or loading condition. Most commonly, liquefaction is caused by ground shaking during an earthquake. Sand or silt soil profiles that are loose, cohesionless, and present below the groundwater table are most susceptible to liquefaction. During the ground shaking, the soil contracts, and porewater pressure increases. The increased porewater pressure occurs quickly and without sufficient time to dissipate, resulting in water flowing upward to the ground surface and a liquefied soil condition. Soil in a liquefied condition possesses very little shear strength in comparison to the drained condition, which can result in a loss of foundation support for structures.

In our opinion, and consistent with the depiction on the referenced liquefaction susceptibility map, site susceptibility to liquefaction may be considered low or negligible. The absence of a shallow groundwater table and the relatively dense, weakly cemented characteristics of the native soil were the primary bases for this opinion.

LIMITATIONS

The recommendations and conclusions provided in this study are professional opinions consistent with the level of care and skill that is typical of other members in the profession currently practicing under similar conditions in this area. A warranty is neither expressed nor implied. Variations in the soil and groundwater conditions observed at the exploration locations may exist and may not become evident until construction. ESNW should reevaluate the conclusions provided in this study if variations are encountered.

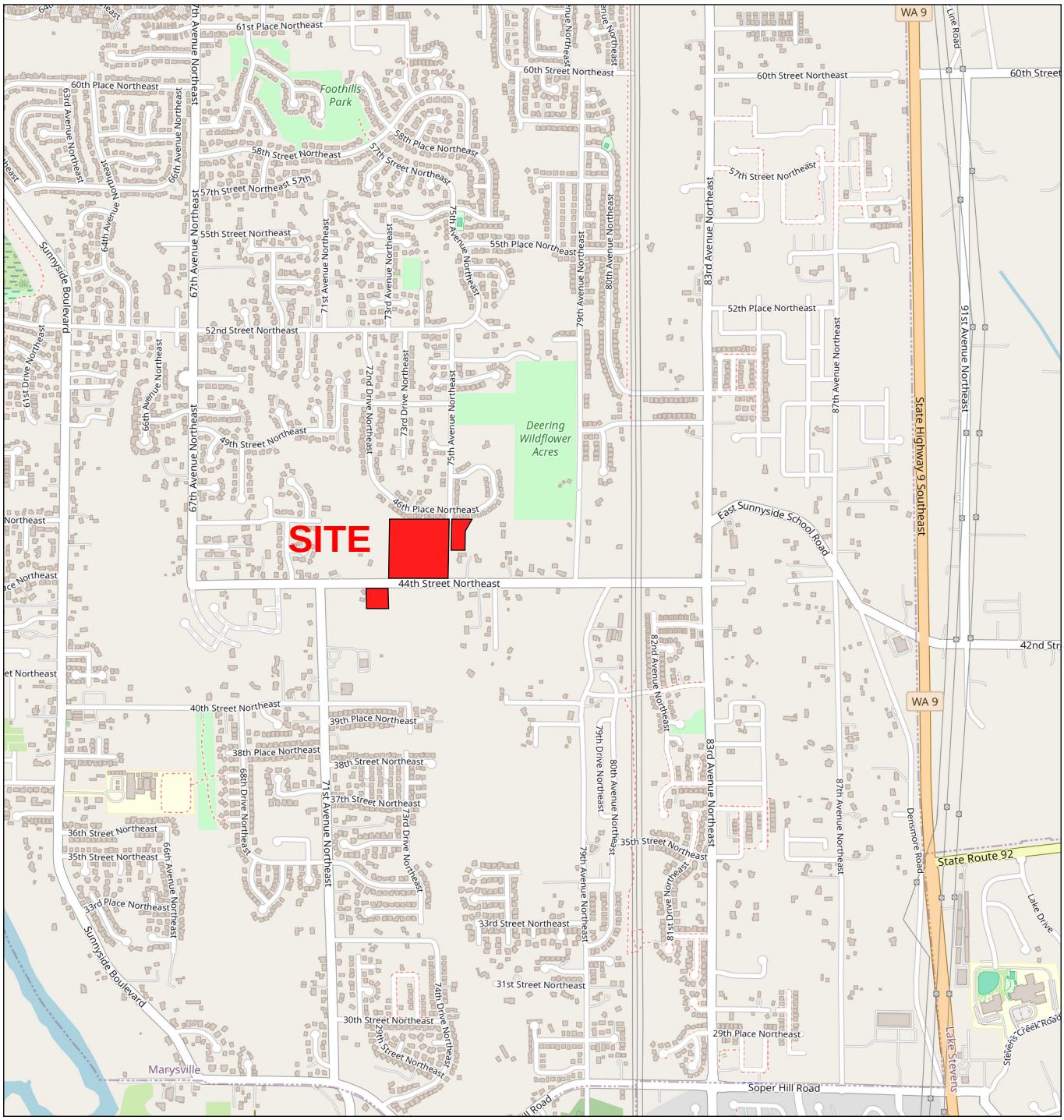
Additional Services

ESNW should have an opportunity to review final project plans with respect to the geotechnical recommendations provided in this report. ESNW should also be retained to provide testing and consultation services as needed during construction.

REFERENCES

The following documents and resources were reviewed as part of our report preparation:

- Preliminary Plat Plans, pages PP-01 and PP-02, prepared by Solid Ground Engineering, Job No. 23-0010, dated March 22, 2024
- Geotechnical Report, prepared by RNI, RN File No. 2906-010A, dated June 16, 2022
- Geologic Map of the Marysville Quadrangle, Snohomish County, Washington, by Minard, J.P., 1985
- WSS, maintained by the Natural Resources Conservation Service under the USDA
- Soil Survey of Snohomish County Area, Washington, by Debose and Klungland, USDA Soil Conservation Service, issued July 1983
- Liquefaction Susceptibility Map of Snohomish County, Washington, prepared by Palmer, S.P. et al., endorsed by the Washington State Department of Natural Resources, dated September 2004
- City of Marysville – Geologic Hazards Map, dated February 2024
- Marysville Municipal Code Chapter 22E.010 – Article IV



Reference:
Snohomish County, Washington
OpenStreetMap.org

NORTH

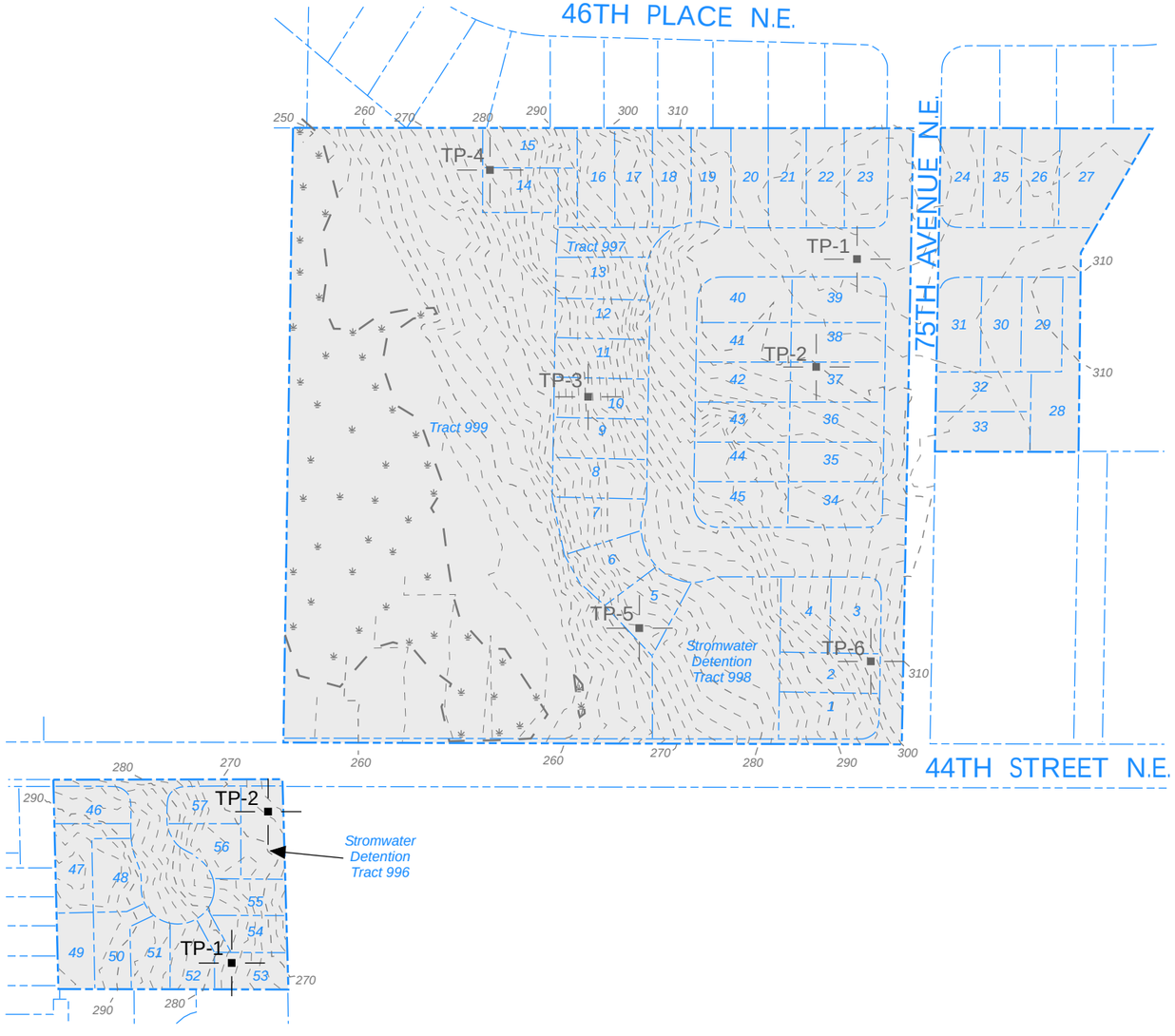
NOTE: This plate may contain areas of color. ESNW cannot be responsible for any subsequent misinterpretation of the information resulting from black & white reproductions of this plate.

Earth Solutions NW LLC

Geotechnical Engineering, Construction Observation/Testing and Environmental Services

Vicinity Map
Marysville 44th PRD
Marysville, Washington

Drawn MRS	Date 05/02/2024	Proj. No. 9592
Checked BCS	Date May 2024	Plate 1



LEGEND

TP-1 — Approximate Location of ESNW Test Pit, Proj. No. ES-9592, April 2024

TP-1 — Approximate Location of Robinson Noble Test Pit, Proj. No. 2906-010A, Oct. 2021

Subject Site

20 — Proposed Lot Number

Wetland (Delineated by Others)

NORTH

0 100 200

1"=200'

Scale in Feet

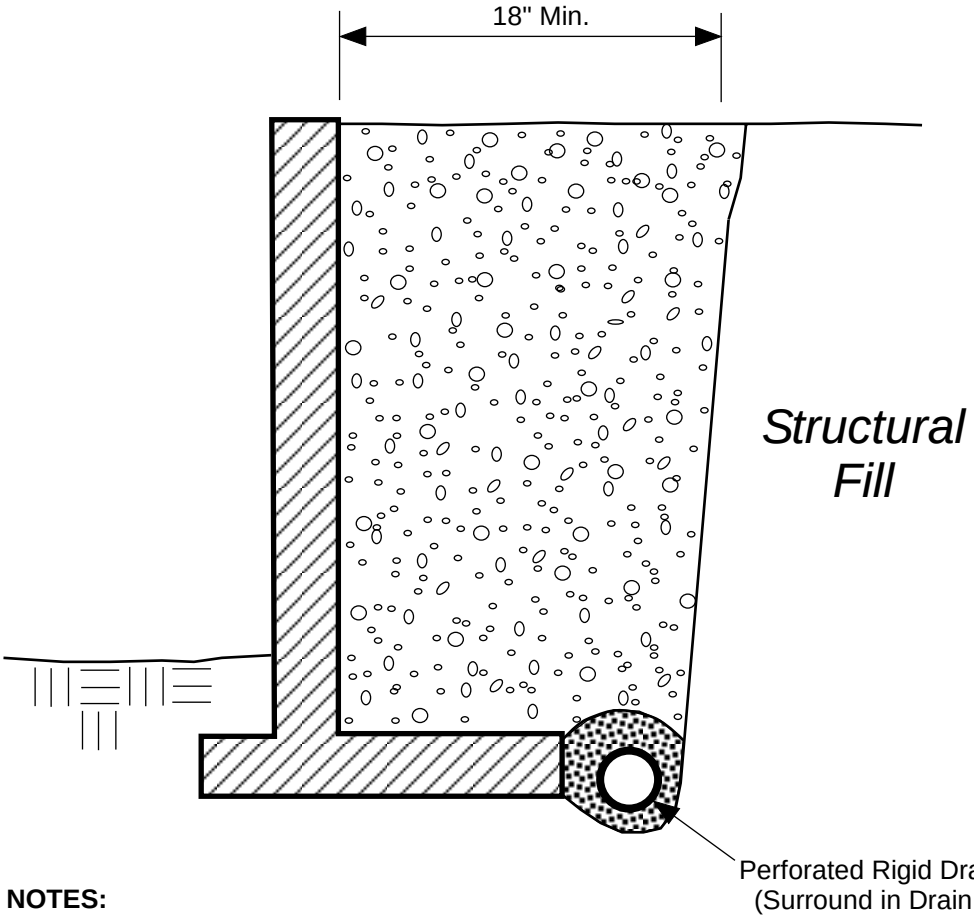
NOTE: The graphics shown on this plate are not intended for design purposes or precise scale measurements, but only to illustrate the approximate test locations relative to the approximate locations of existing and / or proposed site features. The information illustrated is largely based on data provided by the client at the time of our study. ESNW cannot be responsible for subsequent design changes or interpretation of the data by others.

NOTE: This plate may contain areas of color. ESNW cannot be responsible for any subsequent misinterpretation of the information resulting from black & white reproductions of this plate.

Test Pit Location Plan
Marysville 44th PRD
Marysville, Washington

Earth Solutions NW LLC
Geotechnical Engineering, Construction Observation/Testing and Environmental Services

Drawn	MRS
Checked	BCS
Date	05/02/2024
Proj. No.	9592
Plate	2



NOTES:

- Free-draining Backfill should consist of soil having less than 5 percent fines. Percent passing No. 4 sieve should be 25 to 75 percent.
- Sheet Drain may be feasible in lieu of Free-draining Backfill, per ESNW recommendations.
- Drain Pipe should consist of perforated, rigid PVC Pipe surrounded with 1-inch Drain Rock.

SCHEMATIC ONLY - NOT TO SCALE
NOT A CONSTRUCTION DRAWING

LEGEND:

Free-draining Structural Backfill

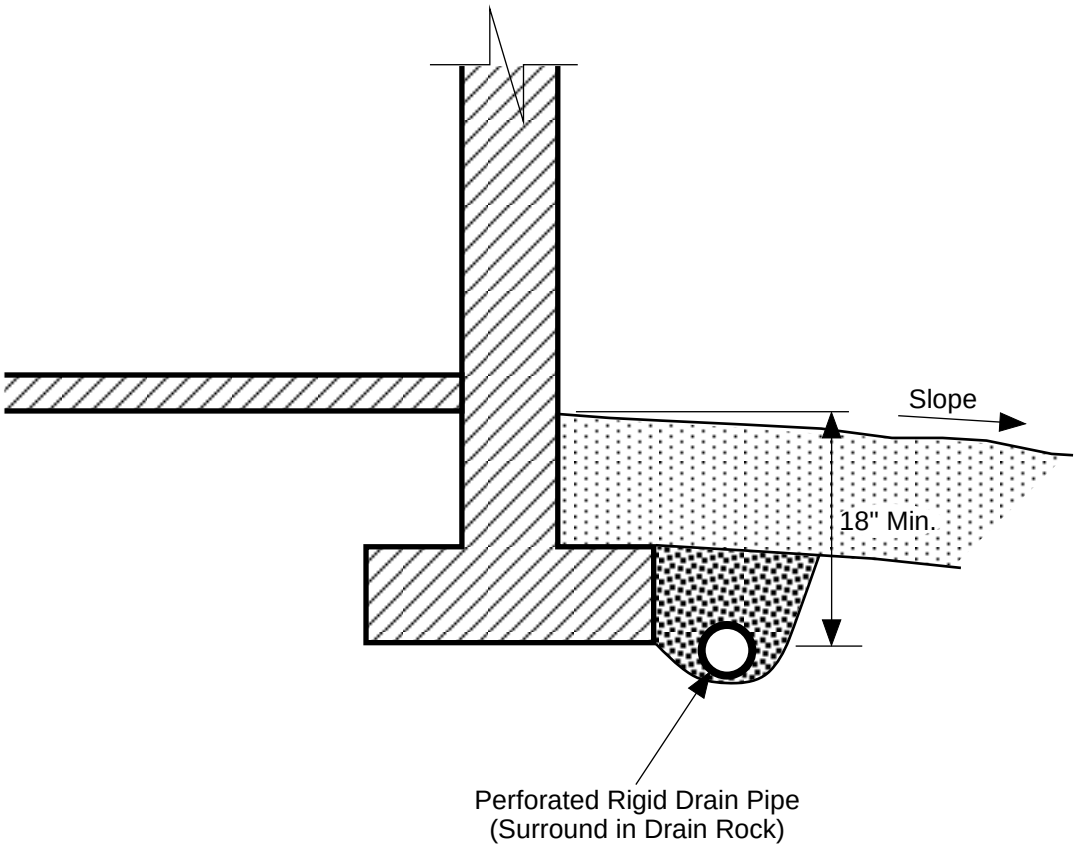
1-inch Drain Rock

Earth Solutions NW LLC

Geotechnical Engineering, Construction Observation/Testing and Environmental Services

Retaining Wall Drainage Detail
Marysville 44th PRD
Marysville, Washington

Drawn MRS	Date 05/02/2024	Proj. No. 9592
Checked BCS	Date May 2024	Plate 3



NOTES:

- Do NOT tie roof downspouts to Footing Drain.
- Surface Seal to consist of 12" of less permeable, suitable soil. Slope away from building.

SCHEMATIC ONLY - NOT TO SCALE
NOT A CONSTRUCTION DRAWING

LEGEND:

Surface Seal: native soil or other low-permeability material.

1-inch Drain Rock

Earth Solutions NW LLC
Geotechnical Engineering, Construction Observation/Testing and Environmental Services

Footing Drain Detail
Marysville 44th PRD
Marysville, Washington

Drawn MRS	Date 05/02/2024	Proj. No. 9592
Checked BCS	Date May 2024	Plate 4

Appendix A

Subsurface Exploration Logs

ES-9592

Subsurface conditions on site were explored by ESNW on April 2, 2024, by excavating two test pits using a machine and operator provided by the client. The approximate locations of the test pits are illustrated on Plate 2 of this study. The subsurface exploration logs are provided in this Appendix. Exploration logs from the RNI report are also included in this Appendix. The test pits completed by ESNW were advanced to a maximum depth of about 10 feet bgs. RNI's maximum exploration depth was reported at nine feet bgs.

The final logs represent the interpretations of the field logs and the results of laboratory analyses. The stratification lines on the logs represent the approximate boundaries between soil types. In actuality, the transitions may be more gradual.

Coarse-Grained Soils - More Than 50% Retained on No. 200 Sieve	Gravels - More Than 50% of Coarse Fraction Retained on No. 4 Sieve	< 5% Fines	GW	Well-graded gravel with or without sand, little to no fines
			GP	Poorly graded gravel with or without sand, little to no fines
		> 12% Fines	GM	Silty gravel with or without sand
			GC	Clayey gravel with or without sand
	Sands - 50% or More of Coarse Fraction Passes No. 4 Sieve	< 5% Fines	SW	Well-graded sand with or without gravel, little to no fines
			SP	Poorly graded sand with or without gravel, little to no fines
		> 12% Fines	SM	Silty sand with or without gravel
			SC	Clayey sand with or without gravel
Fine-Grained Soils - 50% or More Passes No. 200 Sieve	Silts and Clays Liquid Limit Less Than 50		ML	Silt with or without sand or gravel; sandy or gravelly silt
			CL	Clay of low to medium plasticity; lean clay with or without sand or gravel; sandy or gravelly lean clay
			OL	Organic clay or silt of low plasticity
	Silts and Clays Liquid Limit 50 or More		MH	Elastic silt with or without sand or gravel; sandy or gravelly elastic silt
			CH	Clay of high plasticity; fat clay with or without sand or gravel; sandy or gravelly fat clay
			OH	Organic clay or silt of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils
Fill			FILL	Made Ground

Moisture Content

Dry - Absence of moisture, dusty, dry to the touch

Damp - Perceptible moisture, likely below optimum MC

Moist - Damp but no visible water, likely at/near optimum MC

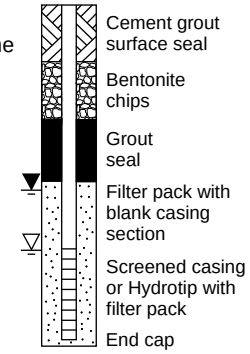
Wet - Water visible but not free draining, likely above optimum MC

Saturated/Water Bearing - Visible free water, typically below groundwater table

Symbols

ATD = At time of drilling

Static water level (date)



Terms Describing Relative Density and Consistency

Coarse-Grained Soils:

Density	SPT blows/foot
Very Loose	< 4
Loose	4 to 9
Medium Dense	10 to 29
Dense	30 to 49
Very Dense	≥ 50

Fine-Grained Soils:

Consistency	SPT blows/foot
Very Soft	< 2
Soft	2 to 3
Medium Stiff	4 to 7
Stiff	8 to 14
Very Stiff	15 to 29
Hard	≥ 30

Test Symbols & Units

Fines = Fines Content (%)

MC = Moisture Content (%)

DD = Dry Density (pcf)

Str = Shear Strength (tsf)

PID = Photoionization Detector (ppm)

OC = Organic Content (%)

CEC = Cation Exchange Capacity (meq/100 g)

LL = Liquid Limit (%)

PL = Plastic Limit (%)

PI = Plasticity Index (%)

Component Definitions

Descriptive Term	Size Range and Sieve Number
Boulders	Larger than 12"
Cobbles	3" to 12"
Gravel	3" to No. 4 (4.75 mm)
Coarse Gravel	3" to 3/4"
Fine Gravel	3/4" to No. 4 (4.75 mm)
Sand	No. 4 (4.75 mm) to No. 200 (0.075 mm)
Coarse Sand	No. 4 (4.75 mm) to No. 10 (2.00 mm)
Medium Sand	No. 10 (2.00 mm) to No. 40 (0.425 mm)
Fine Sand	No. 40 (0.425 mm) to No. 200 (0.075 mm)
Silt and Clay	Smaller than No. 200 (0.075 mm)

Modifier Definitions

Percentage by Weight (Approx.)	Modifier
< 5	Trace (sand, silt, clay, gravel)
5 to 14	Slightly (sandy, silty, clayey, gravelly)
15 to 29	Sandy, silty, clayey, gravelly
≥ 30	Very (sandy, silty, clayey, gravelly)

Classifications of soils in this geotechnical report and as shown on the exploration logs are based on visual field and/or laboratory observations, which include density/consistency, moisture condition, grain size, and plasticity estimates, and should not be construed to imply field or laboratory testing unless presented herein. Visual-manual and/or laboratory classification methods of ASTM D2487 and D2488 were used as an identification guide for the Unified Soil Classification System.

Earth Solutions NW LLC
15365 NE 90th Street, Suite 100
Redmond, WA 98052
Office (425) 449-4704 | esnw.com
Branch Office: Pasco, WA

TEST PIT NUMBER TP-1

PROJECT NUMBER ES-9592 **PROJECT NAME** Marysville 44th PRD

DATE STARTED 4/2/24 **COMPLETED** 4/2/24 **GROUND ELEVATION**

EXCAVATION CONTRACTOR Client Provided **LATITUDE** 48.03501 **LONGITUDE** -122.13336

LOGGED BY BCS **CHECKED BY** HTW **GROUND WATER LEVEL:**

NOTES ▽ **AT TIME OF EXCAVATION**

SURFACE CONDITIONS Ferns, forest **AFTER EXCAVATION**

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0			TPSL		Dark brown TOPSOIL, moderate to abundant root intrusions
				0.6	
			GM		Brown silty GRAVEL with sand, loose to medium dense, wet
	GB	MC = 18.4 Fines = 26.9			[USDA Classification: very gravelly LOAM] -probed 10"
2.5				2.5	
			SM		Gray silty SAND with gravel, dense to very dense, moist -weakly cemented
5.0					
7.5					
	GB	MC = 11.8 Fines = 38.2			[USDA Classification: gravelly LOAM]
				8.0	

Test pit terminated at 8.0 feet below existing grade. No groundwater encountered during excavation. No caving observed.

LIMITATIONS: Ground elevation (if listed) is approximate; the test location was not surveyed. Coordinates are approximate and based on the WGS84 datum. Do not rely on this test log as a standalone document. Refer to the text of the geotechnical report for a complete understanding of subsurface conditions.

Earth Solutions NW LLC
15365 NE 90th Street, Suite 100
Redmond, WA 98052
Office (425) 449-4704 | esnw.com
Branch Office: Pasco, WA

TEST PIT NUMBER TP-2

PROJECT NUMBER ES-9592 **PROJECT NAME** Marysville 44th PRD
DATE STARTED 4/2/24 **COMPLETED** 4/2/24 **GROUND ELEVATION**
EXCAVATION CONTRACTOR Client Provided **LATITUDE** 48.03554 **LONGITUDE** -122.13308
LOGGED BY BCS **CHECKED BY** HTW **GROUND WATER LEVEL:**
NOTES ▽ **AT TIME OF EXCAVATION**
SURFACE CONDITIONS Ferns, forest **AFTER EXCAVATION**

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0			TPSL		Dark brown TOPSOIL, moderate to abundant root intrusions
0.8			ML		Brown SILT with sand, loose, wet
2.5	GB	MC = 40.6			-probed 24"
2.5			SM		Gray silty SAND, medium dense, moist to wet
5.0	GB	MC = 14.8			-slight caving from 5' to 7'
7.5					-moderate groundwater seepage
10.0	GB	MC = 14.9 Fines = 23.2			[USDA Classification: gravelly coarse sandy LOAM]
10.0					Test pit terminated at 10.0 feet below existing grade. Groundwater seepage encountered at 6.0 feet during excavation. Caving observed from 5.0 to 7.0 feet.

LIMITATIONS: Ground elevation (if listed) is approximate; the test location was not surveyed. Coordinates are approximate and based on the WGS84 datum. Do not rely on this test log as a standalone document. Refer to the text of the geotechnical report for a complete understanding of subsurface conditions.

Test Pit 1

Date: 10/19/2021
Logged By: RWCM
Location: 44th Street NE Marysville, WA

Depth (ft.)	Soil Description	USC	View of Test Pit 1
0.0 - 0.5	Dark brown silty fine sand with organics (loose, moist) **(Topsoil)**	SM	
0.5 - 2.0	Reddish-brown silty fine sand with gravel and roots (loose, moist)	SM	
2.0 - 8.5	Gray mottled silty fine sand with gravel and cobbles (dense to very dense, moist) **(Glacial Till)**	SM	

Notes

- Test pit completed at 8.5 feet
- Groundwater was not observed
- Samples collected at 1.5, 4.0, and 8.5 feet.

Tacoma
2105 South C Street
Tacoma, Washington 98402
253.475.7711

Woodinville
17625 - 130th Avenue NE, Suite 102
Woodinville, Washington 98072
425.488.0599

ROBINSON NOBLE

Toll Brothers, Inc: 44th Street Marysville
2906-010A
Figure 4

Test Pit 2

Date: 10/19/2021
Logged By: RWCM
Location: 44th Street NE Marysville, WA

Depth (ft.)	Soil Description	USC	View of Test Pit 2
0.0 - 1.0	Dark brown silty fine sand with organics (loose, moist) **(Topsoil)**	SM	
1.0 - 2.7	Reddish-brown silty fine sand with gravel, cobbles, and roots (medium dense to dense, moist)	SM	
2.7 - 9.0	Gray silty fine sand with gravel, cobbles, and trace rust mottling (dense to very dense, moist) **(Glacial Till)**	SM	

Notes

- Test pit completed at 9.0 feet
- Groundwater was not observed
- Samples collected at 2.0, 3.5, and 9.0 feet.

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ROBINSON NOBLE

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2906-010A
Figure 5

Test Pit 3

Date: 10/19/2021
Logged By: RWCM
Location: 44th Street NE Marysville, WA

Depth (ft.)	Soil Description	USC	View of Test Pit 3
0.0 - 1.0	Dark brown silty fine sand with organics (loose, moist) **(Topsoil)**	SM	
1.0 - 3.0	Brown silty fine sand with gravel and roots (medium dense to dense, moist)	SM	
3.0 - 8.0	Gray moderately cemented silty fine sand to sand with silt with gravel, cobbles, and trace rust mottling (dense to very dense, moist) **(Glacial Till)**	SM/ SP-SM	

Notes

- Test pit completed at 8.0 feet
- Groundwater was not observed
- Samples collected at 2.5, 6.0, and 8.0 feet.

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2906-010A
Figure 6

Test Pit 4

Date: 10/19/2021
Logged By: RWCM
Location: 44th Street NE Marysville, WA

Depth (ft.)	Soil Description	USC	View of Test Pit 4
0.0 - 1.0	Dark brown silty fine sand with organics (loose, moist) **(Topsoil)**	SM	
1.0 - 3.0	Brown silty fine to medium sand with gravel and roots (loose to medium dense, moist)	SM	
3.0 - 8.0	Gray moderately cemented silty fine sand with gravel, cobbles, small boulders, and occasional rust mottling (dense to very dense, moist) **(Glacial Till)**	SM	

Notes

- Test pit completed at 8.0 feet
- Groundwater was not observed
- Samples collected at 2.0 and 5.0 feet.

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Woodinville
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Woodinville, Washington 98072
425.488.0599

ROBINSON NOBLE

Toll Brothers, Inc: 44th Street Marysville
2906-010A
Figure 7

Test Pit 5

Date: 10/19/2021
Logged By: RWCM
Location: 44th Street NE Marysville, WA

Depth (ft.)	Soil Description	USC	View of Test Pit 5
0.0 - 0.5	Dark brown silty fine sand with organics (loose, moist) **(Topsoil)**	SM	
0.5 - 4.0	Brown silty fine sand with gravel, small boulders, and roots (loose to medium dense, moist)	SM	
4.0 - 6.0	Tan to gray silty fine to coarse sand to sand with silt, fine to coarse gravel, cobbles and boulders (dense to very dense, moist to wet) **(Glacial Till?)**	SM/ SP-SM	

Notes

- Test pit completed at 6.0 feet, refusal on boulders
- Groundwater was not observed
- Samples collected at 1.5 and 4.5 feet.

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ROBINSON NOBLE

Toll Brothers, Inc: 44th Street Marysville
2906-010A
Figure 8

Test Pit 6

Date: 10/19/2021
Logged By: RWCM
Location: 44th Street NE Marysville, WA

Depth (ft.)	Soil Description	USC	View of Test Pit 6
0.0 - 1.0	Dark brown silty fine sand with organics (loose, moist) **(Topsoil)**	SM	
1.0 - 2.0	Reddish-brown silty fine sand with gravel and roots (loose to medium dense, moist)	SM	
2.0 - 8.0	Gray moderately cemented silty fine sand with gravel, cobbles, and occasional rust mottling (dense to very dense, moist) **(Glacial Till)**	SM	

Notes

- Test pit completed at 8.0 feet
- Groundwater was not observed
- Samples collected at 2.0 and 6.0 feet.

Tacoma
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Toll Brothers, Inc: 44th Street Marysville
2906-010A
Figure 9

Appendix B

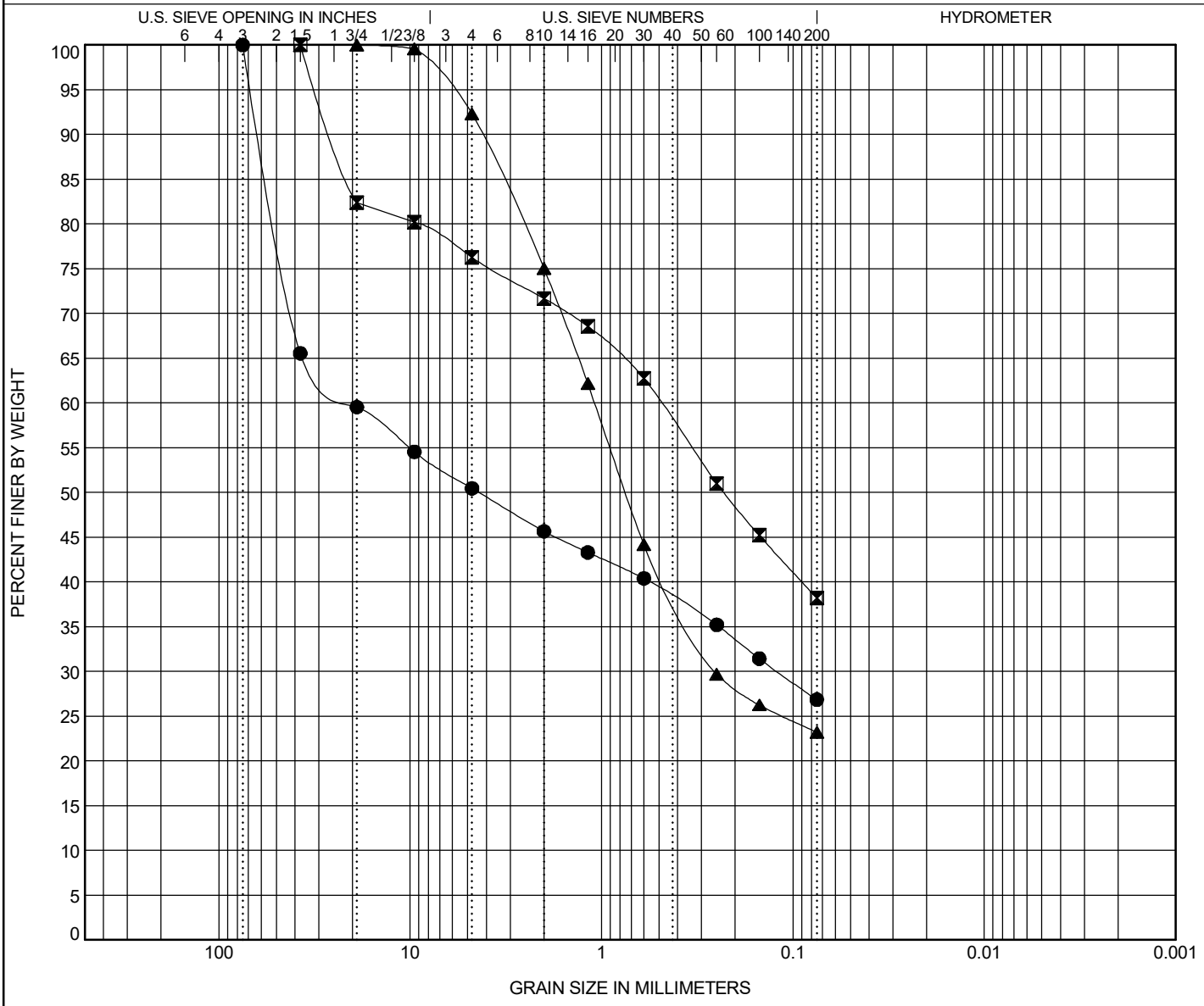
Laboratory Test Results

ES-9592

Earth Solutions NW LLC
15365 NE 90th Street, Suite 100
Redmond, WA 98052
Office (425) 449-4704 | esnw.com
Branch Office: Pasco, WA

GRAIN SIZE DISTRIBUTION

PROJECT NUMBER ES-9592 **PROJECT NAME** Marysville 44th PRD



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification			Classification	Cc	Cu
●	TP-01	2.00ft.	**USDA: Brown Very Gravelly Loam. USCS: GM with Sand.**		
⊠	TP-01	8.00ft.	**USDA: Gray Gravelly Loam. USCS: SM with Gravel.**		
▲	TP-02	10.00ft.	**USDA: Gray Gravelly Coarse Sandy Loam. USCS: SM.**		

Specimen Identification			D100	D60	D30	D10	LL	PL	PI	%Silt	%Clay
●	TP-01	2.0ft.	**75**	**19.991**	**0.121**					**26.9**	
⊠	TP-01	8.0ft.	**37.5**	**0.488**						**38.2**	
▲	TP-02	10.0ft.	**19**	**1.086**	**0.254**					**23.2**	

GRAIN SIZE USDA ES-9592 MARYSVILLE 44TH PRD.GPJ GINT US LAB.GDT 4/8/24

Everett Daily Herald

Affidavit of Publication

State of Washington }
County of Snohomish } ss

Michael Gates being first duly sworn, upon oath deposes and says: that he/she is the legal representative of the Everett Daily Herald a daily newspaper. The said newspaper is a legal newspaper by order of the superior court in the county in which it is published and is now and has been for more than six months prior to the date of the first publication of the Notice hereinafter referred to, published in the English language continually as a daily newspaper in Snohomish County, Washington and is and always has been printed in whole or part in the Everett Daily Herald and is of general circulation in said County, and is a legal newspaper, in accordance with the Chapter 99 of the Laws of 1921, as amended by Chapter 213, Laws of 1941, and approved as a legal newspaper by order of the Superior Court of Snohomish County, State of Washington, by order dated June 16, 1941, and that the annexed is a true copy of EDH995904 NOA PA24-014 as it was published in the regular and entire issue of said paper and not as a supplement form thereof for a period of 1 issue(s), such publication commencing on 05/09/2024 and ending on 05/09/2024 and that said newspaper was regularly distributed to its subscribers during all of said period.

The amount of the fee for such publication is $86.12.

Subscribed and sworn before me on this 9th day of May, 2024.

Linda Phillips
Notary Public
State of Washington
My Appointment Expires 8/29/2025
Commission Number 4417

Notary Public in and for the State of Washington.

COMM DEVEL - CITY OF MARYSVILLE | 88522148
MARISA NISHIMURA

MARYSVILLE

CITY OF MARYSVILLE
COMMUNITY DEVELOPMENT DEPARTMENT
501 Delta Avenue • Marysville, WA 98270 • (360) 363-8000
NOTICE OF APPLICATION

File Number: PA24-014
Project Title: Williams Pointe Subdivision
Applicant: Keystone Land, LLC
Project Contact: Tom Abbott, Solid Ground Engineering
8105 166th Ave NE, Redmond, WA 98052
Project Location: 7315 44th St NE
APN: 30053500303600, 30053500303700, 00590700018101, 29050200200400

Date of Completeness: May 1, 2024

NOTICE IS HEREBY GIVEN THAT AN APPLICATION WAS MADE FOR THE FOLLOWING PROPOSAL:

The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE.

The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.

Existing Environmental Documents: SEPA Environmental Checklist; Traffic Impact Analysis; Geotechnical Report; Critical Area Report; Buffer Mitigation Planting Plan; Preliminary Drainage Report

Public Hearing: An Open Public Record Decision Hearing is required for this application; a subsequent Notice of Hearing will be published at a later date.

Public Comment Period: Written comments must be submitted to the contact person listed below by 5:00 PM on May 28, 2024.

Document Availability:
http://docs.marysvillewa.gov/ntcomnet/public/?folder=74a9ab27

ANY PERSON HAS THE RIGHT TO RECEIVE NOTICE, PARTICIPATE IN ANY HEARINGS, REQUEST A COPY OF THE FINAL DECISION AND APPEAL THE DECISION AS PROVIDED BY LAW.

For project information or to become a party of record, please contact:
Emily Morgan, Senior Planner
(360) 363-8216
emorgan@marysvillewa.gov

Published: May 9, 2024. EDH995904

MARYSVILLE

AFFIDAVIT OF POSTING

NOTICE OF APPLICATION: 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1-47 are proposed on parcels north of 44th St NE with Lots 48-59 located on a parcel south of 44th St NE.

The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The application has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.

File Number: PA24-014 Wililams Pointe Subdivision Reviewed by: _____

Place Posted	Date Posted	Signature
1. Property: signs - # 2	5.10.2024	EM
2. City Hall	QR	----
3. Publication in Everett Herald mail to: legals@heraldnet.com	Emailed 05/07/2024	MN
4. Mailings (300') #	05/07/2024	MN
5. MIRS/NewsFlash	5.8.2024	EM
6. Lakewood P.O. (if requested)	QR	---

COMMUNITY DEVELOPMENT DEPARTMENT
501 Delta Avenue ◆ Marysville, WA 98270
(360) 363-8000

May 23, 2024

Tom Abbott
Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

Re: Williams Pointe Subdivision – PA24-014 – Technical Review 1
7315 44th St NE

Dear Tom,

After preliminary review of the above referenced proposal, the following comment(s) are provided:

CITY OF MARYSVILLE COMMUNITY DEVELOPMENT – PLANNING

Emily Morgan, Senior Planner
360.363.8216 | emorgan@marysvillewa.gov

SUBDIVISION COMMENTS

1. Include File Number PA24-014 on all future correspondence, in addition to all site, civil and landscape plans.
2. All lots under 5,000 sq. ft. would be required to be meet the development provision of MMC 22C.010.310 for *Small lot single-family dwelling development standards.*
3. Per MMC 22G.090.580, a 6 ft. sight obscuring fence shall be required if: during grading plan review, the existing grade will be increased by a 2 ft. or greater vertical grade change and the grade increase causes the new lots be at a higher elevation than the abutting property.

   Based on this requirement, a fence would be required along the northern property boundary of the site north of 44th St NE.

LANDSCAPE PLAN COMMENTS

Prior to civil construction plan approval, a detailed landscape plan depicting all the applicable elements outline in MMC 22C.120 and MMC 22G.090.570 shall be approved. **Based on a cursory review of the proposed landscaping plan, staff has the following comments:**

4. Significant trees, which include evergreen trees eight inches in diameter or greater and/or deciduous trees 12 inches in diameter or greater measured four and one-half feet above grade, shall be retained as follows:

   4.1. Perimeter landscaped areas that do not constitute a safety hazard shall be retained.

   4.2. To provide the best protection for significant trees during the construction stage, the applicant shall install a temporary, five-foot-high, orange clearing limits construction fence in a line generally corresponding to the dripline of any significant tree(s) to be retained. All such fencing

shall be installed and inspected by the community development department prior to commencement of site work.

There appear to be many trees along the perimeter of the proposed development that would be subject to these requirements. Please demonstrate tree retention of the significant trees and provide a recommendation from a certified arborist for the trees evaluated to be retained. If said recommendation determines that it is not feasible or desirable to retain significant trees, then a planting plan to provide effective replacement of the removed significant trees is required.

5. Stormwater management facilities are required to have a 5ft. L5 landscape buffer. Planting areas may incorporate no more than 30 percent deciduous plantings due to maintenance and pond performance constraints. Please provide confirmation that the proposed planted buffer for Tracts 996 and 998 would meet this standard.

CRITICAL AREA REVIEW

6. Based on comments received by the Tulalip Tribes (comments attached) as well as findings made while reviewing the application materials, there appear to be discrepancies with the critical area reports and wetland delineations for the subject property. A report was conducted in 2019 by Wetland Resources that concluded that Wetland A was a Category I wetland with a 125 ft. buffer. This conclusion was further confirmed with a delineation prepared by Raedeke in 2022 for the previous land use application (PA22-024) which again, concluded Wetland A to be a Category I wetland. However, the current report conducted by Wetland Resources concludes that Wetland A is a Category II with a 100 ft. buffer.

   Based on these conflicting reports, please provide justification as to why the Category changed. A 3rd party peer review may be required. The mentioned reports may be viewed **HERE**.

Enclosed are the review comments received from other departments and agencies. After you have had an opportunity to review, please let me know what technical review comments you need clarification on. Once received I can set up a conference meeting with all of the applicable city and agency representatives, if needed. If you have any questions, please do not hesitate to contact me at 360.363.8216, or by e-mail at emorgan@marysvillewa.gov.

Sincerely,

Emily Morgan

Emily Morgan
Senior Planner

From: Dennis O"Brien
To: Emily Morgan
Subject: [External!] Comments on PA24-014
Date: Sunday, May 19, 2024 4:34:18 PM

[CAUTION:] This email originated from outside the City of Marysville. **Do not click links or open attachments** unless you recognize the sender and know the content is safe. Contact helpdesk if you have any concerns or questions.

Hello Emily,

I would like to make several comments on the proposed development along 75th Ave NE and 44th St NE (PA24-014). The postcard I received in the mail seemed to direct me to make my comments to Tom Abbott of Solid Ground Engineering but did not give me either phone number nor email address for him. I am submitting my comments to you directly but will also ask you to send me his contact information if I need to submit them to him as well.

For your information, I own the property that abuts the development on the east side of the portion that is east of the proposed extension of 75th Ave NE.

My comments are:

1. Is there a requirement for recreational open space for a project this size?
   Many of the developments that have been going in in this area have recreational (e.g. basketball, Frisbee golf, groomed grass, etc) open space. There are no recreational facilities close by so It seems that this one would include some.
2. Are street parking and street width acceptable?
   Most of the developments end up with cars parked wherever it is not disallowed. From the looks of RG-01 of the civil plans it looks like the majority of the 75th Ave extension will allow parking on the east side. This might be okay but the width of 75th has been decreased from 36' to 28'. If 75th gets filled with parked cars on the east then two way traffic will be hindered to the point of needing to take turns. You should consider widening 75th to 36' for it's entire length.
3. How deep will the sewer at the east end of the "Road A" stub?
   By setting the depth a little deeper that the minimum the new sewer will be able to service a large part of the property to the east eliminating the need for a future lift station.
4. Roadway line-of-site (LOS) issues:
    1. 75th Ave looking east to 44th St NE:
        1. Sheet RG-01 gives the LOS as 200'. Where did this number come from? Chapter 1260 of document M22-01.21 gives criteria on stopping sight distances. I'm not sure if this is the controlling document but it is a WSDOT document. In any event, paragraph 1260.03(1)(b) gives the Design Stopping Sight Distance of 250' for a 35 mph road (which is the speed limit on 44th St NE). In addition, chapter 1260.03(2) gives the effect of grade. The grade of 44th St NE just east of the proposed 75th Ave NE intersection is ~-8% which increases the 35mh distance to between 271' and 287'.
        2. 44th St NE is a straight shot for about a mile. The proposed intersection is right in the middle. Even though the speed limit on 44th St NE is 35 mph the practical speed is somewhat higher. 35mph should be considered a minimum as many cars are traveling at 40mph or more.

2. 75th Ave just north of 44th St looking north:
    1. There are two proposed lots (1 & 2) that have driveways on 75th Ave just north of 44th St. Assuming that 75th will be a 25mph road we see that the stopping sight distance is 155' (again, from chapter 1260 of document M22-01.21) and, from sheet PR-03 the grade just north of 44th on 75th Ave approaches -10% which increases this to 173' (again, from chapter 1260.03(2)). While I am not sure if this is the correct application of the stopping sight distances it does seem that these two driveways will be at risk for accidents. Is there sufficient LOS here?
5. Adding slope to neighbor's property:
   In order to achieve the proposed 200' LOS east on 44th St NE sloped grading is proposed on the property the the east of 75th Ave NE (owned by Greg Williams). This grading will add slope to about 20' of his property on the west and 10' on the south. To achieve ~280' (see 4.1 above) this may even need to be more. This is a slope that he will likely need to maintain forever. As I look at the road and grading plan RG-01 I see that the developer proposes numerous retaining walls throughout the property to maintain level plots - a major benefit. It seems that that courtesy should be extended a neighbor whose property he is affecting. by replacing the proposed slope with an additional retaining wall. I believe that Williams should end up with a level piece of property that is easily maintained.
6. There may be a way to mitigate items 4 and 5 above by not allowing 75th Ave NE to intersect 44th St NE:
    1. This eliminates the LOS issue with 44th St (4.1.1 above).
    2. That proposed portion of 75th Ave NE that proceeds south of the southernmost Road A intersection could be turned into a driveway rather that a street. This eliminates the LOS issue on 75th Ave (4.1.2 above)
    3. If the driveway proposed in 6.2 did not slope as much as the proposed extension of 75the Ave this could minimize any sloping required on the Williams property and perhaps constrain it to just the current easement. This eliminates or minimized the sloping/retaining wall issue (5 above).
7. There are several large cedar trees along the west edge of the O'Brien property (my property) that I would like to be preserved.
   I'm not sure what needs to be done here but I'm sure that the roots of these trees extend onto the proposed development and I'd like to see a plan to make sure they are not damaged (at least too much).
8. I would like to have a fence built along the west edge of my property by the developer.

Regards,
Dennis O'Brien
425.350.1899

From: todd conway
To: Emily Morgan
Subject: [External!] road extension 73rd st ne
Date: Wednesday, May 8, 2024 5:55:08 PM

You don't often get email from toddconway47@gmail.com. Learn why this is important

[CAUTION:] This email originated from outside the City of Marysville. **Do not click links or open attachments** unless you recognize the sender and know the content is safe. Contact helpdesk if you have any concerns or questions.

Good afternoon was told to reach out to you about the plans to extend 73st from 40th st ne to 44st ne. Neighborhood is asking what the purpose will be and how it will affect our neighborhood through traffic.When will construction start and finish. if you would be so kind to send me info so i can pass on to the concerned parents and residence. thank you have a good day

From: Todd Gray
To: Emily Morgan
Subject: [External!] RE: Request for Review - Williams Pointe Subdivision - PA24-014
Date: Tuesday, May 21, 2024 2:41:06 PM
Attachments: image005.png
E06-Critical Areas Report-Marysville 44th PRD-PA22024.pdf
Wetland Resources_3.1.2019.pdf

[CAUTION:] This email originated from outside the City of Marysville. **Do not click links or open attachments** unless you recognize the sender and know the content is safe. Contact helpdesk if you have any concerns or questions.

Hi Emily,

I'm glad the stormwater facilities will be kept within on-site tracts rather than the City parcel. I am concerned, however, about a discrepancy in Wetland classification. Wetland A, per Wetland Resources' April 2024 delineation, is identified as Category II, with a 100ft buffer. However, Wetland Resources had previously identified this wetland as Category I, with a 125ft buffer, in 2019. This delineation was later confirmed by Raedeke Associates in 2022. Why has this classification changed, suspiciously to the developer's benefit?

Thank you,

Todd Gray
Environmental Protection Ecologist
The Tulalip Tribes | Natural Resources Dept.
360-716-4620 | toddgray@tulaliptribes-nsn.gov

-----Original Appointment-----
From: Emily Morgan <emorgan@marysvillewa.gov>
Sent: Tuesday, May 7, 2024 11:35 AM
To: Chris Holland; Haylie Miller; Kacey Simon; Shane Whitney; Ken McIntyre; Kim Bourns; Brian Merkley; Don McGhee; Susie Carver; Tom Maloney (TMaloney@mfdrfa.org); Danny Hagen; Jesse Birchman; Jesse Hannahs; David Jackson; Devin Childe; Karina Unruh; Matthew Eyer; Nate Dickey; Ryan Carney; Billy Gilbert; Jason Crain; Shane Freeman; Kim Bryant; Ryan Keefe; Tim King; Mike Snook; robert.larson@ziply.com; robert.nance@ziply.com; Dave Brooks; Wicklund, Mary; SPW-Contact.pwCMS; C Stevens; Kerry Lyste; Sam Barr; Tracey Boser; Kurt Nelson; Todd Gray; Jeff Laycock; Max Phan; lisa_gonzales@msvl.k12.wa.us; greg_dennis@msd25.org; Cochoit, Ryan J CIV (USA); Doug Gresham; Neil Molstad; r4cplanning@dfw.wa.gov; sepa@dahp.wa.gov
Subject: Request for Review - Williams Pointe Subdivision - PA24-014
When: Tuesday, May 21, 2024 12:00 AM to Wednesday, May 22, 2024 12:00 AM (UTC-08:00) Pacific Time (US & Canada).
Where:

WARNING This email originated outside of our organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

EST. 1891
MARYSVILLE
WASHINGTON

THIS IS A REQUEST FOR REVIEW (RFR) WITH COMMENTS REQUESTED TO BE RETURNED BY MAY 21, 2024	
File Number:	PA24-014 - (Related Files: PA22-024 / PreA24-002)
Project Title:	Williams Pointe Subdivision
Project Description:	The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE. The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.
Applicant:	Joe Long, Keystone Land LLC / Tom Abbott, Solid Ground Engineering
Project Location:	7315 44th St NE
APNs:	30053500303600, 30053500303700, 00590700018101, 29050200200400
Application Materials:	http://docs.marysvillewa.gov/htcomnet/public/?folder=74a9ab27

	Or via LF: CoM\Community Development\Planning\PA24-014 Williams Pointe Subdivision
Please return comments via e-mail to emorgan@marysvillewa.gov on or before **MAY 21, 2024**	

If you have any questions regarding the application, please let me know.

Thank you,

Emily Morgan (she/her)
Senior Planner
501 Delta Ave
Marysville, WA 98270
360.363.8216 Direct

How are we doing? Please take our survey and let us know!

COMMUNITY DEVELOPMENT DEPARTMENT
501 Delta Ave Marysville, WA 98270

MEMORANDUM

Date: **May 8, 2024** **PA24-014**

To: **Emily Morgan, Senior Planner**

From: **Michael Snook, Building Official**

Re: **Project Name:** Williams Pointe Subdivision
Applicant: Joe Long, Keystone Land/Tom Abbott, Solid Ground Engineering
Proposal: The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE. The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.

Address: 7315 44th Street NE

In response to your request for review of the above project. Please see requirements below;

1. Applicant shall comply with any and or all provisions the 2021 Edition of the International Building, Residential, Mechanical, 2021 Uniform Plumbing Codes, and current Washington State Amendments.

2. All plans and permit applications will be required to be submitted electronically as part of their submittal process. One (1) complete set of building plans, structural calculations, and 2021 Washington State Energy Code work sheets.

3. Contact our office if you have questions in regards to permit applications, checklists and/or handouts that you and/or your design team will be preparing plans for on your project.

4. If any demolition of structures is proposed, and you are unsure if permits will be required for the removal of any structures. Please contact the Building Division at 360-363-8100, to ask any specific questions. An asbestos report will be required for each demo permit.

5. Separate permits will be required for any proposed rockeries or underground storm vaults. One (1) complete set of building plans, structural calculations, site plan, and Geotech Report are to be submitted for review.

6. A grading permit will be required. A Geotechnical report shall be submitted to the City for this project. This is to be an in-depth report to address the following:

    - Soil Classification
    - Required Drainage Systems
    - Soil Compaction Requirements
    - Type of Footings, Foundations, and Slabs Allowed
    - Erosion Control Requirements
    - Retaining Walls
    - Fill and Grade
    - Final Grade

Please provide the below information in regards to the International Building requirements;

1. The building structure will be required to be designed under the 2021 IBC, Chapter 16, and Structural Design Requirements. The seismic zone criteria is to be established under the guidelines of a Washington State Licensed Architect and/or Structural Engineer.

2. Please provide scaled floor plans with square footage.

3. Show on the plans the type of building materials proposed, and if required, what type of fire-resistant construction will be required.

4. Site plan is to show the distance from the proposed structure to the property lines, from all sides of the building.

5. A Fire Sprinkler system may be required. The applicant is to verify this requirement with the Fire Marshal's Office.

6. All Electrical installations are to be permitted, inspected and approved through the City. The current code is NEC 2023 with WCEC Amendments. A separate application and maybe plans will be required.

7. Special Inspection may be required. The list of the type of inspections shall be indicated on the plans by the Engineer of Record. The owner is to notify the City of the registered special inspection agency prior to permit issuance.

8. **Building application for plan review will be approximately 4-6 weeks for first-time plan review comments.**

We look forward to your project coming to our City!

If I may be of any further assistance, please feel free to contact me.

Michael Snook, Building Official, 360-363-8210 or msnook@marysvillewa.gov during office hours 7:30 am – 4:00 pm, Monday through Friday.

From: Kim Bourns
To: Emily Morgan
Subject: PA24-014 WILLIAMS POINTE PRELIMINARY PLAT MAP
Date: Tuesday, May 21, 2024 8:18:09 AM
Attachments: image001.png
image002.png

Hi, Emily.
I am not able to review the preliminary plat boundary because there was only one title report provided for only one of the four parcels included in the plat. I will need the other three title reports to do my review.
Thanks.

Kimberly Bourns, PLS
Engineering Technician
City of Marysville | Public Works
360.363.8106 Office
360.722.2167 Cell

MEMORANDUM

TO: Emily Morgan – Senior Planner

FROM: Jesse L. Hannahs, P.E. – Traffic Engineering Manager

DATE: May 23, 2024

SUBJECT: PA 24-014 – ~~Marysville 44~~ Williams Pointe

I have reviewed the Pre-application Site Plan for the proposed Williams Pointe Subdivision at 7212, 7315 & 7417 44th ST NE and have the following comments:

1) Traffic impact fees will be required from the City and depending on trip generation/distribution, may be required from the County and State.
2) A Traffic Impact Analysis (TIA) will be required.
    a. TIA is acceptable.
3) Per EDDS Section 3-212 and based upon history of concerns near subject locations, Intersection (entering) Sight Distance analysis shall be performed.
    a. Perform sight distance analysis at proposed intersections of:
        i. 75th Ave NE & 44th ST NE
            1. Previous approved development could not meet sight distance requirements without additional roadway improvements to alleviate sight distance concerns.
            2. Provide sight distance analysis based upon current proposed development for evaluation and approval.
            3. Previous development had an approved variance. Will a variance be required based upon current proposal?
4) Per EDDS 3-506, street lighting will be required.
    a. 44th ST NE:
        i. Street Lighting upon 44th ST NE shall be PUD installed fiberglass pole installation type street lighting.
        ii. Street shall be designed as collector arterial utilizing 200 watt equivalent LED fixtures.
    b. Proposed Residential Streets:
        i. Street Lighting shall be PUD installed fiberglass pole installation type street lighting.
        ii. Streets shall be designed as collector arterial/residential utilizing 100 watt equivalent LED fixtures.
    c. Spacing of fixtures should be approximately 180'-220'.
    d. As part of civil construction approval proposed PUD street lighting locations shall be provided by the City for incorporation into the PUD site electrical plans.
    e. Contact Eddie Haugen of Snohomish County PUD at (425) 783-8276 or wehaugen@snopud.com for more information regarding PUD street lighting.

MARYSVILLE
PUBLIC WORKS

(360) 363-8100

Public Works
80 Columbia Avenue
Marysville, WA 98270

5) A signing and marking plan shall be required as part of civil construction plans for 44th ST NE and residential streets.
    a. Channelization:
        i. 44th St NE to the extent feasible with development project shall provide for planned roadway lanes via striping.
    b. Signing:
        i. EDDS Standard Plan 3-805-001 shall be included upon signing plan sheet.
        ii. Parking restrictions shall only be installed on outside of 90 degree corners and within cul-de-sac(s).
6) Neighborhood Driveway placement:
    a. To the extent feasible, all driveways shall be staggered (rather than directly opposite each other).
        i. Driveway placement as currently proposed would be acceptable.

MARYSVILLE FIRE DISTRICT
REGIONAL FIRE AUTHORITY
Fire Marshal's Office
1635 Grove St. Marysville, WA 98270 - (360) 363-8500
MFInspectors@MFDRFA.org - www.marysvillefiredistrict.org

To: Emily Morgan, Senior Planner
From: Brian Merkley, Deputy Fire Marshal
Date: May 14, 2024
Subject: PA24-014 ~ Williams Point Subdivision ~ 7315 44th St NE

I have completed a review of the plans for this project proposing development of a 13.09-acre site for residential development for a proposed 59 - SFR lot subdivision. Lots 1-47 are proposed on parcels north of 44th St and lots 48-59 located on the parcel south of 44th St. (Related file PA22-024 & PreA24-002)

Additional comments related to fire code compliance for this project are noted below:

1. **GENERAL INFORMATION:**
   a. The project shall comply with current fire code requirements (2021 IFC) including WA State and local City of Marysville amendments to the fire code, city design standards, and all applicable NFPA standards, including IFC Chapter 33 and NFPA 241 construction codes.
   b. Fire marshal approval of fire access and fire hydrant/water supply systems is required as part of the civil construction plan review and approval process.

2. **WATER RELATED:**
   a. ***Lots 16, 17 will require residential fire sprinklers due to distance from ROW. This shall be reflected on the civil plans. More lots may require sprinklers due to other factors such as number of stories. Please see item k for further details.***
   b. It is the developer's responsibility to see that adequate water for fire protection is attainable. The minimum required fire flow is determined using IFC Appendix B, and depends upon building sizes, construction types, and sprinkler systems. Proof of fire flow will be required.
   c. Documentation/certification of available water supplies for providing the required fire flows is required for final approval of the water system for this project and prior to building construction. Check with the city Public Works Dept. for water system information. ***No information has been provided regarding available fire flow.***
   d. The minimum required fire flow for hydrants protecting SFR dwellings is 1,000 gpm (with 20-psi minimum residual pressure) for dwellings not exceeding 3,600 SF in size.
   e. The minimum required fire flow for dwellings exceeding 3,600 SF is 1,500 gpm.
   f. Maximum hydrant spacing for the proposed SF use is 600 ft. ***Hydrant locations appear adequate.***
   g. Fire hydrants shall comply with city Water Design Standard 2-060 Hydrants, including 5" Storz fittings, with blue reflective hydrant markers to be provided in

the roadways, located four inches off the centerline on the hydrant side of the road.

h. Fire hydrants with approved water supply must be in service prior to building construction.
i. Fire hydrant coverage shall be provided along all roads and at intersections. "Fire hydrants meeting city specifications shall be installed on all extensions of the city water system at the time such extensions are constructed. All hydrants shall be owned and maintained by the city. The location and frequency of fire hydrants shall be specified by the city utility department and fire department; provided, that fire hydrants in single-family residential zones shall be spaced not more than 600 feet apart" (MMC 14.03.050).
j. The location of fire hydrants requires fire marshal approval on civil construction plans.
k. Future homes to be constructed may require residential sprinkler installation for a number of reasons, including: if homes are three or more stories tall, if fire flow from hydrants does not meet fire code requirements, if any part of homes is further than 200' from the public road ROW with no hydrant provided on-site, or to mitigate access deficiencies.
l. Where residential fire sprinklers may be required the developer should install a water service per Standard Plan 2-090-001 Full ¾" x 1" Meter Service. Under this plan a 1" tap is made at the water main and 1" piping is run to the 1" meter setter. If in the end a ¾" water meter will suffice then all that is required is to install two reducer bushings with the ¾" water meter. A single service tap should be used where sprinklers are required, not a double service installation.

3. **ACCESS RELATED**: The project narrative states that "… 75th Ave NE will be extended southward from the development to the north down to 44th St NE". The north half of 75th will be a full width ROW, and the south half a half street.
    a. Dead end public streets serving 5 or more lots on a private/public road, or length of dead end exceeds 150 feet, an approved turnaround is required. Turnarounds shall comply with city standard plans. ***Plans show 8 lots being accessed from stub road (lots 26-33) with lot 30 access via autocort. A turnaround will be required per EDDS 3-207.***
    b. An adequate access route for fire apparatus must be in service prior to any building construction.
    c. Access for firefighting operations along all sides of all buildings is required. A minimum 5' wide access is required for SF dwellings. All parts of building exteriors should be accessible for firefighting by an approved route around the building, and be within 150 feet of a minimum 20' wide fire apparatus access.
    d. "**NO PARKING - FIRE LANE**" signs are required on both sides of all roads that are 26 feet wide or less. The signage shall be identified on the approved Civil Plans. (MMC 9.04.101, 2018 IFC Appendix D103.6.1)
    e. Minimum turn radius shall be 25' inside / 45' outside on all public ROW.
    f. The city address committee will determine road names and address numbers for the lots.

SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Providing quality water, power, and service at a competitive price that our customers value

May 14, 2024

Emily Morgan
City of Marysville
80 Columbia Avenue
Marysville, WA 98270

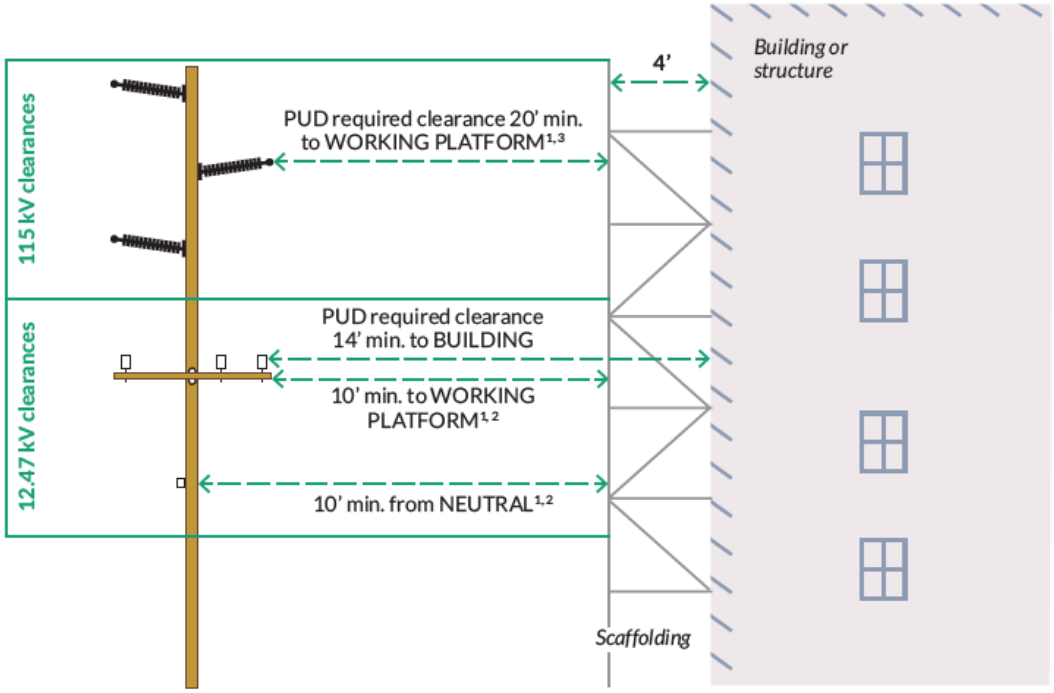
Dear Ms. Morgan:

Reference: PA24 014 Williams Pointe Subdivision

District DR Number: 24-10-070

The District presently has enough electric system capacity to serve the proposed development. However, the existing District facilities in the local area may require upgrading. Cost of any work, new or upgrade, to existing facilities that is required to connect this proposed development to the District electric system shall be in accordance with the applicable District policy.

The developer will be required to supply the District with suitable locations/easements upon its property for any electrical facilities that must be installed to serve the proposed development. It is unlikely that easements will be granted on District-owned property, or consents granted within District transmission line corridors.



1. NESC 234A2 – Horizontal clearances (with wind displacement) – 6 lb/ft² toward structure, final sag at 60° F
2. WAC 296-24-960 (3)(a)(ii) – Minimum clearance for lines rated 50kV or below
3. WAC 296-155-53408 (1)(a)(ii) – Crane clearances up to 350kV

Please be advised that per WAC 296-24-960 the minimum worker safety clearance from any District distribution conductor is 10 feet. **Therefore, the District requires a minimum 14-foot clearance from any structure to accommodate workers, scaffolding, and ladders. Minimum worker safety clearance from 115kV transmission wires is 20 feet.**

Three-phase service is needed to serve the plat; there are no transmission conflicts . Any relocation, removal or undergrounding of District facilities to accommodate this project and the worker safety clearances shall be at the expense of the project developer and must be coordinated with the PUD in advance of final design.

There are several critical area permit matters that will need to be addressed for utilities to be installed. Please include any required utility work in the scope of all applicable land use/development permits including for any planned over- or under-stream and wetland utility crossings and for the storm water permit.

The District policy requires the developer to provide a minimum 10-foot easement for underground electrical facilities that must be installed to serve the proposed development. In addition, the developer must maintain an 8-foot clearance between transformers and a 10-foot clearance between switch cabinets and any building/structures upon its property. Additional clearances may be required depending on the equipment in the area and accessibility of the equipment.

Please contact the District prior to design of the proposed project. For information about specific electric service requirements, please call the District's Plat Development team at (425) 783-8465.

Sincerely,

Mary Wicklund for

Mark Flury, Senior Manager
Transmission & Distribution System
Operations & Engineering

Cc: Tom Abbott – tabbott@solidgroundpnw.com

MARYSVILLE
PUBLIC WORKS

MEMORANDUM

TO: Emily Morgan, Senior Planner

FROM: Ryan Carney, Surface Water Inspector

DATE: 5/17/2024

SUBJECT: PA24-014 Williams Pointe Subdivision

1. The City has adopted the 2019 Stormwater Management Manual for Western Washington.

   (UIC rules apply to infiltration trenches, see Volume I chapter 4 UIC Program. Contact the Department of Ecology for permitting information.)

2. For residential projects triggering minimum requirements #6 Runoff Treatment and #7 Flow Control, the stormwater facility lot will be dedicated to the City. The HOA will receive an easement to maintain the landscaping on the exterior of the lot. This policy may be modified depending on facility design. The City will take operation and maintenance responsibility for residential stormwater facilities built for minimum requirements #6 Runoff Treatment and #7 Flow Control, the dedication method will depend on final design.

If you have questions regarding these comments, please contact me at 360-363-8140 or rcarney@marysvillewa.gov.

cc: Nate Dickey, Storm/Sewer Supervisor

(360) 363-8100

Public Works
80 Columbia Avenue
Marysville, WA 98270

Stormwater Covenant and Easement

Community Development Department 80 Columbia Avenue Marysville, WA 98270

(360) 363 -8100 Phone (360) 651-5099 FAX Office Hours: Monday – Friday 7:30 AM -4:00 PM

Instructions Page

For the Developer:

Does your Project trigger minimum requirements #6 Runoff Treatment, or #7 Flow Control AND the facility(ies) will be on private property?

If “no” then this covenant does not need to be recorded.

Otherwise, please complete the enclosed documents. The draft document should be submitted for review with the other civil plan documents. It does not need signatures at that time. Exhibit B-Facilities Maintenance Plan should include a map showing where the storm water features are located on the property and describe the maintenance requirements. Once the infrastructure is built, review the document. If construction altered the stormwater utility layout update the appropriate information. The documents must be signed by all parties with an ownership interest in the property (include additional signature blocks and notary acknowledgement forms as necessary). Have the final document signatures notarized. Record before final occupancy is issued.

Recording notes:

- Do not write within the one-inch border
- Type or print legibly and in an easily readable font
- Print documents single sided and provide original copies with original signatures

When Recorded, Return to:

City of Marysville
Community Development
80 Columbia Ave
Marysville, WA 98270

Stormwater Covenant and Easement
(MMC 14.15.155)

DOCUMENT TITLE: *Project Name* Stormwater Covenant and Easement
Grantor: *Property Owner Name*
Grantee: CITY OF MARYSVILLE, a Municipal Corporation
Legal Description (abbreviated):
Assessor's Parcel(s):
Address:
Reference Number(s):
City of Marysville Project No: City of Marysville Building Permit No:
****Note**** The Auditor/Recorder will rely on the information provided on this form. City staff will not read the document to verify the accuracy or completeness of the indexing information provided herein.

Stormwater Covenant and Easement
(MMC 14.15.155)

This Stormwater Covenant and Easement (the "Agreement") is executed in favor of the City of Marysville (the "City") by the undersigned owner(s) (the "Grantor") of the following described real property situated in the City of Marysville, Snohomish County, State of Washington (the "Property") (insert complete legal description):

(attach Exhibit A if necessary to fit full legal description)

WHEREAS, pursuant to Marysville Municipal Code Chapter 14.15, as may be hereafter amended, a condition of developing the Property requires that it have adequate stormwater drainage; and

WHEREAS, the Grantor has installed a private storm drainage system for the Property; and

WHEREAS, such a private storm drainage system will require ongoing maintenance as detailed in the approved Facility Maintenance Plan to ensure it operates as designed;

WHEREAS, the private storm drainage system includes the following specified drainage control facilities, which are documented in the drainage control plan drawing(s), as amended by record drawing(s) on file with the City of Marysville. The following runoff treatment or flow control facilities are onsite:

	Detention or Infiltration Pond		BMP T8.20 Sand Filter vault
	Detention or Infiltration Vault		BMP T8.30 Linear Sand Filter
	BMP T5.15 Permeable Pavements		BMP T8.40 Media Filter Drain
	Detention Tank/Pipes		BMP T9.10 Basic Biofiltration Swale
	BMP T5.16 Tree Retention and Tree Planting		BMP T9.20 Wet Biofiltration Swale
	BMP T5.17 Vegetated Roofs		BMP T9.30 Continuous Inflow biofiltration Swale
	BMP T5.20 Rainwater Harvesting		BMP T9.40 Basic Filter Strip
	BMP T5.30 Full Dispersion area		BMP T10.10 Wetponds-Basic and Large
	BMP T6.10 Presettling Basin		BMP T10.20 Wetvaults
	BMP T7.10 Infiltration Basins		BMP T10.30 Stormwater Treatment Wetlands
	BMP T7.20 Infiltration trenches		BMP T10.40 Combined Detention and Wetpool Facilities
	BMP T7.30 Bioretention Cells, Swales and Planter Boxes		BMP T11.10 API (Baffle type) Separator bay
	BMP T7.40: Compost-amended Vegetated Filter Strips (CAVFS)		BMP T11.11 Coalescing Plate (CP) Separator Bay

	BMP T8.10 Basic Sand Filter basin		Ecology approved Emerging Technology Manufacturer: Device Name:
	BMP T8.11 Large Sand Filter basin		

Now, therefore, the Grantor, on behalf of Grantor and Grantor's heirs, successors, and assigns, agrees to the following and hereby creates a covenant running with the land that shall be binding upon all parties and their heirs, successors, and assigns forever:

(1) The Grantor, on behalf of the Grantor and the Grantor's heirs, successors, and assigns, agrees to and shall:

(a) inspect and maintain the above described drainage control facilities in accordance with the provisions of Marysville Municipal Code (MMC) Title 14, the approved Facility Maintenance Plan (attached hereto as Exhibit B and incorporated by this reference), and any other provisions applicable to the facilities, as now and hereafter in effect;

(b) implement the terms of the drainage control plan required for development; and

(c) inform all future purchasers, heirs, successors, and assigns of the existence of the drainage control facilities and other elements of the drainage control plan and the limitations of the drainage control facilities.

(2) The Grantor, on behalf of the Grantor and the Grantor's heirs, successors, and assigns, hereby grants permission for authorized representatives of the City of Marysville to enter onto the Property for inspection, monitoring, correction, or abatement of conditions related to the Property's drainage control plan, drainage control facilities, MMC Title 14, or any other MMC provision applicable to drainage control, as now and hereafter in effect.

(3) If the private storm drainage system is not maintained in accordance with the approved or record drawing design, the Grantor, on behalf of the Grantor and the Grantor's heirs, successors, and assigns grants the City the right to inspect and repair the system and assess reasonable costs for the work that may be charged against the Property, the Property owner, or any beneficiary.

(4) The Grantor, on behalf of the Grantor and the Grantor's heirs, successors, and assigns:

(a) Agrees and acknowledges that the City is not responsible for the adequacy or performance of the drainage control plan or the drainage control facilities;

(b) Agrees to accept any and all risks of harm, loss, injury, or damage related to the drainage control plan or the drainage control facilities; and

(c) Hereby waives any right to assert any and all present and future claims against the City, whether known or unknown, for any harm, loss, injury, or damage occurring either on or off the Property, related to the drainage control plan, the drainage control facilities, or drainage

or erosion on the Property, except only for such harm, loss, injury, or damage that directly results from the sole negligence of the City.

(5) This Agreement shall be recorded in the real estate records of the Auditor's Office of Snohomish County, Washington. If any provision of this Agreement is held invalid, the remainder of the Agreement is not affected.

(6) The obligations of the Grantor and each of the Grantor's heirs, successors, and assigns under this Agreement shall terminate when that person sells, devises, or transfers the Property, or his or her interest therein, unless the obligation arises out of a claim of negligence or intentional act of that person.

Now, therefore, to this end, the Grantor, on behalf of the Grantor and the Grantor's heirs, successors, and assigns, hereby grants a perpetual easement to the City of Marysville and its authorized representatives to enter the Property, inspect the private storm drainage system, and make necessary repairs, with any expenses incurred being chargeable against the Property, the Property owner, and any beneficiary.

By: _____ Date: _____

Type signer's name here, Type signer's title or affiliation

Type company name here

Type address here

Type City, State, Zip here

By: _____ Date: _____

Type signer's name here, Type signer's title or affiliation

Type company name here

Type address here

Type City, State, Zip here

ACKNOWLEDGEMENT

(Individual)

STATE OF WASHINGTON)

)ss.

COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____

_____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument and acknowledged it to be his/her free and voluntary act for the uses and purposes mentioned in the instrument.

DATED this _____ day of _____, 20_____.

_____

_____

(Legibly print name of notary)

NOTARY PUBLIC in and for the State of

Washington, residing at _____

My commission expires _____

(Entity)

STATE OF WASHINGTON)

)ss.

COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____

_____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the _____ of _____ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED this _____ day of _____, 20_____.

_____

_____

(Legibly print name of notary)

NOTARY PUBLIC in and for the State of

Washington, residing at _____

My commission expires _____

ACKNOWLEDGEMENT

(Individual)

STATE OF WASHINGTON)

)ss.

COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____

_____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument and acknowledged it to be his/her free and voluntary act for the uses and purposes mentioned in the instrument.

DATED this _____ day of _____, 20_____.

_____

_____

(Legibly print name of notary)

NOTARY PUBLIC in and for the State of

Washington, residing at _____

My commission expires _____

(Entity)

STATE OF WASHINGTON)

)ss.

COUNTY OF SNOHOMISH)

I certify that I know or have satisfactory evidence that _____

_____ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument and acknowledged it as the _____ of _____ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED this _____ day of _____, 20_____.

_____

_____

(Legibly print name of notary)

NOTARY PUBLIC in and for the State of

Washington, residing at _____

My commission expires _____

EXHIBIT A

LEGAL DESCRIPTION

(Insert complete legal description):

Situated in the City of Marysville, County of Snohomish, State of Washington.

EXHIBIT B

FACILITIES MAINTENANCE PLAN

MARYSVILLE
PUBLIC WORKS

Memorandum

To: Emily Morgan

From: Krista Gessner, Cross Connection Specialist

Subject: PA24-014 Williams Pointe Subdivision

Date: October 27, 2022

In response to your request for review of the above project, please note the following items.

- Plumbing system is subject to applicable requirements of MMC Chapter 14.10 "Water Supply Cross-Connections" and WAC 246-290-490.
- A Double Check Detector Assembly (DCDA) is required for any non-flow through fire line that is connected to the city's water system.
- A Reduced Pressure Backflow Assembly (RPBA) is required immediately downstream of any irrigation meter and in an above ground hotbox if a chemical/fertilizer injection system is installed. If the irrigation system is not chemically injected, a DCVA is sufficient for this application. The DCVA may be installed in an in-ground meter type box or vault. In accordance with Design Standards 2-15-001
- If a well is on-site provide decommissioning report. If well is not decommissioned, a well disconnect inspection and DCVA will be required for all service connections.
- On-site inspections are to be performed by the City of Marysville Cross Connection Control Specialist at rough-in and final. 48 hours' notice is required, prior to inspection.
- Testing of all backflow prevention assemblies, by a Washington State Certified Backflow Assembly Tester, is required prior to occupancy use per MMC 14.10.120. Test report shall be forwarded to the City of Marysville Water Quality Office, prior to occupancy.
- All backflow assemblies are to be lead-free.

Any questions regarding these comments, and scheduling for onsite inspections should be directed to Billy Gilbert 360-363-8143 crossconnection@marysvillewa.gov

(360) 363-8100

Public Works
80 Columbia Avenue
Marysville, WA 98270

Traffic Mitigation Offer to Snohomish County

The applicant completes part one and submits it to the city with a completed county traffic worksheet. The city completes part two and sends it to the county. The county completes part three and sends it back to the city.

Part One to be completed by Applicant

Basic Development Information

Name of City in which development is located City of Marysville

Name of Proposed Development Williams Pointe

City Project File Number (if known)

Name of Applicant

Address of Applicant

Proportionate Share Calculation: *Choose Option A or B*

☐ Option A: Based on a percentage of the County's adopted impact fee (Attach traffic worksheet.)

1. The applicable percentage of the County's fee: _____%

2. Net New Average Daily Traffic: _____ADT

3. The adopted County impact fee for this development: _____$/ADT

4. Total Proportionate Share Amount: $_____

☒ Option B: Based on a comprehensive traffic study (Attach traffic worksheet and traffic study)

__X__ No road improvements are impacted. Hence, proportionate share amount is zero.

_____T he following road improvements are impacted. The calculation of proportionate shares is summarized below.

List by Names/Description the Impacted County Projects (attach other pages if necessary)	County Project ID#	PHTs Impacting Project	Capacity Cost per PHT	Proportionate Share Obligation per Impacted Project
1. There are not any Snohomish County improvement projects that will be impacted by 3 directional PM peak-hour trips generated by the development. Snohomish County traffic mitigation fees should therefore not be required for the development according to the provisions of the interlocal agreement.				

4. Total Proportionate Share Amount (sum of obligations for each impacted project) $ 0.00

☐ **Trip Distribution and Assignment if Required**

If required, attach AM and PM peak-hour trip distribution and assignment. (Attach traffic worksheet showing whether or not it is required and traffic study).

☒ **Mitigation of Other Impacts if Required for Developments Generating More than 50 Peak-Hour Trips**

Mitigation of Impacts on Level of Service

__X__No impact or not applicable ____ Mitigation as described in attached traffic study.

Mitigation of Impacts on Inadequate Road Conditions

__X__No impact or not applicable ____ Mitigation as described in attached traffic study.

Mitigation for Impacts on Access or Circulation

__X__No impact or not applicable ____ Mitigation as described in attached traffic study.

☒ **Written Offer**

The Applicant hereby voluntarily agrees to pay the total proportionate share amount shown above for impacts of the proposed development on the capacity of Snohomish County roads and provide mitigation of all other impacts as indicated above and described in attached documents.

BY: _____Date_____

Signature by Authorized Official of Applicant or Authorized Representative

Print Name and Title _____

Instructions to Applicant. Submit this offer, a completed county traffic worksheet, and any other attachments to the city with your initial application or send directly to Deb Werdal, Snohomish Co. DPW Traffic, 3000 Rockefeller M/S 607, Everett WA 98201.

Part Two: To be completed by the City

Receipt of Written Offer and Attachments by City and Routing to County

Name of Proposed Development Williams Pointe Subdivision

City Project File Number PA24-014

Date Received 5.1.2024

City Staffer Assigned to Project Emily Morgan

Address 501 Delta Ave, Marysville, WA 98270

Phone 360.363.8216

Instructions to City. Send this offer and all attachments to Deb Werdal, Snohomish Co. DPW Traffic Operations, 3000 Rockefeller M/S 607, Everett WA 98201. Send copy to staffer shown above.

BY: EM Date 5.1.2024 Emily Morgan, Senior Planner

Initialed by City Staffer | Print Name and Title

Part Three: To be completed by Snohomish County

Receipt of Offer and Attachments by Snohomish County and Routing Back to City

Name of Proposed Development

City Project File Number

Received by: CD Date 05/07/2024 Caleb Duhnke, Engineer II - Traffic Operations

Initialed by County Staffer | Print Name and Title

Snohomish County Mitigation Request to City

Snohomish County has reviewed the traffic study worksheet and mitigation offer submitted by the applicant and has determined as follows:

☑ Snohomish County requests that the City impose the mitigation offered above as a condition of approval for the Development. Snohomish County agrees to accept changes in the mitigation payment amount shown above resulting from TDM or lot-yield adjustments approved by the City.

☐ Snohomish County requests that the City require additional supplemental information to adequately evaluate the proposed development's impacts. ☐ The information requested is shown in the notes below.

BY: Caleb Duhnke Date 05/28/2024 Caleb Duhnke, Engineer II - Traffic Operations

Signature by Authorized County Staffer | Print Name and Title

Routing Back to City

Instructions to County Send this offer and all attachments to the City Staffer shown in Part Two above.

Sent by:

Date

Initialed by City Staffer | Print Name and Title

Notes

Snohomish County agrees with the $0 offer amount.

NOT TO SCALE

SR-9 AT
S LAKE STEVENS ROAD

SR-9 AT
32ND STREET SE

67TH AVENUE NE

83RD AVENUE NE

SUNNYSIDE BOULEVARD

71ST AVENUE NE

79TH AVENUE NE

SOPER HILL ROAD

SITE

528

9

92

147

420

10% 21% 1% 2% 2% 19% 1% 4% 41% 7% 52% 3% 1% 20% 31% 17% 2% 4%

Trip Distribution %
Key Intersection
Development Site
Inbound Trip Path
Outbound Trip Path
XX Turning Movement Volumes
AWDT (Outbound Trips / Inbound Trips)

Kimley»Horn

FIGURE 3: 2027 OPENING YEAR TRIP DISTRIBUTION - PM PEAK HOUR
WILLIAMS POINTE - CITY OF MARYSVILLE, WA (090224047)

Snohomish County Traffic Worksheet and Traffic Study Requirements for Developments in the City of Marysville

Snohomish County government, through an interlocal agreement (ILA) with the City of Marysville, may request traffic mitigation measures from any new development in the city that impacts roads in the unincorporated county. The City will impose the requested mitigation to the extent that the City determines that the mitigation is reasonably related to the impacts of the development. To determine the impacts, and to determine reasonable mitigation measures, the City of Marysville requires a traffic study from any development in the city that may have impacts on county roads. This 'traffic study' may be as simple as completing sections one and two of the county traffic worksheet below, or having a professional traffic engineer conduct a formal traffic study consistent with the requirements in section three below.

- If a development generates less than ten peak-hour trips and the applicant chooses Option A for mitigation payment (standard payment by percent of county impact fee), then the applicant will generally only have to fill out the first two sections of this traffic worksheet and complete a mitigation offer (see section four).
- However, if a development generates more than ten peak-hour trips, or if the applicant chooses Option B for mitigation payment (comprehensive impact analysis), then the applicant will have to fill out the first section of this worksheet, complete a separate traffic study consistent with the requirements in section three, and complete a mitigation offer (see Section Four).
- Applicants should submit all documents *to the City* as part of their initial submittal.
- Traffic study requirements for impacts on county roads are based on the County's traffic mitigation ordinance (Chapter 30.66B) and the city/county ILA. At the end of this document find references to the county contacts and county web site (sources for may of the documents related to traffic mitigation).
- Following review of the documents submitted, the County may request supplemental information and analysis as necessary to determine the impacts of the development in accordance with the city/county ILA. The City will require the proposed development to submit the supplemental information and analysis to the extent that the City determines that it is necessary to determine the impacts of the development.

Section One (1) Worksheet General Information

1. Name of Proposed Development Williams Pointe

   City Development File Number (if known)_____

2. Name, Address and Phone Number of Applicant_____

3. Development Site Address 44th Street NE at 75th Avenue NE alignments

4. Is it a residential or commercial development? Residential

5. Description of Development (size and specific type)_____
   57 new Single-Family Detached Residential Units

6. How many new vehicle trips are expected to be generated by the proposed development? (For many common types of developments this information can be provided by the city or the county. For more complex developments trip generation may have to be determined under section three below)

   40 AM Peak Hour 57 PM Peak Hour 537 Average Daily Trips (ADT)

7. Proportionate Share Impact Mitigation: All applicants have two options in determining the amount of their traffic mitigation payment:

   _____ For determining the amount based on a percentage of the county fee go to section two.

   _X_ For determining the amount based on a comprehensive traffic study go to section three.

Section Two (2) Proportionate Share Determined by Percentage of County Impact Fee

2(a) Calculation of Payment Amount

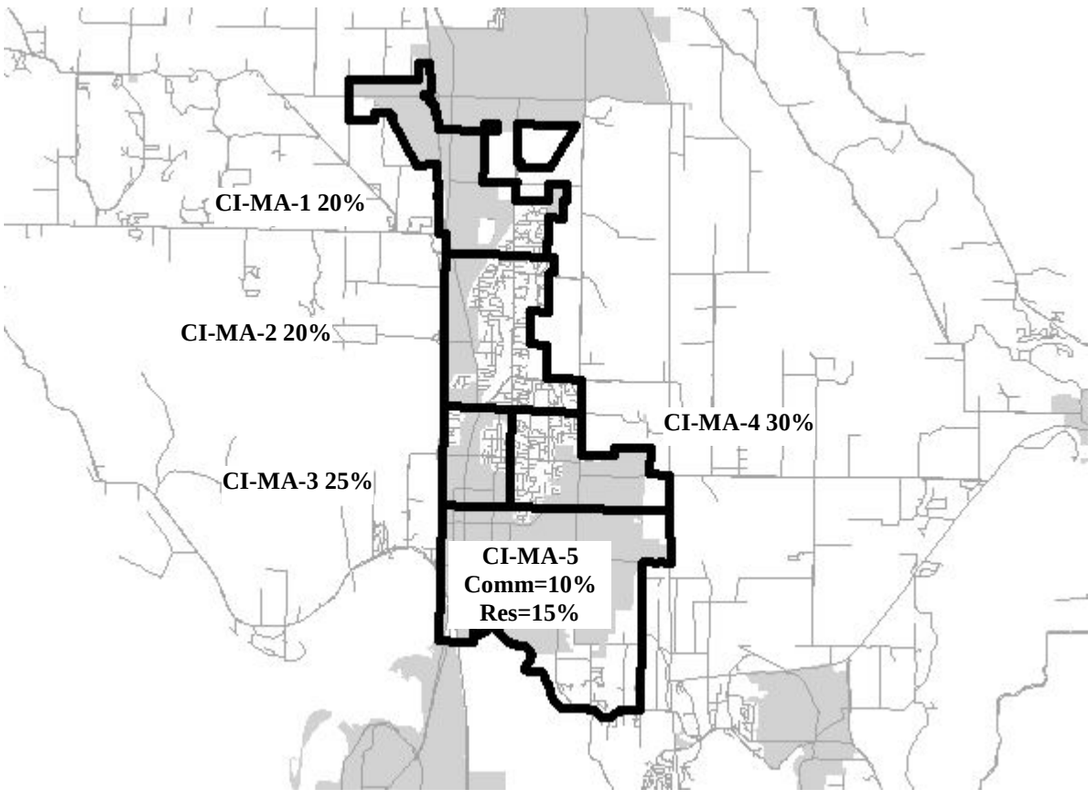
1. Standard default estimated percentage of trips impacting the City streets based on subareas (See below) _____%

or

2. Other Percentage: (Note: See author's qualifications in section three below.) Estimated percentage of trips impacting county roads from attached trip distribution: _____ %

Sub-Area ID #	* City Subarea Description	Residential Developments	Commercial Developments
CI-MA-1	North of 136th ST SE.	20%	20%
CI-MA-2	North of 100th ST NE and South of 136th ST SE.	20%	20%
CI-MA-3	North of 76th ST NE, South of 100th ST SE, and West of 51st AV NE.	25%	25%
CI-MA-4	North of 76th ST NE, South of 100th ST SE, and East of 51st AV NE.	30%	30%
CI-MA-5	South of 76th ST NE.	15%	10%

* Note: Boundaries are either street centerlines or imaginary extensions of street centerlines in places where the actual streets do not exist.



3. Development New Average Daily Trip Generation (ADT)_____

4. Type of Development (Residential or Commercial)_____

5. County Commercial Fee Rate $_____ 6. County Residential Fee Rate $_____

(Note: Consistent with county code and the ILA, developments pay the rate in effect at the time of their submittal. As of 07/13/11 the rates were $39 for commercial developments and $46 for residential developments. Through ordinance, the County Council can change these rates at any time, so consult with the County or look at Snohomish County Code 30.66B.330 to find the latest fee rates.)

7. Calculation of Proportionate Share Impact Mitigation

_____	×	_____	×	_____	=	$_____
#1 or #2 above: % of trips		#3 above: ADT		#5 or #6 above: Fee Rate		proportionate share mitigating payment

2(b) Determining whether or not an additional traffic study is necessary

Will the development generate more than 10 peak-hour trips *or* are there other impacts that need to be addressed (e.g., level of service, safety, or access and circulation)

_____ No. Skip section three and go to section four.

_____ Yes. Read the introduction to section three and skip to section 3(b).

Section Three (3) Traffic Study Requirements

Introduction: This section outlines requirements for traffic studies for impacts on County roads. If an applicant chooses (or is required) to complete a traffic study, then it should be submitted along with this worksheet and a mitigation offer. (Note on Author's Qualifications: A traffic study under this section must be conducted by an engineer licensed to practice in the state of Washington with special training and experience in traffic engineering and, preferably, membership in the institute of transportation engineers. For individuals/firms not on the City's approved list, the developer will provide, with the traffic study, the credentials of the individual or firm performing the traffic study certifying compliance with these qualifications.)

3(a) Proportionate share impact mitigation based on comprehensive traffic study

1. Development's Trip Generation and Distribution. Determine the PM peak-hour trip generation and distribution for the development consistent with Section 3(b) below.
2. Impacted Improvements. Determine which of the road sections with planned improvements in the county's impact fee cost basis (Transportation Needs Report Appendix D) are impacted by three or more development-generated *directional* PM peak hour trips (PM PHT).
3. Current Counts. For each impacted improvement, provide current traffic counts to determine the PM PHT.
4. Reserve Capacity. Determine "reserve capacity" for each impacted improvement by subtracting the current PM PHT from the maximum service volume (MSV) for the existing facility. Reserve capacity is set to zero if current PM PHT exceeds the MSV. For MSVs see County DPW Rule 4224.
5. New Capacity. New capacity is the incremental increase in PHT that could be accommodated with the planned improvement. Determine the new capacity of each impacted improvement by subtracting the current MSV from the future MSV after the improvement.
6. Chargeable Capacity. For each impacted improvement, add the reserve capacity to the new capacity.
7. Final Adjusted Cost. Find the cost of each impacted improvement and make any adjustments used by the County for tax credits (see Transportation Needs Report Appendix D).
8. Capacity Cost per Peak-Hour Trip. For each impacted improvement, determine the capacity cost per PM PHT by dividing the final adjusted improvement cost by the chargeable capacity.
9. Traffic Impacts. From step one above, take the *total* number of PM PHT (in both directions) impacting each planned improvement.
10. Proportionate Share. For each impacted improvement, determine the proportionate share impact mitigation by multiplying the capacity cost per peak-hour trip by the number of PM PHT impacting the improvement.

3(b) Trip Generation and AM and PM Peak Hour Trip Distribution and Assignment

Calculate AM, PM and Daily trip generation consistent with the ITE Trip Generation Handbook and Snohomish County Public Works Rule 4220. Determine the trip distribution and assignments consistent with the County's document titled "Format for Trip Distributions"(available at County web site, see below).

- Within the developments transportation service area (TSA) the distributions will be carried out to each key intersection at which the approach or departure volumes on any leg have three (3) or more peak hour trips. Get the most current list of key intersections on the web site described below. Trips should be distributed onto the road system as it is expected to be in six years.
- The distribution should be a schematic map showing the broad distributions of trips in terms of percentages on different roads. Show all City boundaries.
- The assignment should be a schematic map with the impacted key intersections identified by ID# and turning movements for each shown in separate diagrams on the same page or on different pages. The assignment should also be presented in tabular form listing each intersection by intersection ID#, and the number of trips at each movement.

3(c) Additional Analysis for Developments Generating More Than Fifty (50) Peak Hour Trips

For large developments (i.e., those generating more than 50 peak-hour trips), the County may request mitigation for impacts on the level of service of County roads, documented safety locations (the County calls such locations "inadequate road conditions" or "IRCs"), and access or circulation. The traffic study requirements below are intended to disclose impacts. Based on this information the County may request through the City that the applicant provide additional information showing possible mitigation measures. If any off-site improvements were needed for mitigation the County would work with the applicant to determine requirements for right-of-way, construction plans, right-of-way use permits, construction/maintenance bonds, and other issues.

Impacts on Level of Service (LOS) of County Arterials

Contact Snohomish County Public Works for the most current list of arterial units in arrears and critical arterial units. Identify any arterial units in arrears or critical arterial units impacted by three or more directional peak-hour trips.

Impacts on Inadequate Road Conditions

Contact Snohomish County Public Works for a list of the current IRCs. Identify any IRCs impacted by three or more peak-hour trips. Note: Unlike LOS impacts in which at least three or more peak hour trips have to be added in one direction to require disclosure (e.g., 3 westbound), for IRCs, any three peak hour trips added to IRC locations are considered an impact for which disclosure is necessary (e.g., 2 westbound plus 1 eastbound).

Impacts on Access or Circulation

The County may request improvements to existing roads to provide safe and efficient access and/or circulation. In some instances, the County may request provisions for future County roads identified in the Comprehensive Plan or in Small Area Transportation Studies. If so, the County will request specific additional information through the City.

Section Four (4) Traffic Mitigation Offer to Snohomish County

The applicant should complete a traffic mitigation offer to Snohomish County that summarizes the mitigation identified in the county traffic worksheet and any additional traffic study. This will facilitate timely review of the development and processing of the application. The form to use for the mitigation offer is titled "Traffic Mitigation Offer to Snohomish County." This form is typically provided to all applicants along with this traffic study checklist. In addition, copies are available from the county contacts or the Snohomish County web site shown below.

Additional Information

County Web Site

Snohomish County Public Works has a web site with many documents related to traffic studies and mitigation requirements for developers. From the Snohomish County Home Page go to:

Departments/Public Works/Divisions/TES/ProgramPlanning/3066B

County Contacts

- Elbert Esparza, Snohomish County DPW Traffic, 3000 Rockefeller M/S 607, Everett WA 98201, (425) 388-3184, elbert.esparza@snoco.org

From: Gresham, Doug (ECY)
To: Emily Morgan
Subject: [External!] RE: Wetland Review - Williams Point Subdivision - PA24-014
Date: Tuesday, May 28, 2024 5:20:45 PM
Attachments: image001.png
image002.png

You don't often get email from dgre461@ecy.wa.gov. Learn why this is important

[CAUTION:] This email originated from outside the City of Marysville. **Do not click links or open attachments** unless you recognize the sender and know the content is safe. Contact helpdesk if you have any concerns or questions.

Emily,
Sorry it took so long to get back to you.
I compared the wetland rating for Wetland A that was done by Wetland Resources in 2018 and 2024. The only question they answered differently was # H2.3 regarding land use intensity. The most recent rating shows > 50% high intensity land use, while the 2018 rating showed < 50%. When I looked at the two figures side by side there is a difference that could account for this change. In the intervening 5 years there is more high intensity land uses within a 1 km circle around Wetland A so it might have pushed it over the 50% threshold. Let me know if you have any questions.

Doug Gresham, Wetland Specialist (he/him)
Washington State Department of Ecology
PO Box 330316
Shoreline, WA 98133-9716
Cell: (425) 429-1846
Email: Doug.Gresham@ecy.wa.gov

DEPARTMENT OF ECOLOGY State of Washington

From: Emily Morgan <emorgan@marysvillewa.gov>
Sent: Wednesday, May 22, 2024 12:31 PM
To: Gresham, Doug (ECY) <DGRE461@ECY.WA.GOV>
Subject: Wetland Review - Williams Point Subdivision - PA24-014

External Email

Hi Doug,

I had sent an RFR for your review of the above project. Now that I am doing my technical review I have noticed that this property had previous wetland reports done that have differing findings than what the most current wetland report concludes. An interested element is that the first report from 2019 was done by the same consultant as the current report, yet the category has changed from a Cat I to Cat II.

I would love for you to take a look at these reports and let me know what you think. You may view all the reports here: http://docs.marysvillewa.gov/htcomnet/public/?folder=2470b1cd

Thank you in advance,

EST. 1891
MARYSVILLE
COMMUNITY DEVELOPMENT

Emily Morgan (she/her)
Senior Planner
501 Delta Ave
Marysville, WA 98270
360.363.8216 Direct

How are we doing? Please take our survey and let us know!

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052
Office: 425.305.5104

June 13, 2024

City of Marysville Community Development Department
ATTN: Emily Morgan
501 Delta Avenue
Marysville, WA 98270
(360) 363-8000

RE: Williams Pointe Subdivision (PA24-014) – Technical Review 1

Project: Williams Pointe (SGE #23-0010)

Emily,

Please find below responses to all comments as received from the City of Marysville. All comments have now been addressed and responses to each comment are outlined below.

Subdivision Comments

1. (EM) Include File Number PA24-014 on all future correspondence, in addition to all site, civil and landscape plans.

   Response: This has been added as requested.

2. (EM) All lots under 5,000 sq. ft. would be required to meet the development provisions of MMC 22C.010.310 for small lot single-family dwelling development standards.

   Response: Noted. This will be applied at building permit submittal.

3. (EM) Per MMC 22G.090.580, a 6ft. sight obscuring fence shall be required if: during grading plan review the existing grade will be increased by a 2 ft. or greater vertical grade change and the grade increase causes the new lots be at a higher elevation than the abutting property. Based on this requirement, a fence would be required along the northern property boundary of the site north of 44th St NE.

   Response: Noted. Lots along the northly portion of the project all appear to be cut walls or have grades that meet or are lower than adjacent grades.

Landscape Plan Comments

4. (EM) Significant trees, which include evergreen trees eight inches in diameter or greater and/or deciduous trees 12 inches in diameter or greater measured four and one-half feet above grade, shall be retained as follows:

   4.1 Perimeter landscaped areas that do not constitute a safety hazard shall be retained.

   4.2 To provide the best protection for significant trees during the construction stage, the applicant shall install a temporary, five-foot-high, orange clearing limits construction fence in a line generally corresponding to the dripline of any significant tree(s) to be retained. All such fencing shall be installed and inspected by the community development department prior to commencement of site work.

   Response: Noted. This will be accomplished during construction.

5. (EM) Stormwater management facilities are required to have a 5ft. L5 landscape buffer. Planting areas may incorporate no more than 30 percent deciduous plantings due to maintenance and pond performance constraints. Please provide confirmation that the proposed planted buffer for Tracts 996 and 998 would meet this standard.

Response: This will be accomplished and will be shown on the landscape documents that will be prepared with civil permit documents.

Critical Area Review Comments

6. (EM) Based on comments received by the Tulalip Tribes as well as findings made wile reviewing the application materials, there appear to be discrepancies with the critical area reports and wetland delineations for the subject property. A report was conducted in 2019 by Wetland Resources that concluded that Wetland A was a Category I wetland with a 125 ft. buffer. This conclusion was further confirmed with a delineation prepared by Raedeke in 2022 for the previous land use application (PA22-024) which again, concluded Wetland A to be a Category I wetland. However, the current report conducted by Wetland Resources concludes that Wetland A is a Category II with a 100 ft. buffer. Based on these conflicting reports, please provide justification as to why the Category changed. A 3rd party peer review may be required.

   Response: A memo has been prepared and submitted with the resubmittal documents explaining the currently depicted Category and respective buffers and the analysis that determined those designations. Please see that memo for additional information.

Dennis O'Brien Comments

1. Is there a requirement for recreational open space for a project this size? Many of the developments that have been going in in this area have a recreational (e.g. basketball, Frisbee golf, groomed grass, etc.) open space. There are no recreational facilities close by so it seems that this one would include some.

   Response: This project is a standard subdivision. There is no open space requirement for standard subdivisions, though the project proposes open space for critical areas/buffers and stormwater detention.

2. Are street parking and street width acceptable? Most of the developments end up with cars parked wherever it is not disallowed. From the looks of RG-01 of the civil plans it looks like the majority of the 75th Ave extension will allow parking on the east side. This might be okay but the width of 75th has been decreased from 36' to 28'. If 75th gets filled with parked cars on the east then two way traffic will be hindered to the point of needing to take turns. You should consider widening 75th to 36' for it's entire length.

   Response: The project proposes ROW and street widths that meet City standards. Generally, parking is allowable on one side for City public streets proposed in the project and signage to prevent parking per City requirements is shown on the subdivision documents and plans.

3. How deep will the sewer at the east end of the "Road A" stub? By setting the depth a little deeper that the minimum the new sewer will be able to service a large part of the property to the east eliminating the need for a future lift station.

   Response: Elevations for sewer are in process as civil plans have yet to be prepared for the project. Parcels to the east, should they have access from 44th St NE, will be required per City code to extend public sewer along their frontage. Based upon this requirement, sewer will also be available from 44th St NE for properties to the east, as well.

4. Roadway line-of-site (LOS) issues:
   1. 75th Ave looking east to 44th St NE:
      1. Sheet RG-01 gives the LOS as 200'. Where did this number come from? Chapter 1260 of document M22-01.21 gives criteria on stopping sight distances. I'm not sure if this is the controlling document but it is a WSDOT document. I'm not sure if this is the controlling document but it is a WSDOT document. In any event, paragraph

1260.03(1)(b) gives the Design Stopping Sight Distance of 250' for a 35 mph road (which is speed limit on 44th St NE). In addition, chapter 1260.03(2) gives the effect of grade. The grade of 44th St NE just east of the proposed 75th Ave NE intersection is ~ -8% which increases the 35-mph distance to between 271' and 287'.

Response: The references in this comment seem to come from WSDOT requirements, which do not apply to this project. City of Marysville EDDs states requirements for sight distance in chapter 3 of the EDDs. Right-turn only forced channelization for entering traffic from 75th, through the integration of curbing, signage and additional entry lane width along westbound 44th St NE has been added to help with safety for vehicle movements onto 44th St NE.

2. 44th St NE is a straight shot for about a mile. The proposed intersection is right in the middle. Even though the speed limit on 44th St NE is 35 mph the practical speed is somewhat higher. 35mph should be considered a minimum as many cars are traveling at 40mph or more.

   Response: Noted. It is assumed that the City of Marysville determines speed limits in this area.

2. 75th Ave just north of 44th St looking north:

   1. There are two proposed lots (1 & 2) that have driveways on 75th Ave just north of 44th St. Assuming that 75th will be a 25mph road we see that the stopping sight distance is 155' (again, from chapter 1260 of document M22-01.21) and, from sheet PR-03 the grade just north of 44th on 75th Ave approaches -10% which increases this to 173' (again, from chapter 1260.03(2)). While I am not sure if this is the correct application of the stopping sight distances it does seem that these two driveways will be at risk for accidents. Is there sufficient LOS here?

Response: These driveway approaches have been discussed previously with the City and are acceptable. Southbound vehicles on 75th will be slowing as they approach the intersection to turn right onto 44th St NE, giving addition reaction time for drivers approaching anyone backing out of or tuning into those driveways for lots 1 and 2.

5. Adding slope to neighbor's property: In order to achieve the proposed 200' LOS east on 44th St NE sloped grading is proposed on the property to the east of 75th Ave NE. This grading will add slope to about 20' of his property on the west and 10' on the south. To achieve ~280' (see 4.1 above) this may even need to be more. This is a slope that the owner will likely need to maintain forever. As I look at the road and grading plan RG-01 I see that the developer proposes numerous retaining walls throughout the property to maintain level plots – a major benefit. It seems that the courtesy should be extended to a neighbor whose property is being affected by replacing the proposed slope with an additional retaining wall.

   Response: The 200' of sight distance is as much sight distance as can be achievable given the topography of the existing 44th St NE ROW per sight distance profiling analysis performed along the sight distance line of sight per EDDs requirements. The grading easement anticipated to produce the sight distance line, which is greater than shown in previously approved documents related to this project site for this intersection configuration, helps with safety for vehicles entering/exiting the 44th/ 75th intersection area.

6. There may be a way to mitigate items 4 and 5 above by not allowing 75th Ave NE to intersect 44th St NE:

   1. This will eliminate the LOS issues with 44th St (4.1.1 above).

   2. That proposed portion of 75th Ave NE that proceeds south of the southernmost Road A intersection could be turned into a driveway rather than a street. This eliminates the LOS issue on 75th Ave (4.1.2 above).

3. If the driveway proposed in 6.2 did not slope as much as the proposed extension of 75th Ave this could minimize any sloping required on the Williams property and perhaps constrain it to just the current easement. This eliminates or minimizes the sloping/retaining wall issue (5 above).

   Response: The City has required that 75th must connect to 44th and so the project proposes to meet City of Marysville requirements in this regard.

7. There are several large cedar trees along the west edge of the O'Brien property that I would like to be preserved. I'm not sure what needs to be done here but I'm sure that the roots of these trees extend onto the proposed development, and I'd like to see a plan to make sure they are not damaged (at least not too much).

   Response: Noted. This is typically evaluated during site construction.

8. I would like to have a fence built along the west edge of my property by the developer.

   Response: Noted.

Todd Conway Comments

1. The neighborhood is asking what the purpose of extending 73rd from 40th St NE to 44th St NE and how will it affect our neighborhood through traffic. When will construction start and finish?

   Response: With the extension of 75th to the stub road that has been construction near the intersection of 75th Ave NE and 46th Pl NE, vehicles will have public road access from the existing stub road to 44th St NE. Construction is anticipated to begin in summer/fall of 2024 and conclude in 2025.

Todd Gray Comments

1. I am concerned about a discrepancy in Wetland classification. Wetland A, per Wetland Resources April 2024 delineation, is identified as Category II, with a 100ft buffer. However, Wetland Resources had previously identified this wetland as Category I, with a 125ft buffer, in 2019. This delineation was later confirmed by Raedeke Associated in 2022. Why has this classification changed, suspiciously to the developer's benefit?

   Response: A memo has been prepared and submitted with the resubmittal documents explaining the currently depicted category and respective buffers and the analysis that determined those designations. Please see that memo for additional information.

Michael Snook Comments

1. Building application for plan review will be approximately 4-6 weeks for first-time plan review comments.

   Response: Noted.

Kim Bourns Comments

1. I am not able to review the preliminary plat boundary because there was only one title report provided for only one of the four parcels included in the plat. I will need the other three title reports to do my review.

   Response: An overall title report has been included with the resubmittal items that includes all parcels included in the subdivision project.

Jesse L. Hannahs Comments

1. Traffic impact fees will be required from the City and depending on trip generation/distribution, may be required from the County and State.

   Response: Noted.

2. A Traffic Impact Analysis (TIA) will be required.
   a. TIA is acceptable

   Response: Noted.

3. Per EDDS Section 3-212 and based upon history of concerns near subject locations, intersection (entering) sight distance analysis shall be performed.
   a. Perform sight distance analysis at proposed intersection of:
      i. 75th Ave NE and 44th St NE
         1. Previous approved development could not meet sight distance requirements without additional roadway improvements alleviate sight distance concerns.
         2. Provide sight distance analysis based upon current proposed development for evaluation and approval.
         3. Previous development had an approved variance. Will a variance be required based upon current proposal?

   Response: A sight distance analysis had previously been performed and submitted at this intersection. Previous approval documents had shown 125' of available sight distance and right-turn only channelization with additional lane width for vehicles entering/exiting the 75th/44th intersection. The project proposes to keep the same design as the previously approved design (right-turn only channelization via curbing and signage, additional lane width), but with a design that incorporates additional sight distance by obtaining a grading easement on the neighboring property to clear and grade within the sight distance line such that as much sight distance as possible is provided (200') given the existing road topography of 44th St NE. 200' is all the sight distance that is available, given the existing road topography, as 44th flattens out quickly near the top of the rise, limiting sight distance to the 200'. Please see sheet PR-04 for sight distance profiles that have been cut along the 200' sight distance line to depict the areas in discussion. These have also been previously submitted with the anticipation that the City would provide feedback on whether a variance would be necessary or not.

4. Per EDDS 3-506, street lighting will be required.
   a. 44th St NE
      i. Street lighting upon 44th St NE shall be PUD installed fiberglass pole installation type street lighting.
      ii. Street shall be designed as collector arterial utilizing 200 watt equivalent LED fixtures.
   b. Proposed residential streets:
      i. Street lighting shall be PUD installed fiberglass pole installation type street lighting.
      ii. Street shall be designed as collector arterial utilizing 200 watt equivalent LED fixtures.
      iii. Spacing of fixtures should be approximately 180'-220'.
      iv. As part of civil construction approval proposed PUD street lighting locations shall be provided by the City for incorporation into the PUD site electrical plans.
      v. Contact Eddie Haugen of Snohomish County PUD at (425) 783-8276 or [contact email] for more information regarding PUD design.

   Response: Noted. Lighting fixtures will be shown per the requirements noted here for each road. These items will be shown in the civil permit plans.

5. A signing and channelization plan shall be required as part of civil construction plans for 44th ST NE and residential streets.
    a. Channelization
        i. 44th St NE to the extent feasible with development project shall provided for planned roadway lanes via striping.
    b. Signing:
        1. EDDS Standard Plan 3-805-001 shall be included upon signing plan sheet
        2. Parking restrictions shall only be installed on outside of 90 degree corners and within cul de sac(s).

    Response: Noted. Channelization plans will be provided with a future civil permit submittal.

6. Neighborhood Driveway Placement
    a. To the extent feasible, all driveways shall be staggered (rather than directly opposite each other).
        i. Driveway placement as currently proposed would be acceptable.

    Response: Noted. Thank you.

Brian Merkley Comments

1. Lots 16, 17 will require residential fire sprinklers due to distance from the ROW. This shall be reflected on the civil plans. More lots may be required due to other factors such as number of stories. Please see item K for further details.

    Response: Note 1 has been added to the utility plans noting that these lots will require fire sprinklers. A note will also be added to the water plans for the civil permit docs on the project.

2. Plans show 8 lots be accessed from a stub road (lots 26-33) with lot 30 access via autocourt. A turnaround will be required per EDDS 3-207.

    Response: A temporary turnaround consistent with EDDS 3-207 has been included in the updated plan set.

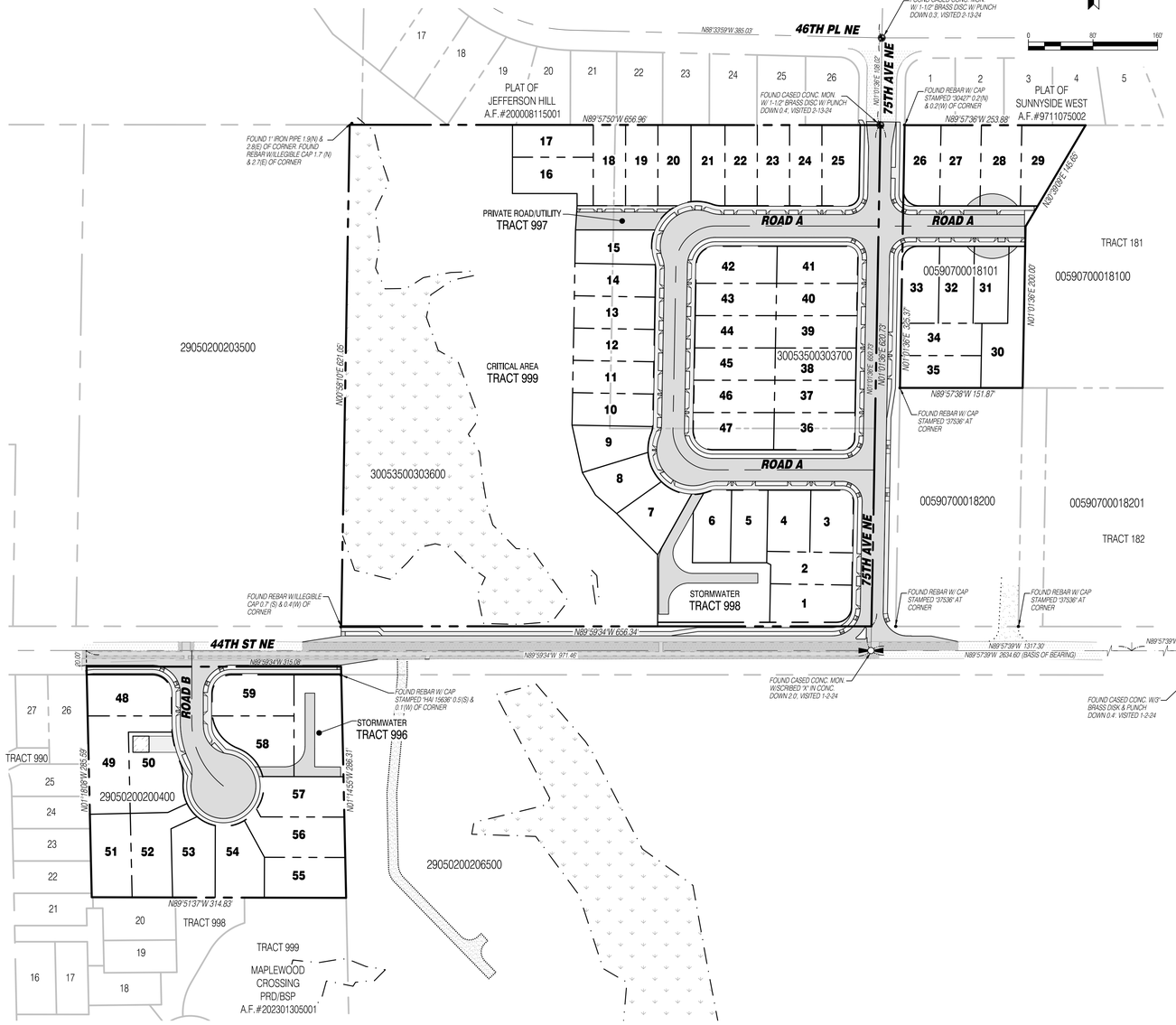
Thank you for your review. Let us know if you have any questions or if you need any additional information. We are happy to discuss this project further with you as necessary.

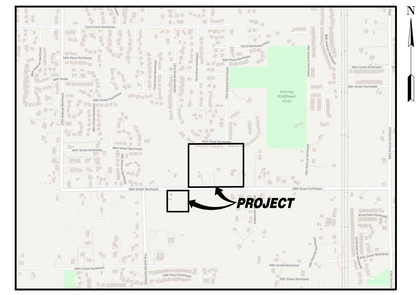
Regards,



Tom Abbott, P.E.
Principal Civil Engineer
Solid Ground Engineering

WILLIAMS POINTE
PRELIMINARY PLANS
MARYSVILLE, WA





VICINITY MAP
SCALE: 1"=2000'

LEGEND AND ABBREVIATIONS

EXISTING SYMBOLS	DESCRIPTION
●	SET 1/2" X 24" REBAR W/CAP "PCS 37536"
○	EXISTING CORNER MONUMENT AS NOTED
	QUARTER SECTION TIE
	SECTION TIE
	FOUND MONUMENT AS NOTED
	BLOW-OFF VALVE
	CATCH BASIN
	FIRE HYDRANT
	GUY ANCHOR
HB	HOSE BIB
	INVERT/CULVERT
	MAILBOX
PM	POWER METER
	POWER TRANSFORMER
S	SANITARY SEWER MANHOLE
	SIGN POST
SD	STORM DRAIN MANHOLE
	TELEVISION RISER
	UTILITY/ POLE
W	WATER MANHOLE
	WATER METER
	WATER VALVE
	WETLAND FLAG
	YARD LIGHT
	CONIFEROUS TREE
	DECIDUOUS TREE

ABBREVIATIONS	
CPP	CORRUGATED PLASTIC PIPE
IE	INVERT ELEVATION
INV	INVERT ELEVATION
OHP	OVERHEAD POWER LINE
TPM	TELEPHONE PAINT MARK
C	CEDAR
F	FIR
H	HEMLOCK
M	MAPLE

PROPOSED WATER SYMBOLS

SYMBOL	DESCRIPTION
	WATER CAP
	CONCRETE BLOCKING
	11.25° BEND
	22.5° BEND
	45° BEND
	90° BEND
	VALVE
	HYDRANT ASSEMBLY
	BLOW-OFF VALVE
	REDUCER
	AIR-VAC ASSEMBLY
	WATER METER
	WATER PIPE

PROPOSED SURVEY SYMBOLS

SYMBOL	DESCRIPTION
	SURVEY MONUMENT IN PROPOSED ROAD

PROPOSED STORM SYMBOLS

SYMBOL	DESCRIPTION
	SD CAP
	TYPE 1 CATCH BASIN, GRATED LID
	TYPE 1 CATCH BASIN, SOLID LID
	TYPE 2 CATCH BASIN, GRATED LID
	TYPE 2 CATCH BASIN, SOLID LID
	BEEHIVE MANHOLE COVER
	SQUARE YARD DRAIN
	ROUND YARD DRAIN
	STORM CLEAN OUT
	STORM PIPE

PROPOSED SEWER SYMBOLS

SYMBOL	DESCRIPTION
	SEWER CAP
	SEWER CLEANOUT
	SEWER MANHOLE
	SEWER PIPE

CONTACT LIST

DEVELOPER:
KEYSTONE LAND, LLC
13805 SMOKEY POINT BLVD #102
MARYSVILLE, WA 98271
CONTACT: JOE LONG
PHONE: (425) 268-6373
EMAIL: joe@cornerstonehomes.com

CIVIL ENGINEER:
SOLID GROUND ENGINEERING
8105 166TH AVE NE
REDMOND, WA 98052
CONTACT: TOM ABBOTT, PE
PHONE: (425) 281-8324
EMAIL: tabbott@solidgroundpnw.com

GEOTECHNICAL ENGINEER:
EARTH SOLUTIONS NW
15365 NE 90TH ST #100
REDMOND, WA 98052
CONTACT: HENRY WRIGHT, PE
PHONE: (425) 449-4704
EMAIL: Henryw@esnw.com

LANDSCAPE ARCHITECT:
PAUL JAY LANDSCAPE ARCHITECT
1115 BRIDGE ROAD
EASTHAM, MA 02642
CONTACT: PAUL JAY
PHONE: (425) 210-1986
EMAIL: pauljayla@gmail.com

SURVEYOR:
PACIFIC COAST SURVEYS, INC.
P.O. BOX 13619
MILL CREEK, WASHINGTON 98082
CONTACT: DARREN RIDDLE, PLS
PHONE: (425) 512-7099
FAX: (425) 357-3577
EMAIL: darren@pcsurveys.net

WETLAND BIOLOGIST:
WETLAND RESOURCES
9505 19TH AVE SE, STE 106
EVERETT, WASHINGTON 98208
CONTACT: JOHN LAUFENBURG
PHONE: (425) 337-3174
FAX: (425) 337-3045
EMAIL: john@wetlandresources.com

PROJECT INFORMATION

TAX PARCELS:	30053500309600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

EARTHWORK QUANTITIES

STRIPPING:	10,500 CY
CUT:	40,000 CY
FILL:	35,000 CY
NET:	5,000 CY (CUT)
DISTURBED AREA:	436,728 SF (10.03 AC)

THE ABOVE QUANTITIES ARE FOR PERMITTING PURPOSES. CONTRACTOR TO VERIFY.

TABLE OF CONTENTS

1	COVER SHEET
2-3	EXISTING CONDITIONS MAP
4-5	PRELIMINARY PLAT MAP
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8-11	PRELIMINARY ROAD PROFILES
12	PRELIMINARY ROAD SECTIONS
13-14	PRELIMINARY UTILITY PLAN

SURVEY INFORMATION

LEGAL DESCRIPTION

PARCEL NO. 29050200200400:
THE EAST 315 FEET OF THE NORTH HALF OF THE NORTH-WEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

PARCEL NO. 30053500303800:
PARCEL 1, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 30053500303700:
PARCEL 2, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 00590700018101:
PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 22-001 RECORDED UNDER AFN. 202207195002

ALL SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 (NAVD88 -3.67'= NGVD29)

FOUND BRASS DISK W/ PUNCH IN CONC. MON. AT THE INTERSECTION OF 46TH PL. NE & 75TH AVE N.E. CITY OF MARYSVILLE DATABASE PT. ID 100
WGS DESIGNATION 294669
ELEV. = 313.56'

BASIS OF BEARING

PER THE PLAT OF SEAVIEW RIDGE, RECORDED IN VOLUME 56 OF PLATS, ON PAGES 249 THROUGH 251, THE MONUMENTED CENTERLINE OF 44TH ST. N.E., AS THE BEARING OF
N 89°59'34" W, AS SHOWN HEREON.

SURVEY REFERENCES

(R1) PLAT OF SEAVIEW RIDGE - VOL. 56, PGS. 249-251

(R2) PLAT OF JEFFERSON HILL - A.F.#200008115001

(R3) CITY OF MARYSVILLE BLA NO. BLA 19-044, AFN. 201910295002

(R4) CITY OF MARYSVILLE BLA NO. BLA 22-001, AFN. 202207195002

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE AND REAL TIME KINEMATIC GPS POSITIONING UTILIZING THE HxGN SMARTNET NETWORK

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION
LEICA VIVA GNSS GS08 RECEIVER
ALL EQUIPMENT HAS BEEN MAINTAINED IN ADJUSTMENT TO MANUFACTURERS SPECIFICATIONS AS REQUIRED BY WAC 332-130-100

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS SET BY WAC 332-130-080 THROUGH 332-130-110

SURVEY NOTES

1.) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR OF RECORD.

2.) BOUNDARY LINES SHOWN AND CORNERS SET REPRESENT DEED LOCATIONS; OWNERSHIP LINES MAY VARY. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, AND OCCUPATION WHICH MAY ENCUMBER TITLE OR USE OF SUBJECT PROPERTY.

CITY PROJECT NUMBER: PA24-014

UTILITY NOTE

THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. AGENCIES INVOLVED SHALL BE NOTIFIED WITHIN A REASONABLE TIME PRIOR TO THE START OF CONSTRUCTION.

SURVEY DISCLAIMER

THE TOPOGRAPHIC SURVEY WAS PERFORMED BY PACIFIC COAST SURVEYS. SOLID GROUND ENGINEERING ASSUMES NO LIABILITY AS TO THE ACCURACY AND COMPLETENESS OF THIS DATA. ANY DISCREPANCIES FOUND BETWEEN WHAT IS SHOWN ON THE PLANS AND WHAT IS NOTED IN THE FIELD SHOULD BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.

811 SAFETY IS IN YOUR HANDS. EVERY DIG. EVERY TIME.

THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 6-13-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

COVER SHEET

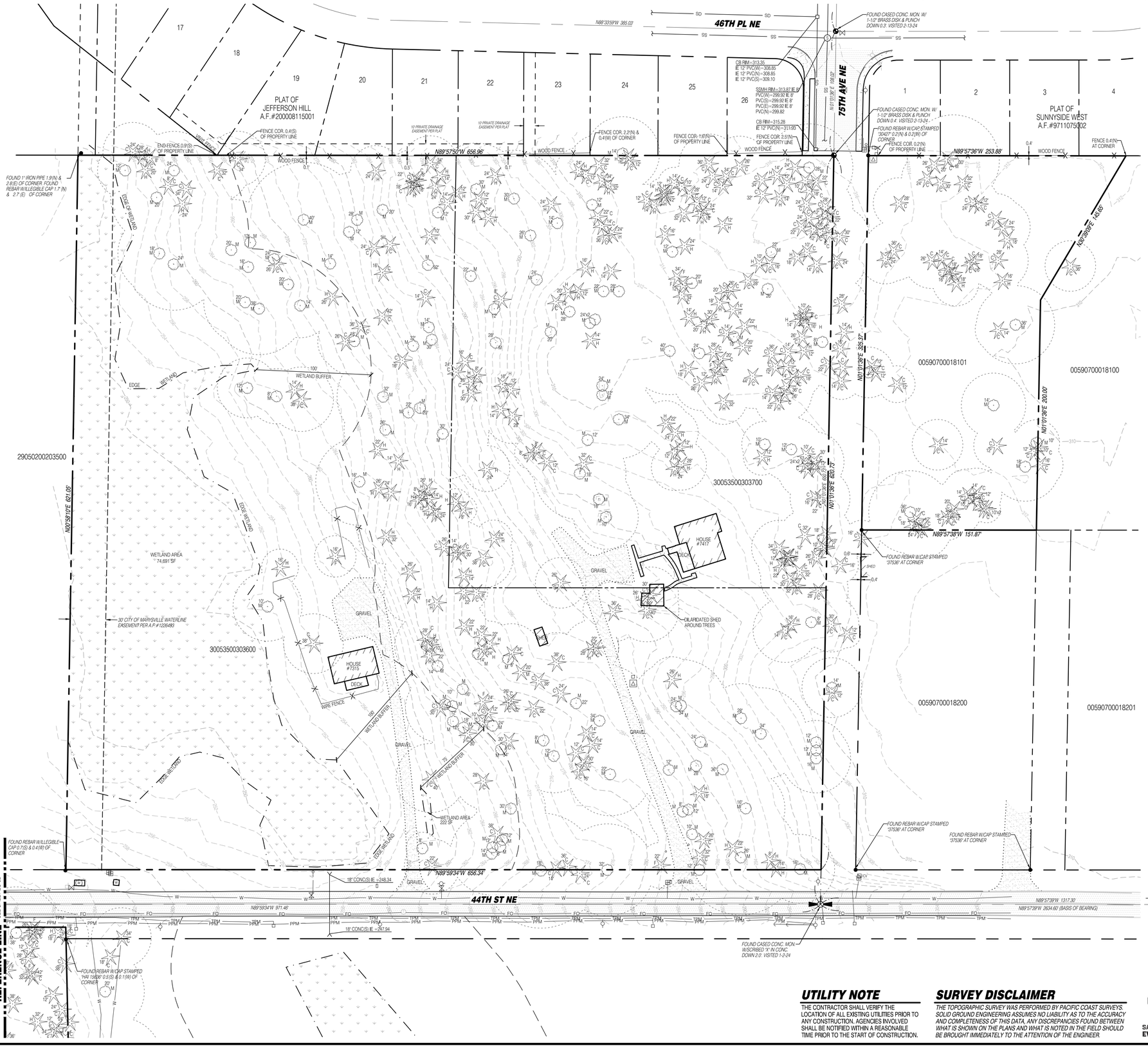
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

CS-01
1 OF 14

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NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON



SURVEY INFORMATION

LEGAL DESCRIPTION

PARCEL NO. 29050200200400:
THE EAST 315 FEET OF THE NORTH HALF OF THE NORTH-WEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

PARCEL NO. 30053500303600:
PARCEL 1, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 30053500303700:
PARCEL 2, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 00590700018101:
PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 22-001 RECORDED UNDER AFN. 202207195002

ALL SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 (NAVD88 -3.67'= NGVD29)

FOUND BRASS DISK W/ PUNCH IN CONC. MON. AT THE INTERSECTION OF 46TH PL. NE & 75TH AVE N.E. CITY OF MARYSVILLE DATABASE PT. ID 100
WGS DESIGNATION 294669
ELEV. = 313.56'

BASIS OF BEARING

PER THE PLAT OF SEAVIEW RIDGE, RECORDED IN VOLUME 56 OF PLATS, ON PAGES 249 THROUGH 251, THE MONUMENTED CENTERLINE OF 44TH ST. N.E., AS THE BEARING OF
N 89°59'34" W, AS SHOWN HEREON.

SURVEY REFERENCES

(R1) PLAT OF SEAVIEW RIDGE - VOL. 56, PGS. 249-251

(R2) PLAT OF JEFFERSON HILL - A.F.#200008115001

(R3) CITY OF MARYSVILLE BLA NO. BLA 19-044, AFN. 201910295002

(R4) CITY OF MARYSVILLE BLA NO. BLA 22-001, AFN. 202207195002

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE AND REAL TIME KINEMATIC GPS POSITIONING UTILIZING THE HxGN SMARTNET NETWORK

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION
LEICA VIVA GNSS GS08 RECEIVER
ALL EQUIPMENT HAS BEEN MAINTAINED IN ADJUSTMENT TO MANUFACTURER'S SPECIFICATIONS AS REQUIRED BY WAC 332-130-100

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS SET BY WAC 332-130-080 THROUGH 332-130-110

SURVEY NOTES

1.) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR OF RECORD.

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CITY PROJECT NUMBER: PA24-014

UTILITY NOTE

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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 6-13-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

EXISTING CONDITIONS MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

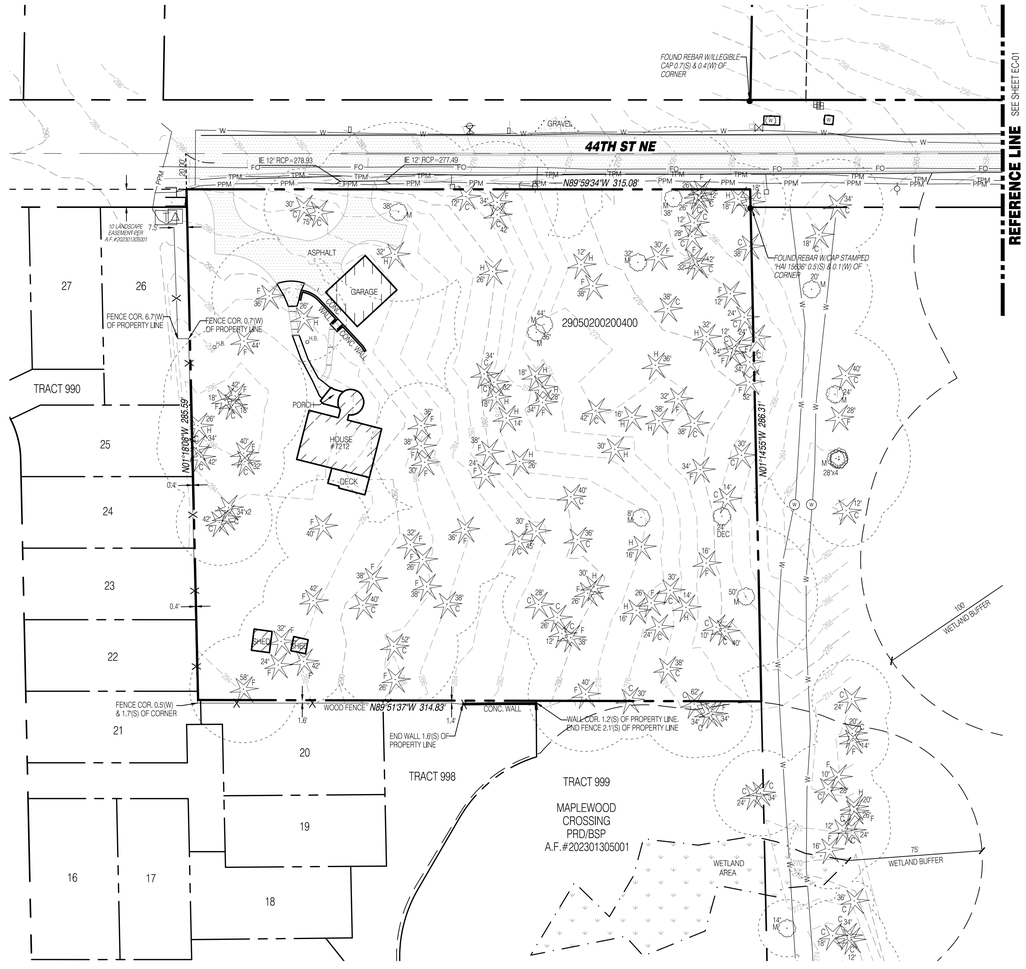
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CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

EC-01

2 OF 14

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N

0 40 80

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CITY PROJECT NUMBER: PA24-014

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SAFETY IS IN YOUR HANDS.
EVERY DIG. EVERY TIME.

THOMAS P. ABBOTT
STATE OF WASHINGTON
56921
REGISTERED
PROFESSIONAL ENGINEER
6-13-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

EXISTING CONDITIONS MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

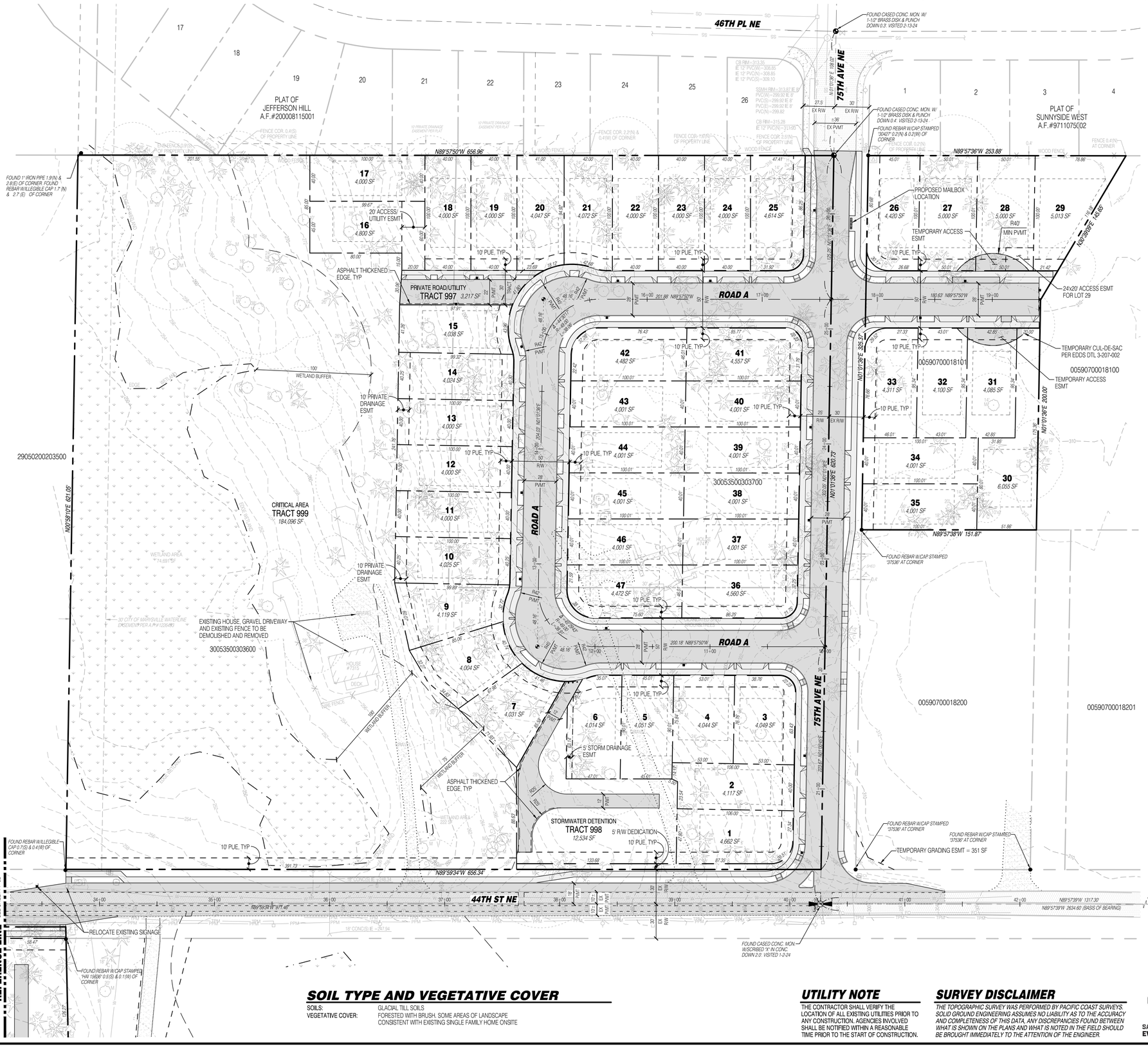
MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

EC-02
3 OF 14

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SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

UTILITY NOTE

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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT

PROJECT INFORMATION

TAX PARCELS:	300535003036OO, 300535003037OO, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

DENSITY CALCULATIONS

ZONE (DENSITY):	R-6.5
GROSS AREA:	570,000 SF (13.09 AC)
FLAT 20% DEDUCTION:	114,000 SF (2.62 AC)
NET AREA:	456,000 SF (10.47 AC)
ALLOWABLE DENSITY:	10.47 x 6.5 DU/AC = 68 LOTS
LOTS PROPOSED:	59 LOTS

NOTES

1. LOTS 16 AND 17 WILL REQUIRE RESIDENTIAL FIRE SPRINKLERS.

CITY PROJECT NUMBER: PA24-014

THOMAS P. ARBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 6-13-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY PLAT MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

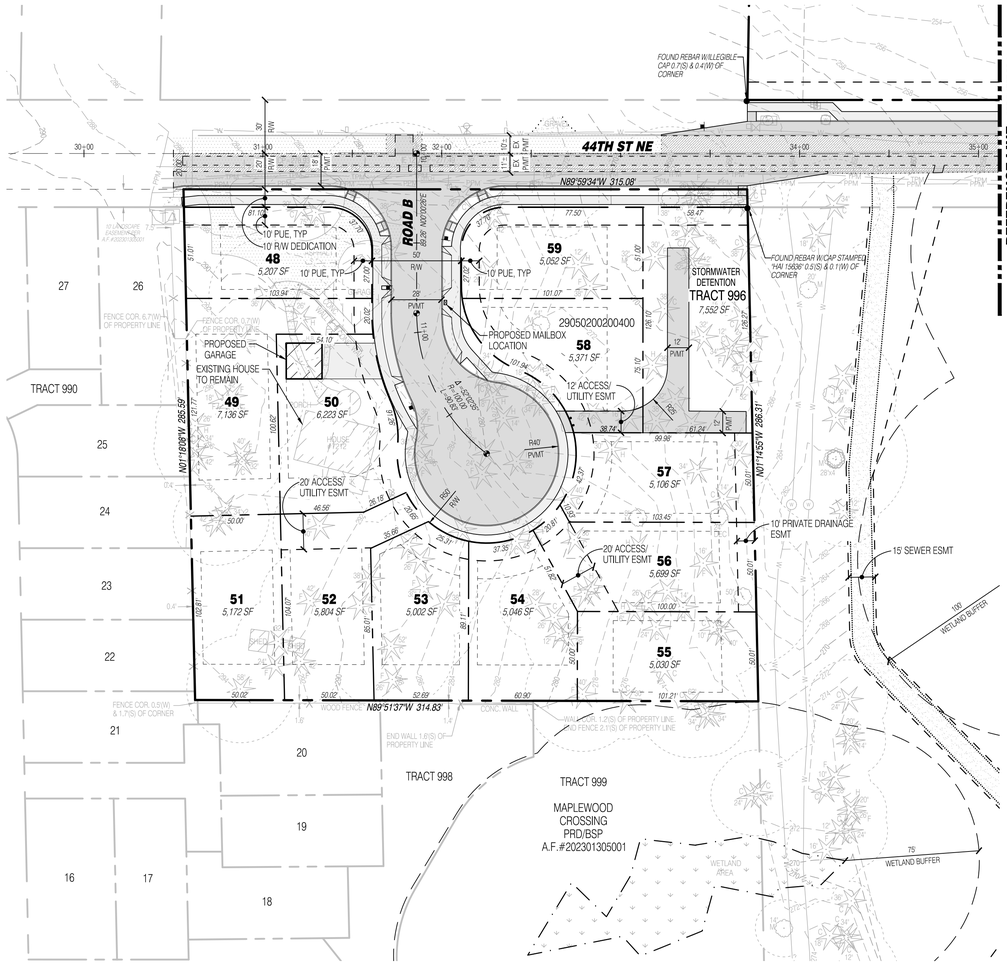
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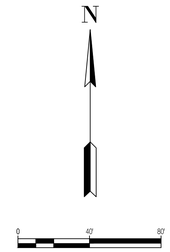
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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
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	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT

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CITY PROJECT NUMBER: PA24-014

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THOMAS P. ARBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 6-13-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY PLAT MAP

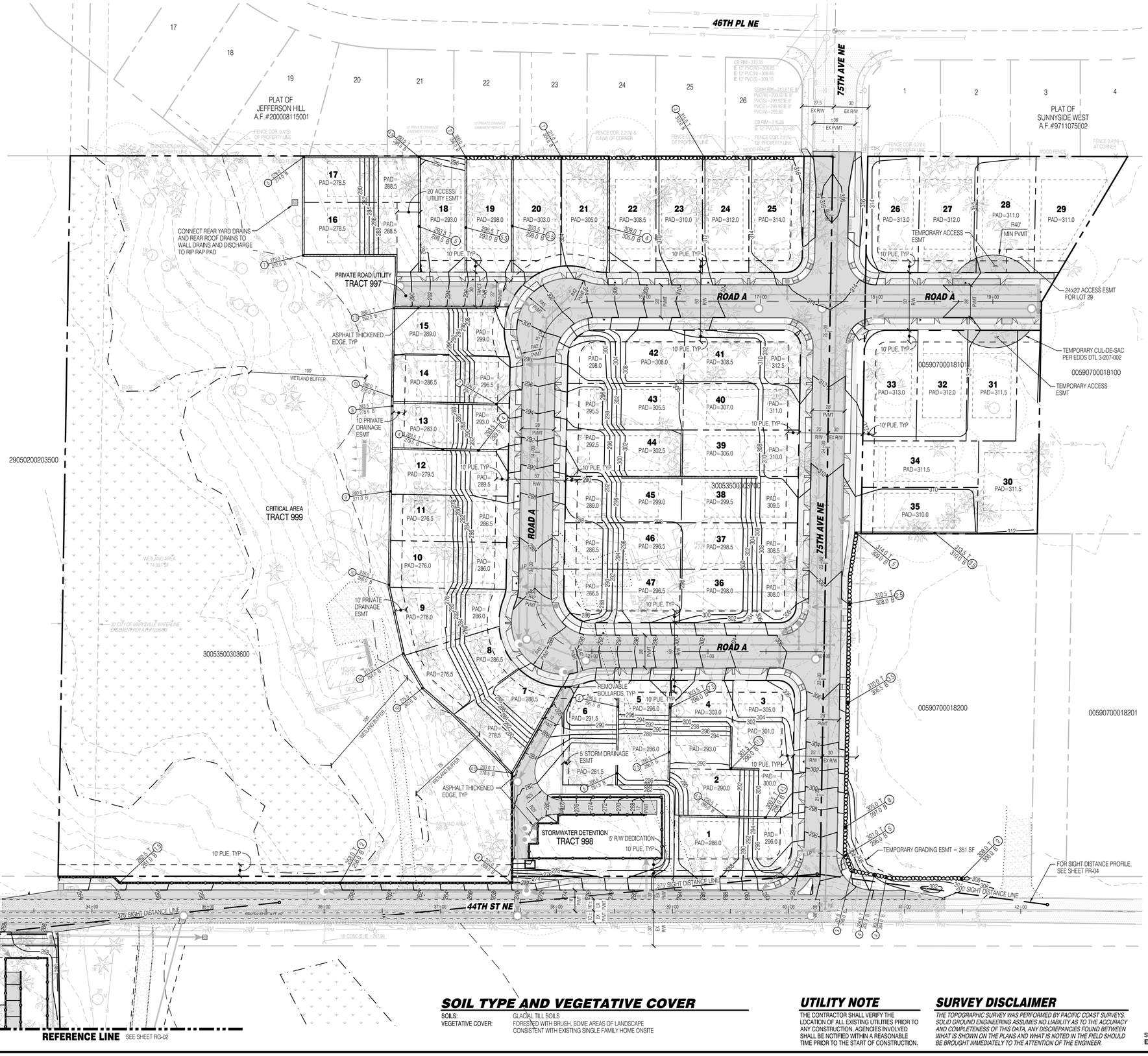
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
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PP-02
5 OF 14

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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING

ROAD AND GRADING NOTES

1. GRADING AND PLACEMENT OF WALLS MUST BE IN CONFORMANCE WITH 220.50.030 OF THE MMC.
2. ALL DISTURBED PERVIOUS AREAS TO BE UNDERLAIN WITH BMP T5.13 SOILS.
3. TRENCH RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 3-703 OF THE EDDS.
4. ALL OVERHEAD UTILITIES ARE TO BE PLACED UNDERGROUND.
5. ALL WALLS OVER 48" REQUIRE A SEPARATE BUILDING PERMIT.
6. ALL WALLS OVER 30" REQUIRE FALL PROTECTION FENCING.
7. ALL WALLS TO BE 2' OR LESS AT TERMINATION.
8. ALL PAVEMENT CUTS SHALL BE RESTORED PER APPENDIX B OF EDDS CHAPTER 3. TACK AND SEAL SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN SECTION 9-02.1(6) OF THE STANDARD SPECIFICATIONS AND SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGES OF SAWCUTS AS SPECIFIED IN SECTION 5-04 OF THE STANDARD SPECIFICATIONS.

SOIL TYPE AND VEGETATIVE COVER

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Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY ROAD AND GRADING

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
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RG-01

6 OF 14

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LEGEND

SYMBOLS	DESCRIPTION
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CITY PROJECT NUMBER: PA24-014

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Redmond, WA 98052

PRELIMINARY ROAD AND GRADING

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

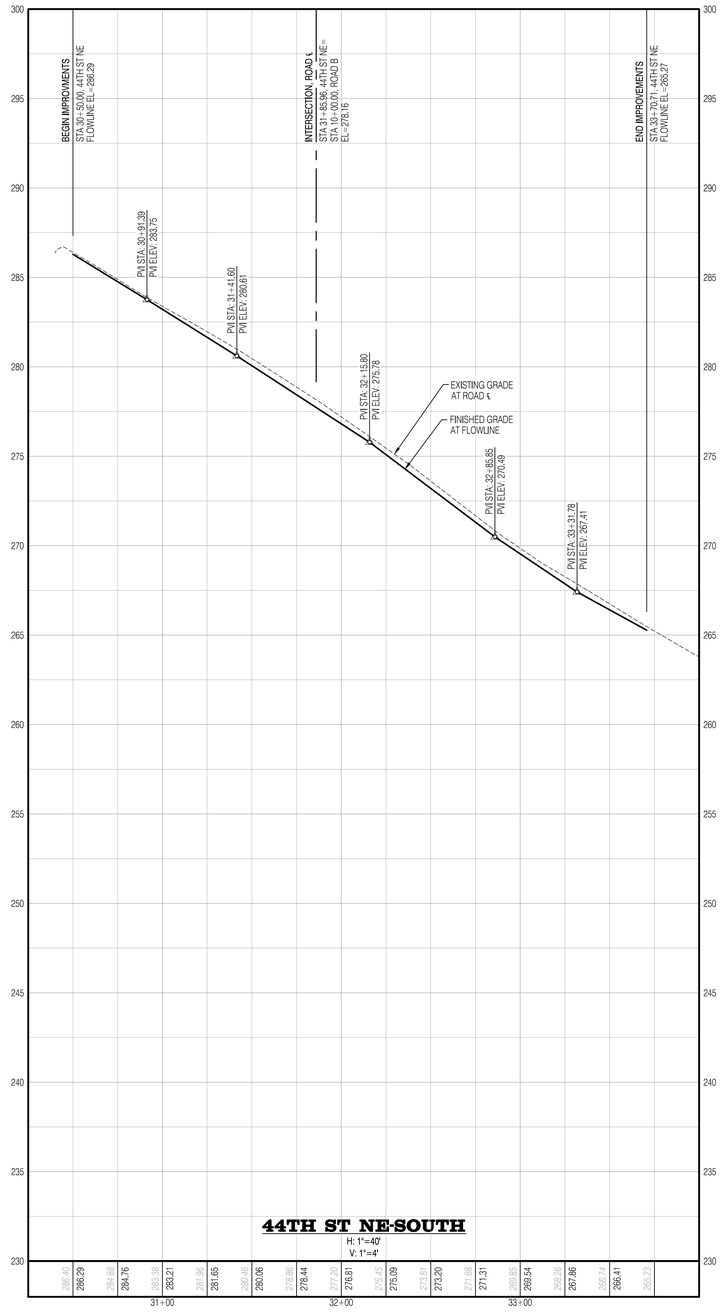
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JURISDICTION: CITY OF MARYSVILLE	
JOB NUMBER:	23-0010

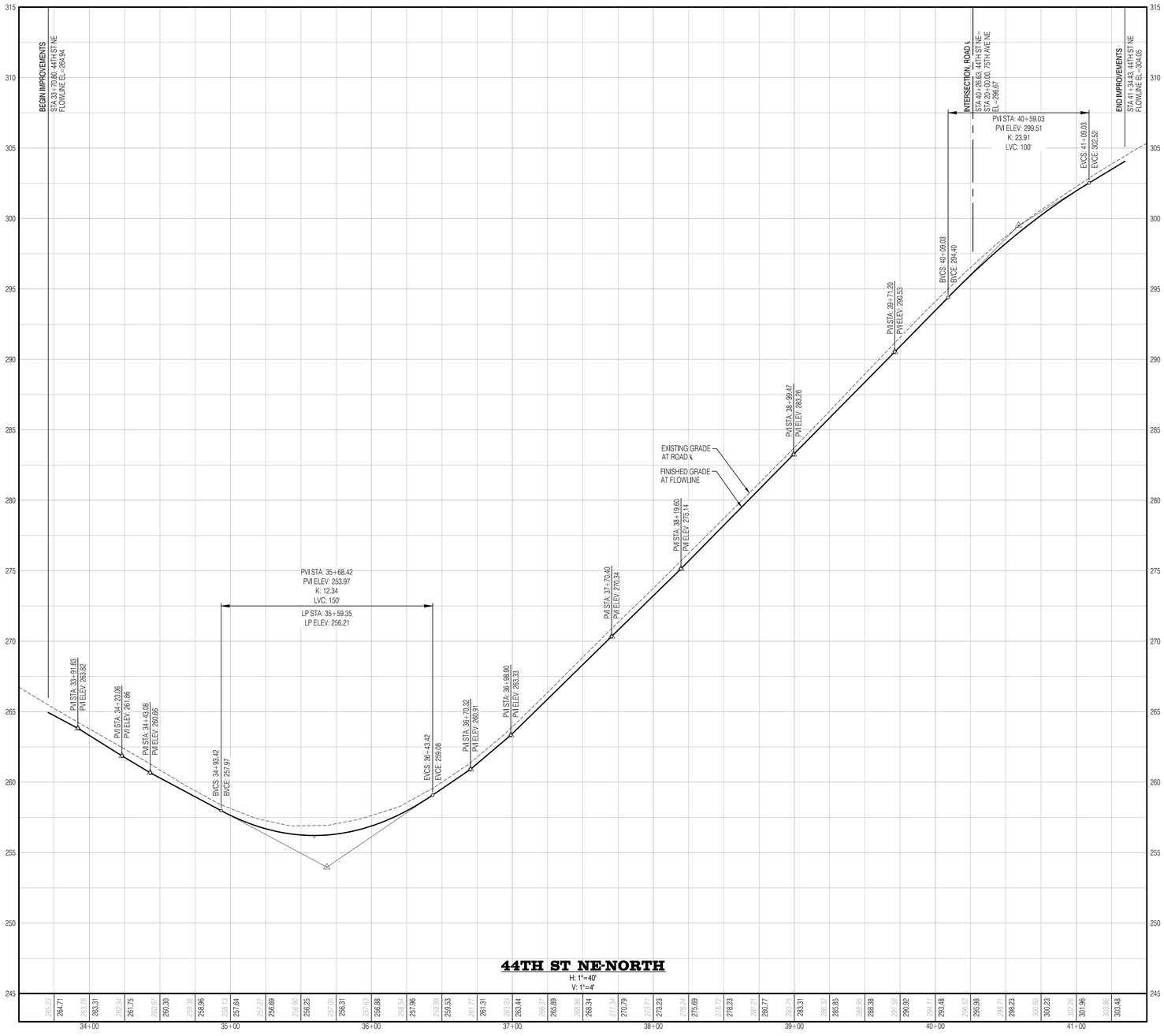
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7 OF 14

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CITY PROJECT NUMBER: PA24-014

UTILITY NOTE

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SURVEY DISCLAIMER

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811 SAFETY IS IN YOUR HANDS. EVERY DIG. EVERY TIME.

THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 6-13-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS

SGE
Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY ROAD PROFILES

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

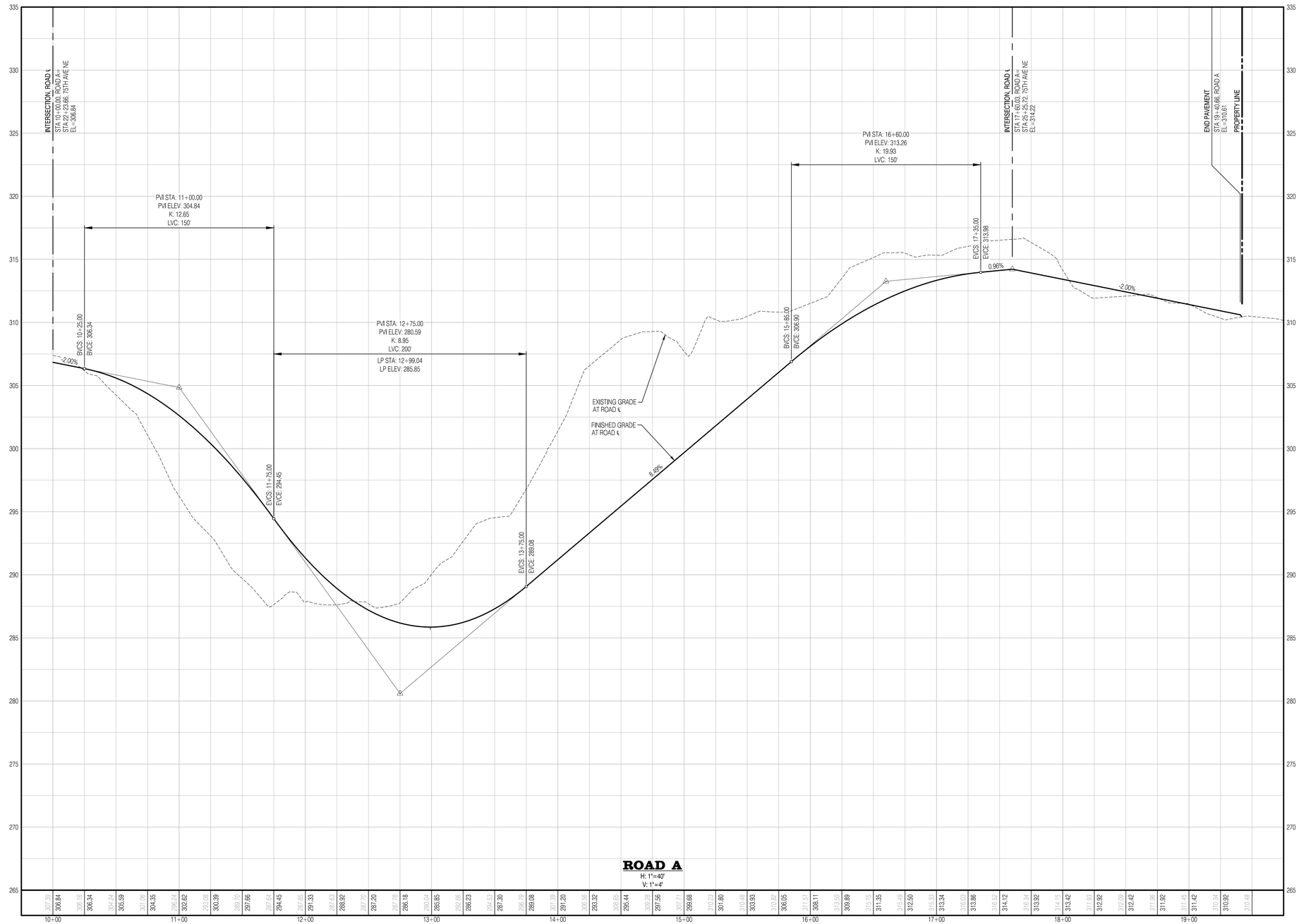
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JOB NUMBER:	23-0010

PR-01

8 OF 14

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Redmond, WA 98052

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KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

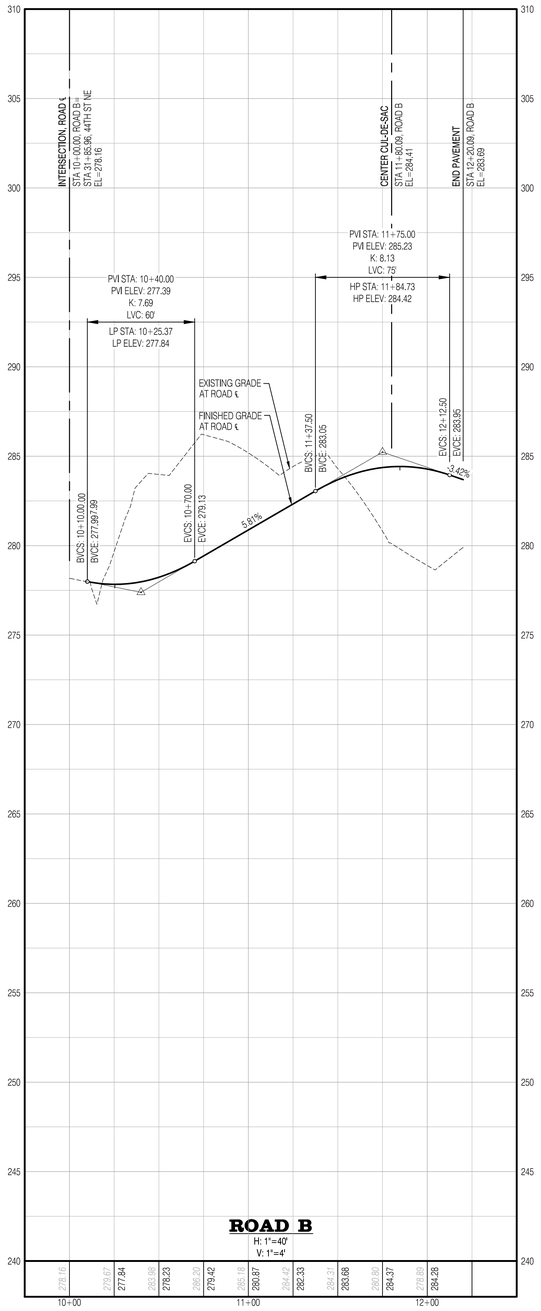
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JOB NUMBER:	23-0010

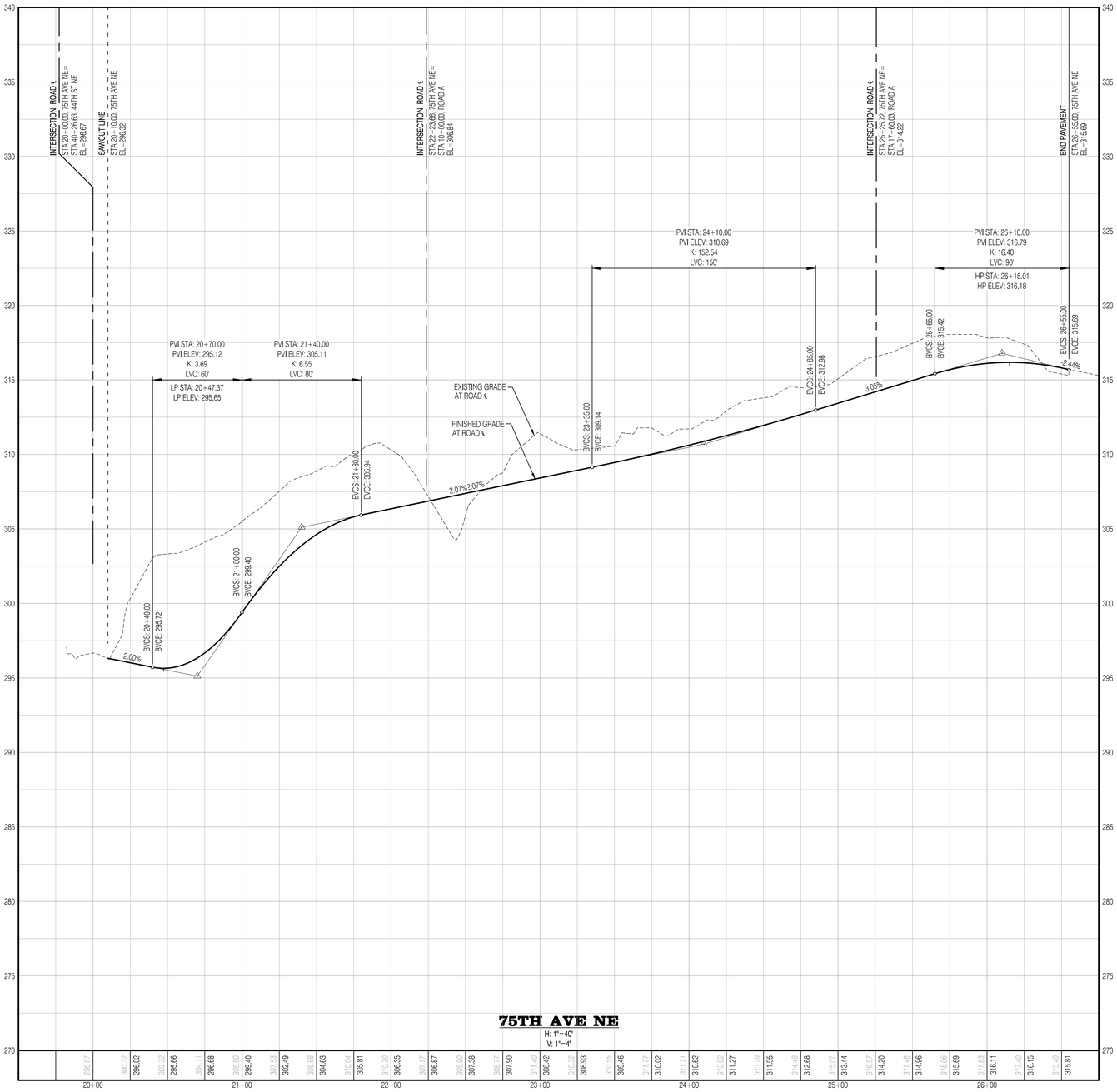
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9 OF 14

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CITY PROJECT NUMBER: PA24-014

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KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

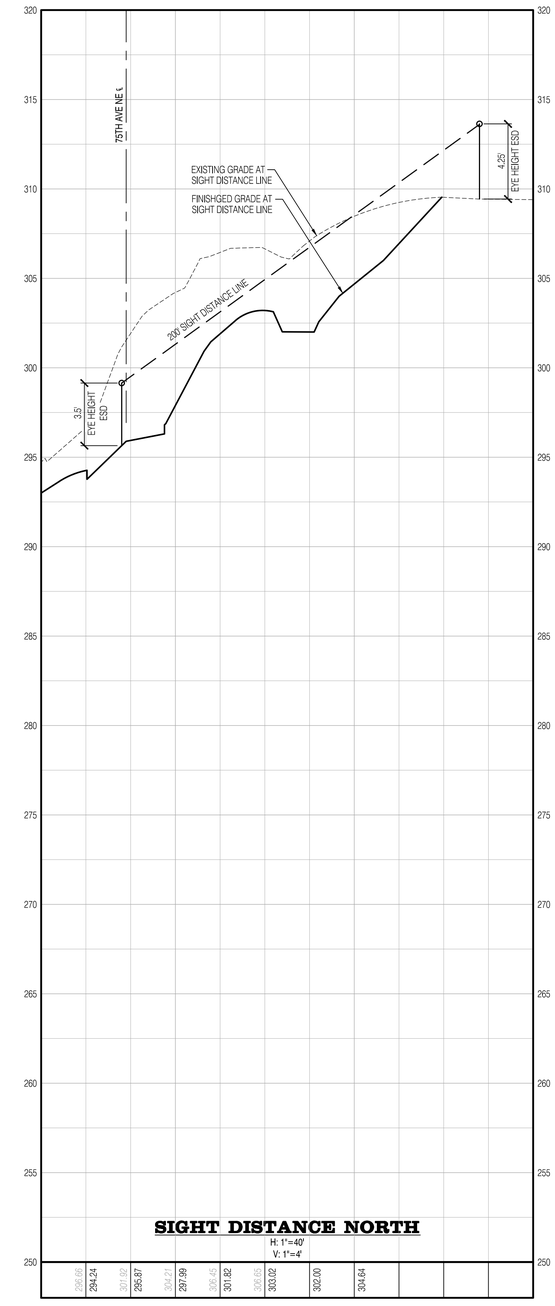
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JOB NUMBER:	23-0010

PR-03

10 OF 14

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SIGHT DISTANCE NORTH

H: 1"=40'
V: 1"=4'

CITY PROJECT NUMBER: PA24-014

UTILITY NOTE

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Redmond, WA 98052

PRELIMINARY ROAD PROFILES

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

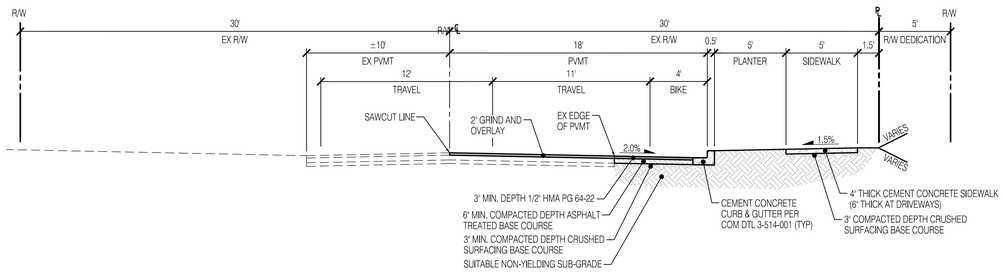
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JOB NUMBER:	23-0010

PR-04

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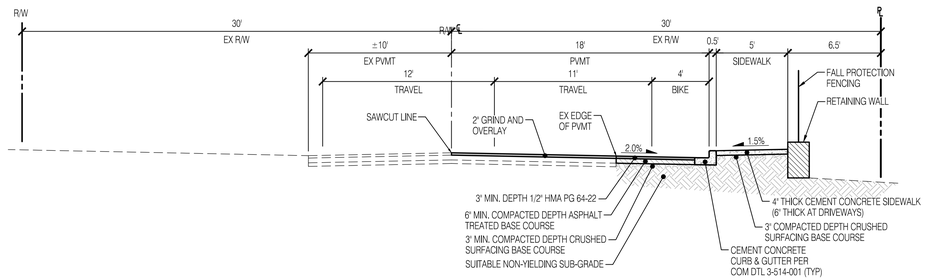
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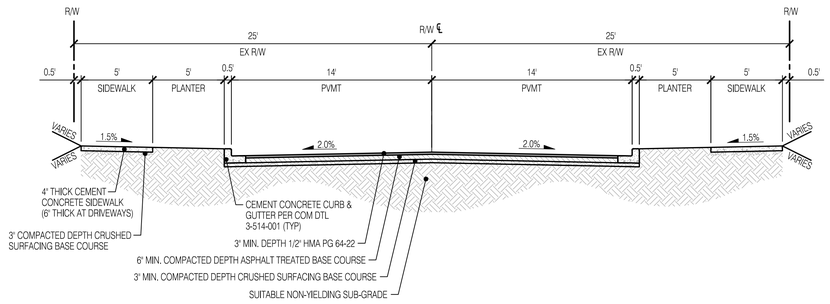
44TH ST NE ROAD SECTION STA 37+63 TO 41+34

SCALE: 1"=5'



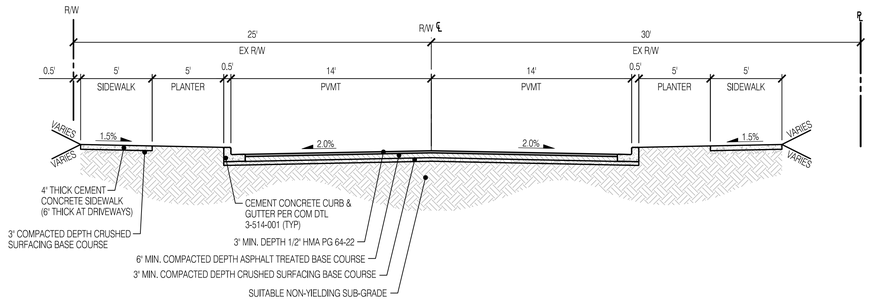
44TH ST NE ROAD SECTION STA 34+21 TO 37+63

SCALE: 1"=5'



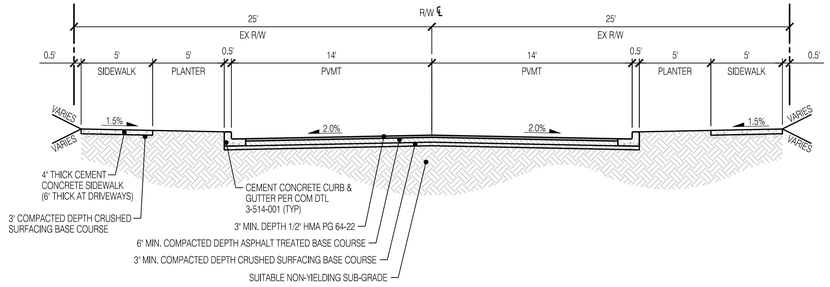
ROAD A ROAD SECTION

SCALE: 1"=5'



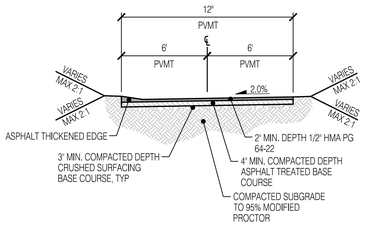
75TH RD NE ROAD SECTION

SCALE: 1"=5'



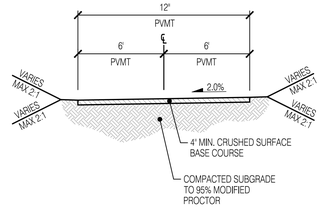
ROAD B ROAD SECTION

SCALE: 1"=5'



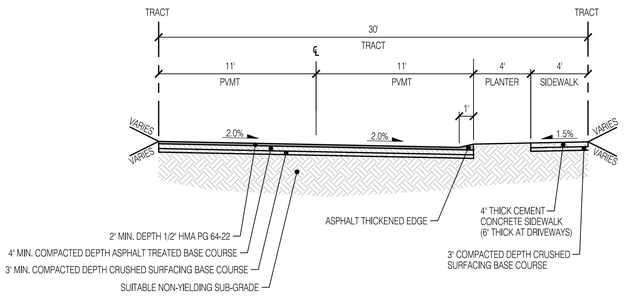
VAULT ACCESS - TRACT 998 AND 996

SCALE: 1"=5'



SEWER MAINTENANCE ROAD SECTION

SCALE: 1"=5'



TRACT 997-PRIVATE ROAD

SCALE: 1"=5'

CITY PROJECT NUMBER: PA24-014

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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 6-13-24

ENGINEER'S STAMP

REVISIONS

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Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

ROAD SECTIONS

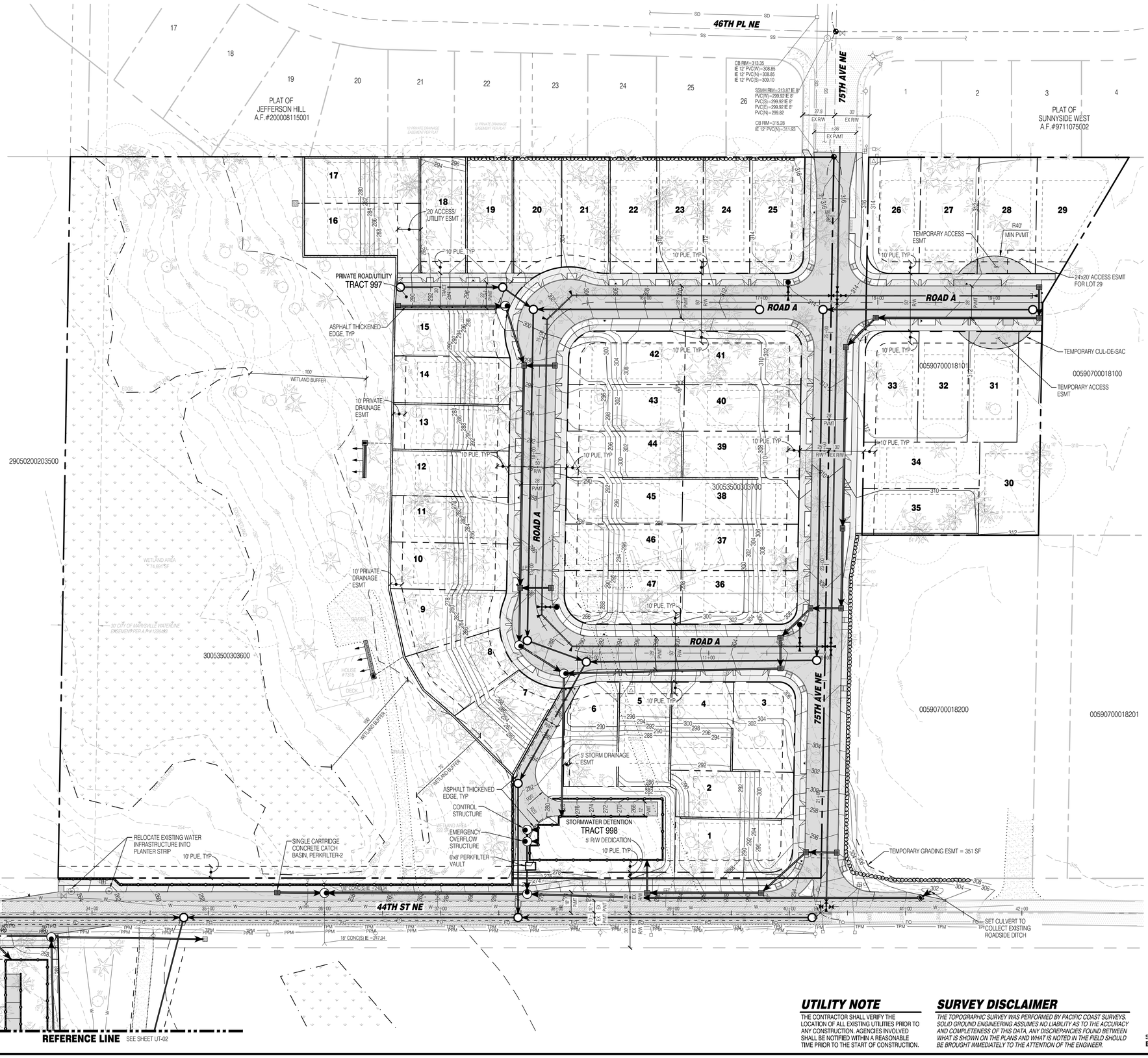
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
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JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

PR-05
12 OF 14

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N

0 40 80

LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING
	STORM MAIN PIPE
	SEWER MAIN PIPE
	WATER MAIN PIPE
	DRAIN PIPE
	FRENCH DRAIN
	FIRE HYDRANT
	SEWER MANHOLE
	SEWER CLEANOUT
	TYPE 1 CATCH BASIN W/ SOLID LID
	TYPE 1 CATCH BASIN W/ OPEN GRATE
	TYPE 2 CATCH BASIN, SOLID LID
	TYPE 2 CATCH BASIN W/ OPEN GRATE
	STORM CLEAN OUT

NOTES

1. LOTS 16 AND 17 WILL REQUIRE RESIDENTIAL FIRE SPRINKLERS.

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8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY UTILITY PLAN

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

CITY PROJECT NUMBER: PA24-014

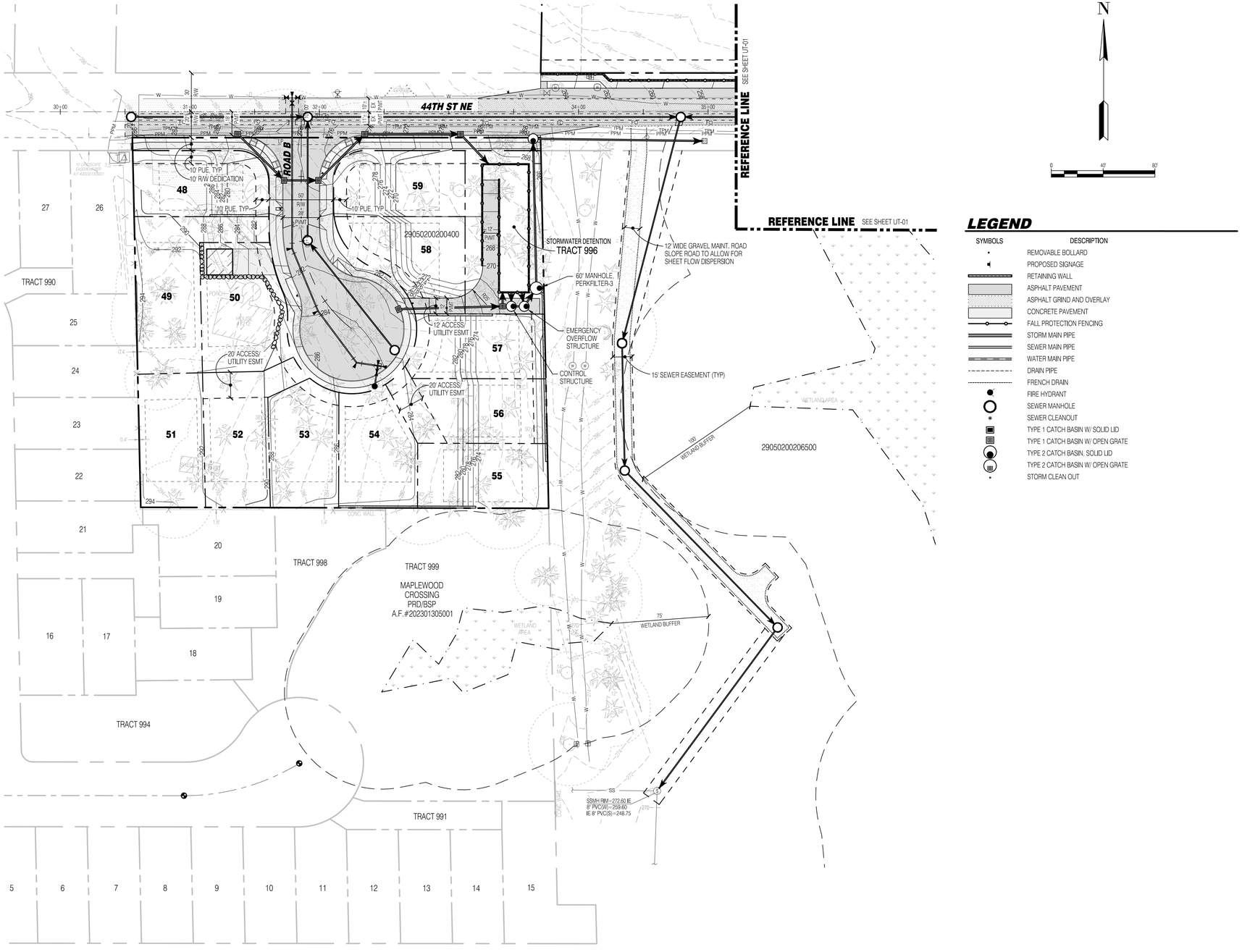
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UT-01

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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING
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	SEWER MAIN PIPE
	WATER MAIN PIPE
	DRAIN PIPE
	FRENCH DRAIN
	FIRE HYDRANT
	SEWER MANHOLE
	SEWER CLEANOUT
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Redmond, WA 98052

PRELIMINARY UTILITY PLAN

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
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UT-02

14 OF 14

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Commitment for Title Insurance

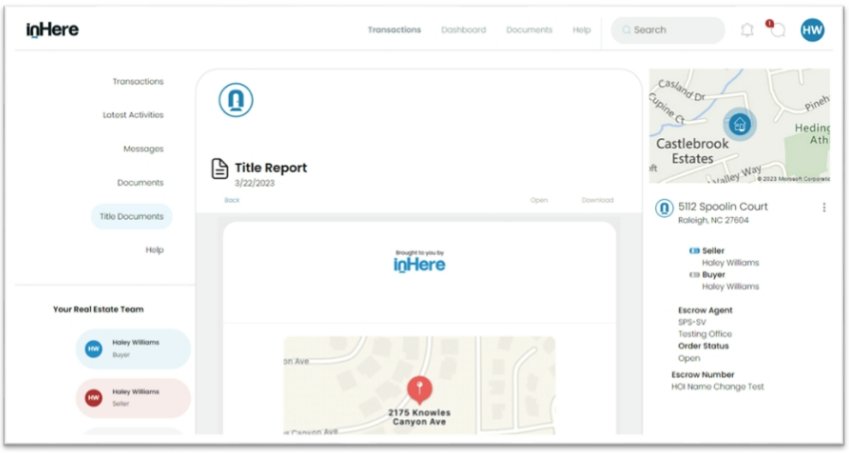
Title Officer: Builder Unit
File No.: 500150806

Introducing inHere® Digital Title
The inHere Digital Title View is an easy-to-read digital view of your title report (or commitment/prelim). This report will tell you:

- the current state of the property's title
- what needs to be cleared in order for a title insurance policy to be issued (like mortgages or liens that need to be paid off)
- what will and will not be covered by the title insurance policy

The future of real estate is... inHere®.
The inhere Experience Platform transforms the entire experience, making it easy and safe to start, track, notarize, and close on your next home transaction.

go.inhere.com



SUBDIVISION

Issued By:

CHICAGO TITLE INSURANCE COMPANY

Guarantee/Certificate Number:

500150806

CHICAGO TITLE INSURANCE COMPANY

a corporation, herein called the Company

GUARANTEES

TBD and TBD

herein called the Assured, against actual loss not exceeding the liability amount stated in Schedule A which the Assured shall sustain by reason of any incorrectness in the assurances set forth in Schedule A.

LIABILITY EXCLUSIONS AND LIMITATIONS

1. No guarantee is given nor liability assumed with respect to the identity of any party named or referred to in Schedule A or with respect to the validity, legal effect or priority of any matter shown therein.
2. The Company's liability hereunder shall be limited to the amount of actual loss sustained by the Assured because of reliance upon the assurance herein set forth, but in no event shall the Company's liability exceed the liability amount set forth in Schedule A.

Please note carefully the liability exclusions and limitations and the specific assurances afforded by this guarantee. If you wish additional liability, or assurances other than as contained herein, please contact the Company for further information as to the availability and cost.

Chicago Title Insurance Company

By:

Michael J. Nolan, President

Chicago Title Company of Washington
3002 Colby Ave., Suite 200
Everett, WA 98201

Countersigned By:

Brent Aune
Authorized Officer or Agent

Attest:

Marjorie Nemzura, Secretary

ISSUING OFFICE:
Title Officer: Builder Unit Chicago Title Company of Washington 3002 Colby Ave., Suite 200 Everett, WA 98201 Fax: (866)827-8844 Main Phone: (425)259-8223 Email: evebuilder@ctt.com

SCHEDULE A

Liability	Premium	Tax
$1,000.00	$350.00	$34.65

Effective Date: May 13, 2024 at 08:00 AM

The assurances referred to on the face page are:

That, according to those public records which, under the recording laws, impart constructive notice of matter relative to the following described property:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

Title to said real property is vested in:

Adelfia LLC, a Washington Limited Liability Company as to Parcel A and
Chris J. Markezinis and Dana L. Markezinis, husband and wife; and
John J. Markezinis and Kelly J. Markezinis, husband and wife, each as their interests may appear as to Parcel B
Keystone Land LLC, a Washington Limited Liability Company as to Parcel C and
Lauren A. Squaglia, as his separate estate as to Parcel D

subject to the matters shown below under Exceptions, which Exceptions are not necessarily shown in the order of their priority.

END OF SCHEDULE A

EXHIBIT "A"

Legal Description

For APN/Parcel ID(s): 300535-003-036-00 IOP, 300535-003-037-00 IOP, 005907-000-181-01 and 290502-002-004-00

PARCEL A: 3-036

LOT 7 OF SURVEY, RECORDED IN BOOK 4 OF SURVEYS, PAGE 166, UNDER AUDITOR'S FILE NO. 7609290248, BEING A PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 30 NORTH, RANGE 5 EAST OF THE WILLAMETTE MERIDIAN.

EXCEPT MOBILE HOME(S), IF ANY.

SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

PARCEL B: 3-036 and 3-037

LOT 8 OF SURVEY, RECORDED IN BOOK 4 OF SURVEYS, PAGE 166, UNDER AUDITOR'S FILE NO. 7609290248, BEING A PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 35, TOWNSHIP 30 NORTH, RANGE 5 EAST OF THE WILLAMETTE MERIDIAN.

SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

PARCEL C: 181-01

PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA22-001, RECORDED UNDER AUDITOR'S FILE NO. 202207195002 RECORDS OF SNOHOMISH COUNTY BEING A PORTION OF TRACT 181, SUNNYSIDE FIVE ACRE TRACTS, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 7 OF PLATS, PAGE 19 IN RECORDS OF SNOHOMISH COUNTY

SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON

PARCEL D: 2-004

THE EAST 315 FEET OF THE NORTH HALF OF THE NORTHWEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

SCHEDULE B

GENERAL EXCEPTIONS

A. Rights or claims of parties in possession, or claiming possession, not shown by the Public Records.

B. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land.

C. Easements, prescriptive rights, rights-of-way, liens or encumbrances, or claims thereof, not shown by the Public Records.

D. Any lien, or right to a lien, for contributions to employee benefit funds, or for state workers' compensation, or for services, labor, or material heretofore or hereafter furnished, all as imposed by law, and not shown by the Public Records.

E. Taxes or special assessments which are not yet payable or which are not shown as existing liens by the Public Records.

F. Any lien for service, installation, connection, maintenance, tap, capacity, or construction or similar charges for sewer, water, electricity, natural gas or other utilities, or for garbage collection and disposal not shown by the Public Records.

G. Unpatented mining claims, and all rights relating thereto.

H. Reservations and exceptions in United States Patents or in Acts authorizing the issuance thereof.

I. Indian tribal codes or regulations, Indian treaty or aboriginal rights, including easements or equitable servitudes.

J. Water rights, claims or title to water.

SCHEDULE B
(continued)

SPECIAL EXCEPTIONS

1. No search has been made as to property taxes and assessments. Property taxes and assessments will be searched upon request.

THE FOLLOWING MATTERS AFFECT PARCEL A:

2. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Town of Marysville
Purpose:	Water Line
Recording Date:	February 25, 1957
Recording No.:	1226499
Affects:	West 30 Feet of Said premises

Said Easement contains a covenant reserving the party of the second part the right to enter, reference to the record is hereby made for full particulars

3. Release of Damages and the terms and conditions thereof:

In Favor Of:	Snohomish County, a municipal corporation
Recorded:	May 16, 1969
Recording No.:	2093460
As Follows:	That the said first parties hereby consent to the natural flow of surface water from said plat to be carried in its natural channel across the property of the first parties and to hold Snohomish County blameless for any damage that may be caused by said flow.

4. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, encroachments, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Survey:

Recording No: 7609290248

5. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Purpose:	Water Line that would stop water flow or harm line
Recording Date:	November 21, 1979
Recording No.:	7911210154
Affects:	South 10 feet of Said premises, except West 30 feet

SCHEDULE B
(continued)

6. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on the purported City of Marysville Boundary Line Adjustment No. 19-004:

Recording No: 201910295002

Note: We note a lack of recorded deeds perfecting the purported Boundary Line Adjustment.

THE FOLLOWING MATTERS AFFECT PARCEL B:

7. Release of Damages and the terms and conditions thereof:

In Favor Of: Snohomish County, a municipal corporation
Recorded: May 16, 1969
Recording No.: 2093460
As Follows: That the said first parties hereby consent to the natural flow of surface water from said plat to be carried in its natural channel across the property of the first parties and to hold Snohomish County blameless for any damage that may be caused by said flow.

8. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Survey:

Recording No: 7609290248

9. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

In favor of: Public Utility District No. 1 of Snohomish county
Purpose: Underground electric transmission and distribution line
Recording Date: September 20, 1978
Recording No: 7809200175
Affects: A 7 foot strip in the Southerly portion of Said premises

10. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Purpose: Tight line and drainfield
Recording Date: February 19, 1980
Recording No.: 8002190104
Affects: Portion of said premises approximately as delineated therein

Said easement is a re-recording of easement recorded under Auditor's File No. 7911210153

SCHEDULE B
(continued)

11. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on the purported City of Marysville Boundary Line Adjustment No. 19-004:

Recording No: 201910295002

Note: We note a lack of recorded deeds perfecting the purported Boundary Line Adjustment.

12. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Chris J. Markenzinis and Dana Markezinis, husband and wife and John J. Markeznis and Kelly Mareznis, a married couple
Purpose: ingress, egress and utilities
Recording Date: October 29, 2019
Recording No.: 201910290273
Affects: Portion of said premises approximately as delineated therein

THE FOLLOWING MATTERS AFFECT PARCEL C:

13. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Short Plat no. SP 247 96-79):

Recording No: 8003210152

14. Reservations and recitals contained in the Deed as set forth below:

Recording Date: March 27, 1980
Recording No.: 8003270355

Said document provides for, among other things, the following:
refer to document for details

15. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Public Utility District No. 1 of Snohomish County
Purpose: Electric transmission and/or distribution line
Recording Date: June 13, 1983
Recording No.: 8306130111
Affects: A portion

Note: Contains tree removal rights

SCHEDULE B
(continued)

16. The effect if any of that document entitled Declaration of Covenants and the terms and conditions thereof:

Recording Date: November 3, 1986
Recording No.: 8611030298

Note: Said instrument has no legal description

17. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Boundary Line Adjustment and the terms and conditions thereof: Boundary Line Adjustment :

Recording No: 8810310026

18. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Purpose: ingress, egress and utilities
Recording Date: March 21, 1989
Recording No.: 8903210260

19. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on Boundary Line Adjustment and the terms and conditions thereof: :

Recording No: 9107290445

20. Covenant for Low Flow Fixtures and the terms and conditions thereof:

Recording Date: October 23, 1992
Recording No.: 9210230309

21. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on City of Marysville Boundary Line Adjustment Survey:

Recording No: 200806065003

SCHEDULE B
(continued)

22. Covenants, conditions, restrictions, recitals, reservations, easements, easement provisions, encroachments, dedications, building setback lines, notes, statements, and other matters, if any, but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, ancestry, or source of income, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth on survey for the City of Marysville Boundary Line Adjustment No. BLA22-001:

Recording No: 202207195002

THE FOLLOWING MATTERS AFFECT PARCEL D:

23. Waiver of all claims for damages of whatever kind which may be occasioned to adjacent land by the location, establishment, opening and maintenance of a public road, as provided by instrument recorded under Recording Number 1071262.

24. Any easements not disclosed by the public records as to matters affecting title to real property, whether or not said easements are visible and apparent.

Affects: All parcels

25. Any question, claim or challenge due to said parcels not being contiguous and/or separated by a public right of way.

Affects: All Parcels

26. Mobile home improvements are expressly excluded.
Affects: Parcel A and B

27. The manufactured housing unit or mobile home, as defined in RCW 46.04.302, located or to be located on the Land is subject to licensing and title registration by the Department of Motor Vehicles pursuant to RCW 46.12.290.

The manufactured housing unit will be expressly excepted from the legal description and not insured by the policy unless the Certificate of Title is eliminated and the manufactured housing unit is converted to real property as required by RCW 65.20.

A Manufactured Home Title Elimination Application should be obtained from the Department of Licensing. The application must be signed by the registered and legal owners of the manufactured housing unit, the owner of the Land, the city or county building permit office, approved by the Department of Licensing, and recorded or available for recording.

Evidence must be submitted that personal property taxes on the manufactured housing unit have been paid through the current year and personal property taxes for next year, if subject to assessment, have been paid.

Please contact your title officer if the manufactured housing unit is not to be converted to real property.

Affects: Parcel A

SCHEDULE B
(continued)

28. Any rights, interests, or claims which may exist or arise by reason of the following matters disclosed by survey,

Job No.: 21343
Dated: October 27, 2021
Prepared by: Core Design
Matters shown: Fences do not conform to the property lines

No coverage will be afforded for the above matters.

Affects: Parcel A

29. Any rights, interests, or claims which may exist or arise by reason of the following matters disclosed by survey,

Job No.: 21-2394
Dated: June 13, 2022
Prepared by: Pacific Coast Surveys, Inc.
Matters shown: fences do not conform to the North property line

No coverage will be afforded to the above matters.

30. A deed of trust to secure an indebtedness in the amount shown below,

Amount: $273,000.00
Dated: September 27, 2016
Trustor/Grantor: Chris J. Markezinis and Dana L. Markezinis, husband and wife and John J. Markezinis and Kelly J. Markezinis, husband and wife
Trustee: First American Title Insurance Company
Beneficiary: Mortgage Electronic Registration Systems, Inc., solely as nominee for Fairway Independent Mortgage Corporation
Recording Date: September 28, 2016
Recording No.: 201609280670
Affects: Parcel B

31. A deed of trust to secure an indebtedness in the amount shown below,

Amount: $396,519.00
Dated: May 24, 2019
Trustor/Grantor: Lauren Alesa Squaglia, a single woman
Trustee: Chicago Title Company
Beneficiary: Mortgage Electronic Registration Systems, Inc., acting solely as nominee for CrossCountry Mortgage, Inc., as lender
Loan No.: 55221904560201
Recording Date: May 30, 2019
Recording No: 201905300018
Affects: Parcel D

SCHEDULE B
(continued)

32. The Company's liability for this report is limited to $1,000.00. This report is based on the company's property records, and no liability is assumed for items misindexed or not indexed in the public records, or for matters which would be disclosed by an inquiry of the parties in possession or by an accurate survey or inspection of the premises. This report and the legal description given herein are based upon information supplied by the applicant as to the location and identification of the premises in question, and no liability is assumed for discrepancies resulting therefrom. This report does not represent either a commitment to insure title, an examination of, or opinion as to the sufficiency or effect of the matter shown, or an opinion as to the marketability of title to the subject premises.

END OF SCHEDULE B

June 12, 2024

City of Marysville
Community Development Department
Attn: Emily Morgan, Senior Planner
501 Delta Avenue
Marysville, WA 98270

RE: Response to Williams Pointe Subdivision (PA24-014) Technical Review 1

Dear Ms. Morgan,

This is a response to Comment 6 in the technical review comment letter, dated May 23, 2024, for the Williams Pointe subdivision. The comment is as follows:

> *Based on comments received by the Tulalip Tribes (comments attached) as well as findings made while reviewing the application materials, there appear to be discrepancies with the critical area reports and wetland delineations for the subject property. A report was conducted in 2019 by Wetland Resources that concluded that Wetland A was a Category I wetland with a 125 ft. buffer. This conclusion was further confirmed with a delineation prepared by Raedeke in 2022 for the previous land use application (PA22-024) which again, concluded Wetland A to be a Category I wetland. However, the current report conducted by Wetland Resources concludes that Wetland A is a Category II with a 100 ft. buffer.*
>
> *Based on these conflicting reports, please provide justification as to why the Category changed. A 3rd party peer review may be required. The mentioned reports may be viewed HERE.*

As noted, Wetland Resources, Inc. and Raedeke both rated Wetland A for previous land use proposals. A comparison of the rating forms shows that the only difference between the earlier ratings and the current rating is the answer to question H 2.3, which is an analysis of existing land use intensity within one kilometer of the wetland unit. Under the earlier ratings, high-intensity land uses covered less than 50 percent of the one kilometer polygon. Our analysis, which is calculated in CAD software, showed it as 44.4 percent in 2019. As a result, question H 2.3 scored zero points and resulted in 23 overall points for the wetland.

Several housing developments have occurred between the earlier proposals and the current proposal and the current high-intensity development in the one kilometer polygon is 51.8 percent. This changes the score for question H 2.3 from zero to negative two points, and results in 22 total points for the wetland. The scoring range for Category II wetlands is 20-22 total points and the scoring range for Category I wetlands is 23-27 total points, so the wetland is now classified as a Category II wetland.

A copy of the current Wetland Rating Figure A-2 with a current underlying aerial photo is attached. The areas of high-intensity development that differ from the earlier ratings are outlined in thick white lines to highlight the changes.

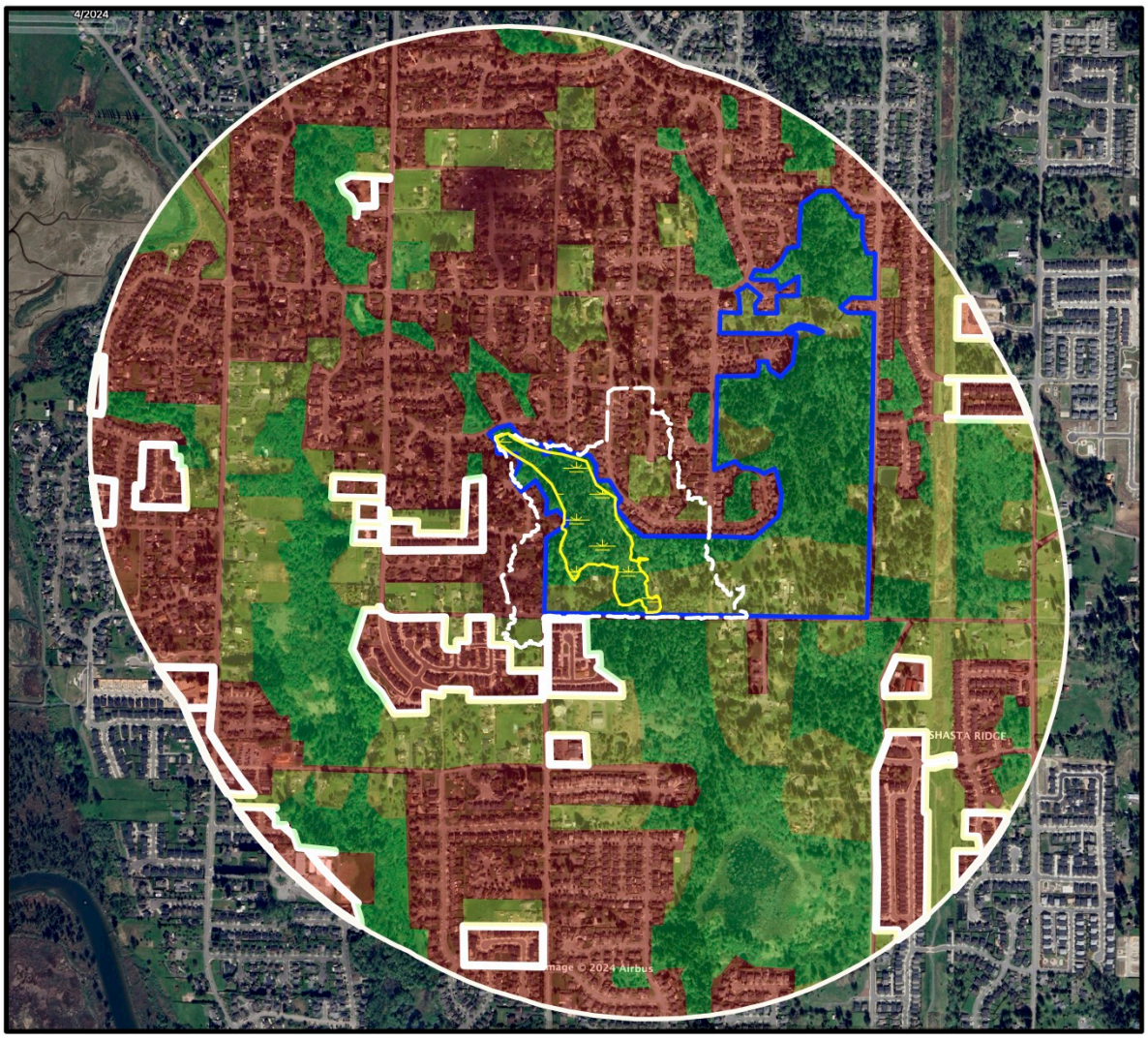
Please let me know if you have any questions about this issue.

Wetland Resources, Inc.



John Laufenberg
Principal Ecologist
Professional Wetland Scientist

WETLAND RATING FIGURE 2- WETLAND A



CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 4.3:1

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

Scale 1" = 1,500'

0 1,500 3,000

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland A

Figure A-2
WRI Job # [illegible]
Rated b

MARYSVILLE CIVIC CAMPUS
501 Delta ◆ Marysville, WA 98270
(360) 363-8100 ◆ (360) 651-5099 FAX

MEMORANDUM

To: Emily Morgan, Senior Planner

From: Kacey Simon, Civil Plan Reviewer

RE: Williams Point Subdivision, File# PA24-014
59 Lot Subdivision
7315 44th St NE & Parcel #'s 30053500303600, 30053500303700, 00590700018101, 29050200200400

Date: 6/26/2024

The following comments are offered after review of the above referenced application.

1. **Access**:
    a. Auto courts are only permitted in a PRD. This project is not proposing to be a PRD so TRACT 997 will not be allowed as shown. This can only be a shared driveway serving a maximum of 2 lots. This may also not be a private road as private roads are only allowed in short plats.
    b. Please show the temporary cul-de-sac needed at the eastern side of Road A. Any temporary cul-de-sac will need to have a minimum 84' right-of-way diameter across the bulb.

Standard Comments:

2. Survey control datum NAVD-88 and NAD-83 are required to be used. Civil construction plans will not be accepted in any other datum.

3. Fire flow will need to be completed prior to 1st civil plan review and submitted with 1st civil plan review. Contact Ryan Keefe at 360-363-8168 to schedule.

4. Trench restoration is to be completed in accordance with section 3-703 of the EDDS. A full lane or full street overlay may be required.

5. The onsite grading and placement of any retaining walls must be compliant with section 22D.050.030 of the MMC.

6. The applicant is responsible for identifying any existing well or septic systems on site or on adjacent properties. If there are any existing septic systems on site they need to be

decommissioned based on the Snohomish Health District standards. If there are any wells on site they need to be decommissioned based on Department of Ecology standards.

7. Please refer to MMC 22G.030.020 for applicable plan review and construction inspection fees.

8. **All civil construction plan submittals are to be routed directly to msvlpermits@marysvillewa.gov.** The first *civil construction* plan submittal is to consist of a completed grading permit application, a plan set, a copy of the drainage report and a copy of the geotechnical report. **Once the documents are ready to be submitted, a permit tech at the email address above will provide you a link to where the materials can be uploaded to.**
    a. Review timing:
        i. First review = 5 weeks
        ii. Second review = 3 weeks
        iii. Third review = 3 week
        iv. Subsequent reviews will be 3 weeks.

9. Please be advised these comments are in reference to specific items and do not imply a full review of the proposed application. Additional comments which may change the design requirements will be provided during the civil construction plan review process.

If you have additional questions regarding the above comments, please contact me at ksimon@marysvillewa.gov or at (360) 363-8280.

cc: Ken McIntyre, PE, Assistant City Engineer

MARYSVILLE
PUBLIC WORKS

MEMORANDUM

TO: Emily Morgan, Senior Planner

FROM: Kim Bryant, Water Operations Supervisor
Tim King, Utility Construction Lead II
Ryan Keefe, Water Operations Lead II

DATE: May 21st, 2024

SUBJECT: Williams Pointe Subdivision, PA24-014

Public Works Operations has reviewed the Williams Pointe Subdivision submittal and has the following comments:

1. Water meter locations not called out or shown;
2. There are two water mains on 44th St only one is shown. Need to connect to 8";
3. There is a 14" water main located on west side of property going north and south, plans do not show this;
4. Plat is shown connecting to two separate pressure zones. A closed zone valve will need to be installed/shown at North 75th Ave NE connection;
5. Dead end water main on Road A will require a 2" blow off assembly;
6. Water details not shown;
7. Size of water main not called out.

If the applicant has any questions about these comments, I can be contacted at (360) 363-8163 or kbryant@marysvillewa.gov.

(360) 363-8100

Public Works
80 Columbia Avenue
Marysville, WA 98270

From: Todd Gray
To: Emily Morgan
Subject: [External!] RE: Williams Pointe Subdivision - PA24-014
Date: Wednesday, June 26, 2024 4:01:19 PM
Attachments: image002.png

[CAUTION:] This email originated from outside the City of Marysville. **Do not click links or open attachments** unless you recognize the sender and know the content is safe. Contact helpdesk if you have any concerns or questions.

Hi Emily,

I looked through the revised materials, and Wetland Resources' response. I am satisfied with the rating change, and have no further comments at this time.

Thank you,

Todd Gray
Environmental Protection Ecologist
The Tulalip Tribes | Natural Resources Dept.
360-716-4620 | toddgray@tulaliptribes-nsn.gov

From: Emily Morgan <emorgan@marysvillewa.gov>
Sent: Wednesday, June 26, 2024 7:46 AM
To: Todd Gray <toddgray@tulaliptribes-nsn.gov>
Subject: Williams Pointe Subdivision - PA24-014

WARNING This email originated outside of our organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Todd,

I wanted to reach out and see if you had a chance to review the revised materials for the above project. As part of their resubmittal, there was a memo provided by Wetland Resources (Exhibit 025) that explained why the rating changed from a Cat I to a Cat II. DOE has also reviewed all the reports and found their justification warranted.

- **Updated Materials – Exhibit 22-25 -** http://docs.marysvillewa.gov/htcomnet/public/?folder=74a9ab27

I would love to have a follow up response from you for the file—let me know if you have any questions.

Thanks,

Emily Morgan (she/her)
Senior Planner
501 Delta Ave
Marysville, WA 98270
360.363.8216 Direct

How are we doing? Please take our survey and let us know!

July 25, 2024

City of Marysville Community Development Department
ATTN: Emily Morgan
501 Delta Avenue
Marysville, WA 98270
(360) 363-8000

RE: Williams Pointe Subdivision (PA24-014) – Technical Review 2

Project: Williams Pointe (SGE #23-0010)

Emily,

Please find below responses to all comments as received from the City of Marysville. All comments have now been addressed and responses to each comment are outlined below.

Access Comments

1. (KS) Auto courts are only permitted in a PRD. This project is not proposing to be a PRD so Tract 997 will not be allowed as shown. This can only be a shared driveway serving a maximum of 2 lots. This may also not be a private road as private roads are only allowed in short plats.

   Response: Noted. Coordination has occurred with the City and the layout as depicted in the revised plans has been updated. A driveway within an easement is shown to access lot 16.

2. (KS) Please show the temporary cul-de-sac needed at the eastern side of Road A. Any temporary cul-de-sac will need to have a minimum 84' right-of-way diameter across the bulb.

   Response: A temporary cul de sac has been shown as requested.

3. the civil construction plan review process.

   Response: Noted

Public Works Operations Comments

1. (KB) Water meter locations not called out or shown.

   Response: Water meters are now shown.

2. (KB)There are two water mains on 44th St only one is shown. Need to connect to 8".

   Response: This will be depicted on the civil permit plans. This project intends to connect to the 8" main.

3. (KB) There is a 14" water main located on west side of property going north and south, plans do not show this.

   Response: This will be depicted on the civil permit plans.

4. (KB) Plat is shown connecting to two separate pressure zones. A closed zone valve will need to be installed/shown at North 75th Ave NE connection.

   Response: This will be depicted on the civil permit plans.

5. (KB) Dead end water main on Road A will require a 2" blow off assembly.

   Response: This has been added to the preliminary plans and will be shown in the civil documents.

6. (KB) Water details not shown.

Response: This will be depicted on the civil permit plans.

7. (KB) Size of water main not called out.

   Response: This will be depicted on the civil permit plans.

Thank you for your review. Let us know if you have any questions or if you need any additional information. We are happy to discuss this project further with you as necessary.

Regards,



Tom Abbott, P.E.
Principal Civil Engineer
Solid Ground Engineering

CRITICAL AREA STUDY
AND
BUFFER MITIGATION PLAN

FOR

WILLIAMS POINTE
MARYSVILLE, WA

Wetland Resources, Inc. Project #23338

Prepared By
Wetland Resources, Inc.
9505 19th Avenue SE, Suite 106
Everett, WA 98208
(425) 337-3174

Prepared For
Keystone Land, LLC
Attn: Joe Long
13805 Smokey Point Boulevard, #102
Marysville, WA 98271

July 26, 2024

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1.0 INTRODUCTION

Wetland Resources, Inc. (*WRI*) completed a site investigation on December 13, 2023, to verify the boundaries of wetlands located on the 13.8-acre subject property (Parcels# 00590700018101, 00590700018200, 29050200200400, 30053500303600, 30053500303700). The site is located at 7212, 7315, 7417, and 7513 44th Street NE, in the city limits of Marysville, Washington (Section 2, Township 29N, Range 5E, W.M.).



Figure 1 - Aerial view of the subject site.

1.1 SITE DESCRIPTION

The subject property currently consists of several single-family residences, access driveways, and undeveloped forested areas. Access to the site is via 44th Street NE. Vegetation within the forested portions of the site includes a dense over story of western red cedar (*Thuja plicata*), big-leaf maple (*Acer macrophyllum*), red alder (*Alnus rubra*), with an understory of vine maple (*Acer circinatum*), Himalayan blackberry (*Rubus armeniacus*), salmonberry (*Rubus spectabilis*), beaked hazelnut (*Corylus cornuta*), trailing blackberry (*Rubus ursinus*), sword fern (*Polystichum munitum*), lady fern (*Athyrium filix-femina*), spreading wood-fern (*Dryopteris expansa*), and skunk cabbage (*Lysichiton americanus*).

Two wetlands (Wetlands A and B) are located on the subject property, north of 44th Street NE, and two wetlands (Wetlands C and D) are located off-site, south of 44th Street NE. Pursuant to

Marysville Municipal Code (MMC 22E.010.060(1)), these wetlands were rated using the *Washington State Department of Ecology Wetland Rating System for Western Washington* 2014 Update, Version 2.0 (Hruby & Yahnke 2023). Wetlands A and C are classified as Category II wetlands and Wetlands B and D are classified as Category III wetlands. Per MMC 22E.010.100(4), Category II wetlands receive 100-foot buffers and Category III wetlands receive 75-foot buffers.

1.2 PROJECT DESCRIPTION

The applicant is proposing a residential subdivision. The development will include residential lots, access roads, utilities, stormwater facilities, and landscaping. The proposed development also includes a new sewer line connecting the proposed development to an existing sewer system to the south. In order to accommodate the project, the applicant is proposing buffer width averaging for small portions of the lots and the sewer line connection. An existing mobile home, gravel driveway, and maintained yard within the buffer of Wetlands A and B will be removed and restored with native plantings.

No direct impacts to wetlands are proposed. Full descriptions of buffer impacts, mitigation, and restoration are provided in *Section 5* of this report.

2.0 REVIEW OF EXISTING INFORMATION

Prior to conducting the site investigation, public resources were reviewed to gather background information on the subject property and the surrounding area in regard to critical areas. The following sources were examined:

- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory: The National Wetlands Inventory (NWI) depicts a large palustrine forested/shrub wetland along the western portion of the subject property that extends off site to the northwest. A small palustrine forested/shrub wetland is shown off site to the southeast of the site.
- USDA/Natural Resources Conservation Service (NRCS) Web Soil Survey: The Web Soil Survey maps the site as Tokul gravelly medial loam, 0 to 8 and 8 to 15 percent slopes.
- WDFW Priority Habitat and Species (PHS) Interactive Map: The PHS mapping tool does not depict any priority habitats or species on site. The closest mapped feature is a freshwater wetland mapped approximately 400 feet off-site to the southeast.
- WDNR Forest Practices Application Mapping Tool (FPAMT): FPAMT does not depict any features on the subject property. A Type N stream is mapped off site, approximately 300 feet northwest of the site. Another Type N stream is mapped off site approximately 490 feet southeast of the site.
- Snohomish County PDS Map Portal: PDS does not depict any features on-site. The map depicts the same off-site streams as the FPAMT map. The off-site stream to the northwest is mapped as a non-fish habitat seasonal stream for the segment closest to the site. The stream transitions to fish habitat at approximately 320 feet from the site. The off-site stream to the southeast is mapped a as non-fish habitat seasonal stream. The portion of this stream closest

to the site is associated with a mapped freshwater scrub-shrub and emergent wetland. No other features are mapped in the vicinity of the site.

- WDFW SalmonScape: SalmonScape does not depict any features on the subject property. The map depicts the same off-site streams as FPAMT and PDS Map Portal. The stream to the northwest is mapped as perennial and no fish presence is mapped in the stream. The stream to the southeast is mapped as intermittent and gradient accessible to Chinook Salmon (*Oncorhynchus tshawytscha*), Coho Salmon (*Oncorhynchus kisutch*), Chum Salmon (*Oncorhynchus keta*), Steelhead Trout (*Oncorhynchus mykiss*), and Pink Salmon (*Oncorhynchus gorbuscha*).
- City of Marysville Critical Areas Map: The City of Marysville Critical Areas Map shows a Category III wetland in the western portion of the subject property. The map shows the same off-site streams as the FPAMT, PDS, and SalmonScape maps. These streams are shown as Type F. Three small Category III wetlands and two small Category II wetlands are mapped south of the subject property.

3.0 METHODOLOGY

3.1 WETLAND DETERMINATION AND DELINEATION

Wetland conditions were identified using routine methodology described in the *Corps of Engineers Wetlands Delineation Manual* (*Final Report*; January 1987), except where superseded by the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (*Version 2.0*, referred to as 2010 Regional Supplement). Our findings are consistent with these manuals. The following criteria descriptions were used in the wetland boundary determination:

1.) Examination of the site for hydrophytic vegetation (species present and percent cover);
2.) Examination of the site for hydric soils;
3.) Determining the presence of wetland hydrology

Hydrophytic Vegetation Criteria
The manuals define hydrophytic vegetation as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. One of the most common indicators for hydrophytic vegetation is when more than 50 percent of a plant community consists of species rated "Facultative" and wetter on lists of plant species that occur in wetlands.

Soils Criteria and Mapped Description
The manuals define hydric soils as those that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Field indicators are used for determining whether a given soil meets the definition for hydric soils.

The NRCS Web Soil Survey maps soils in the vicinity of the subject property as Tokul gravelly medial loam, 0 to 8 and 8 to 15 percent slopes.

Tokul gravelly medial loam is described as moderately deep, moderately well drained soil on till plains. This soil formed in glacial till and volcanic ash. Typically, the surface is covered with a mat of leaves, twigs, and decomposed litter about two inches thick. The surface layer is dark brown gravelly loam about 4 inches thick. The subsoil is brown, strong brown, and dark yellowish brown gravelly loam about 18 inches thick. A hardpan is at a depth of about 31 inches. Permeability of this soil is moderate above the hardpan and very slow through it. Available water capacity is moderate. Included in this unit are areas of soils that have slopes of more than 8 percent, McKenna and Norma soils in depressional areas along drainageways on till plains, Terric Medisaprists in depressional areas on till plains, Winston and Pastik soils on terraces and outwash plains, and Ragnar soils on outwash plains. Included areas make up about 25 percent of the total acreage. McKenna and Norma soils are listed as hydric on the Hydric Soils List for Washington State.

Hydrology Criteria
Wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface for a sufficient duration during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and chemically reducing conditions, respectively.

Additionally, areas which are seasonally inundated and/or saturated to the surface for a consecutive number of days ≥12.5 percent of the growing season are wetlands, provided the soil and vegetation parameters are met. Areas inundated or saturated between 5 and 12.5 percent of the growing season in most years may or may not be wetlands. Areas saturated to the surface for less than 5 percent of the growing season are non-wetlands. Field indicators are used for determining whether wetland hydrology parameters are met.

3.2 WETLAND CLASSIFICATIONS

Pursuant to MMC 22E.010.060(1), Wetland A was rated using the *Washington State Department of Ecology Wetland Rating System for Western Washington* 2014 Update, Version 2.0 (Hruby 2023). The wetland was classified using the U.S. Fish and Wildlife Service document (USFWS) *Classifications of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979), also known as the Cowardin Classification System and the U.S. Army Corps of Engineers manual *A Hydrogeomorphic Classification for Wetlands* (Brinson 1993), or HGM system. Required buffers are determined pursuant to MMC 22E.010.100(4).

3.3 WETLAND FINDINGS

3.3.1 Wetland A

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Seasonally Flooded/Saturated
Rating Category/Habitat Score: Category II/6 points
City of Marysville Standard Buffer Width: 100 feet

Wetland A is a large, depressional wetland located along the western portion of the site, extending off-site to the north and west. Vegetation within the on-site portion of Wetland A includes red alder (*Alnus rubra*; FAC), salmonberry (*Rubus spectabilis*; FAC), beaked hazelnut (*Corylus cornuta*; FACU), red-osier dogwood (*Cornus sericea*; FACW), skunk cabbage (*Lysichiton americanus*; OBL), piggyback plant (*Tolmeia menziesii*; FAC), lady fern (*Athyrium filix-femina*; FAC) and spreading wood-fern (*Dryopteris expansa*; FACW). Soils in the on-site portion of the wetland are generally black (10YR 2/1) silty loam from 0 to 16 inches. It is assumed these soils meet hydric soil indicator A12, Thick Dark Surface, given the site geomorphology and the strong hydrophytic vegetative community. A high water table (A2) was present at a depth of three inches and soils were saturated to the surface (A3) during the December site investigation.

3.3.2 Wetland B

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Saturated
Rating Category/Habitat Score: Category III/5 points
City of Marysville Standard Buffer Width: 75 feet

Wetland B is a small, depressional wetland located to the east of Wetland A. Vegetation within the wetland includes red alder (*Alnus rubra*; FAC), western red cedar (*Thuja plicata*; FAC), salmonberry (*Rubus spectabilis*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), vine maple (*Acer circinatum*; FAC), Japanese knotweed (*Fallopia japonica;* FACU), reed canary grass (*Phalaris arundinacea*; FACW), lady fern (*Athyrium filix-femina*; FAC), and sword fern (*Polystichum munitum*; FACU). Soils within the wetland are generally dark gray (10YR 4/1) sandy loam from 0 to 6 inches. From 6 to 14 inches below the soil surface, soils are grayish brown (10YR 5/2) silty clay loam with dark yellowish brown (10YR 3/6) redoximorphic features. A high water table (A2) was present at a depth of three inches and soils were saturated to the surface (A3) during the December site investigation.

3.3.3 Wetland C (Off-site)

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Seasonally Flooded/Saturated
DOE Rating Category: Category II
City of Marysville Standard Buffer Width: 100 feet

Wetland C is a large, depressional wetland located off-site, south of 44th Street NE. It received an overall score of 21 points on the DOE Rating System. Wetlands with overall scores between 20

and 22 are classified as Category II wetlands. In the city of Marysville, Category II wetlands receive buffers of 100 feet.

3.3.4 Wetland D (Off-site)

HGM Class: Depressional
Cowardin Classification: Palustrine, Forested Wetland, Broad-leaved Deciduous, Saturated
DOE Rating Category: Category III
City of Marysville Standard Buffer Width: 75 feet

Wetland D is a depressional wetland located off-site, south of Parcel # 29050200200400. It received an overall score of 18 points on the DOE Rating System. Wetlands with overall scores between 16 and 19 are classified as Category III wetlands. In the city of Marysville, Category III wetlands receive buffers of 75 feet.

3.4 Non-wetland Areas

Vegetation within the non-wetland areas of the site includes western red cedar (*Thuja plicata*, FAC), big-leaf maple (*Acer macrophyllum*; FACU), red alder (*Alnus rubra*; FAC), vine maple (*Acer circinatum*; FAC), salmonberry (*Rubus spectabilis*; FAC), Himalayan blackberry (*Rubus armeniacus*; FAC), trailing black berry (*Rubus ursinus*; FACU), and sword fern (*Polystichum munitum*; FACU). Non-wetland soils on the site are generally dark brown (10YR 3/3) and a loam texture throughout the soil profile, sometimes with yellowish red (5YR 4/6) redoximorphic features in the sublayer. The soils in areas not mapped as wetlands were dry throughout the profile at the time of the site investigation.

4.0 Wildlife

The on-site wetlands and buffers provide features that are beneficial to wildlife including resources such as food, water, thermal cover, and hiding cover in close proximity. Given the habitat available, the following mammalian species may use the area: Columbian black-tailed deer (*Odocoileus hemionus columbianus)*, American black bear (*Ursus americanus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), deer mice (*Peromyscus maniculatus*), moles (*Scapanus spp.*), shrews (*Sorex spp.),* Douglas squirrel (*Tamiasciurus douglasii*), and bats (*Myotis spp.*). The following avian species are expected to use the area: American Crow (*Corvus brachyrhynchos),* Stellar's Jay (*Cyanocitta stelleri*), Black-capped Chickadee (*Poecile atricapillus)*, Dark-eyed Junco (*Junco hyemalis*), Spotted Towhee (*Pipilo maculatus),* Bushtit (*Psaltriparus minimus*), Northern Flicker (*Colaptes auratus*), Hairy Woodpecker (*Picoides villosus*), Downy Woodpecker (*Dendrocopus villosus*), Red-breasted Nuthatch (*Sitka canadensis*), Brown Creeper (*Certhia americana*), Varied Thrush (*Ixoreus naevius*), and Red-tailed Hawk (*Buteo jamaicensis*). Other wildlife expected to use this site include pacific tree frog (*Hyla regilla*), northwestern salamander (*Ambystoma gracile*), and rough-skinned newt (*Taricha granulosa*).

These lists are not meant to be all-inclusive of the species using the site but is representative of common wildlife in the Marysville area. No threatened or endangered species are known to be associated with this site.

5.0 PROPOSED BUFFER MODIFICATIONS

To accommodate the proposed development, buffer averaging is proposed within the outer portion of the buffers associated with Wetlands A, B, and C, as allowed by MMC 22E.010.100(5). The existing mobile home, driveway and maintained yard will be removed on Parcel #30053500303600 and will be restored with native vegetation to bring the buffer condition into compliance with the standards of MMC 22E.010.100(1). A stormwater dispersion trench is proposed within an area of Wetland A buffer and is allowed per MMC 22E.010.100(10).

5.1 BUFFER WIDTH AVERAGING

In order to accommodate a portion of the proposed development and the sewer line connection, the applicant is proposing to modify the buffer through buffer width averaging. This is allowed per MMC 22E.010.100(5)(a) and (5)(c). The criteria in this code section are cited below in italics with responses below in standard text.

(5)(a) Buffer width averaging shall be allowed only where the applicant demonstrates to the community development department that the averaging will not impair or reduce the habitat, water quality purification and enhancement, storm water detention, ground water recharge, shoreline protection and erosion protection and other functions of the wetland and buffer.

All areas that are proposed for buffer reduction and buffer addition are composed of native forest. The total buffer area on-site will increase by 2,080 square feet over standard requirements. The areas proposed for buffer reduction associated with the off-site sewer line are limited to the narrow sewer easement. Since the majority of Wetland C's buffer is located off-site and outside the sewer easement, buffer addition along Wetland C cannot be proposed. Instead, buffer addition is proposed on-site, contiguous with the Wetland A buffer. Overall, the proposed buffer averaging plan will improve the functions and values provided by the on-site buffer areas.

… that lower-intensity land uses would be located adjacent to areas where buffer width is reduced…

A stormwater detention vault, one residential lot, and sewer line connection will be located adjacent to the proposed buffer reductions. Once constructed, these will be the lowest-intensity land uses associated with the proposed development so that impacts to the buffer of Wetland B and Wetland C are minimized.

…and that the total area contained within the buffer after averaging is no less than that contained within the standard buffer prior to averaging;

A total of 2,105 square feet of buffer reduction and 4,185 square feet of buffer addition are proposed. Therefore, the total area contained within the buffer after averaging will be 2,080 square feet larger than the standard required buffer.

(5)(c) Notwithstanding the reductions permitted in subsections (5)(a) and (b) of this section, buffer widths shall not be reduced by more than 25 percent of the required buffer.

The maximum buffer width reduction proposed is 10 percent, which is less than the 25 percent allowance.

5.2 Buffer Enhancement Plan

Pursuant to MMC 22E.010.100(1), wetland buffers shall consist of an undisturbed area of native vegetation. A portion of the buffer on Wetlands A and B consists of a mobile home, gravel driveway, and maintained yard. The applicant proposes to remove the mobile home and driveway and enhance this portion of buffer.

After removal, the areas previously covered with impervious surfaces will be tilled to de-compact the soil. After de-compaction, organic matter (compost or approved equal) and topsoil will be incorporated into the entire de-compacted area as necessary, not including areas inside the driplines of existing trees. Enhancement will also include removal of all invasive species. Once site preparation is completed, the following plants will be installed. All plants shall be marked with flagging and mulched, as specified in the planting notes.

Buffer Enhancement Area (17,812 square feet)

Common Name	Latin Name	Size	Spacing	Quantity
Douglas fir	*Pseudotsuga menziesii*	1 gallon	10’	57
Big-leaf maple	*Acer macrophyllum*	1 gallon	10’	57
Grand fir	*Abies grandis*	1 gallon	10’	57
Beaked hazelnut	*Corylus cornuta*	1 gallon	5’	86
Nootka rose	*Rosa nutkana*	1 gallon	5’	86
Snowberry	*Symphoricarpos albus*	1 gallon	5’	86
Salmonberry	*Rubus spectabilis*	1 gallon	5’	86
Thimbleberry	*Rubus parviflorus*	1 gallon	5’	86
Sword fern	*Polystichum munitum*	1 gallon	5’	86

6.0 Project Monitoring Program

6.1 Inspection and Reporting Requirements

1. Initial compliance/as-built report at completion of construction
2. Inspection and brief status report 30 days after planting
3. Inspection and brief status report early in the first growing season
4. Inspection and brief status report and the end of the first growing season
5. Inspection and brief status report early in the second growing season
6. Inspection and brief status report and the end of the second growing season
7. Annual site inspection (once per year in the fall) in years 3-5
8. Annual reports (one report submitted in the fall of each monitored year) for years 3-5

Purpose for Monitoring

The purpose for monitoring this mitigation project shall be to evaluate its success. Success will be determined if monitoring shows at the end of monitoring period that the definitions of success

stated below are met. The property owner shall grant access to the mitigation area for inspection and maintenance to the contracted landscape and/or wetland specialist and City of Marysville staff until the project is evaluated as successful.

Monitoring
Monitoring shall be conducted in accordance with the approved Mitigation Plan. The monitoring period will begin once the City receives written notification confirming the mitigation plan has been implemented and City staff inspects the site and issues approval of the installation.

Vegetation Monitoring
Sampling points or transects will be established for vegetation monitoring and photo points will be established from which photos will be taken throughout the monitoring period. Permanent sampling points must be identified on the mitigation site plans in the first monitoring report (they may be drawn on approved plans by hand). Each sampling point shall detail herbaceous, shrub, and tree coverage. Monitoring of vegetation sampling points shall occur annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified.

Photo points
No less than two permanent photo points will be established within the buffer enhancement area. Photographs will be taken from these points to visually record condition of the enhancement area. Photos shall be taken annually between May 15 and September 30 (prior to leaf drop), unless otherwise specified. Photo points must be identified on the mitigation site plans in the first monitoring map (they may be drawn on approved plans by hand).

Monitoring Report Contents
Monitoring reports shall be submitted by October 31 of each year during the monitoring period. As applicable, monitoring reports must include descriptions / data for:

1. Site plan and vicinity map
2. Historic description of project, including date of installation, current year of monitoring, restatement of mitigation / restoration goals, and performance standards
3. Plant survival, vigor, and areal coverage for every plant community (transect or sampling point data), and explanation of monitoring methodology in the context of assessing performance standards
4. Wetland and buffer conditions, e.g., surrounding land use, use by humans, and/or wild and domestic creatures
5. Observed wildlife, including amphibians, avians, and others
6. Assessment of nuisance / exotic biota and recommendations for management
7. Descriptions of any structural repair or replacement (i.e. fencing, signs, etc.)
8. Color photographs taken from permanent photo-points that shall be depicted on the monitoring report map

6.2 PROJECT SUCCESS & COMPLIANCE

Criteria for Success
Upon completion of the proposed mitigation project, an inspection by a qualified wetland professional shall be made to determine plan compliance. An as-built report will be supplied to the City of Marysville after the completion of planting to show compliance with the mitigation plan. The qualified wetland professional will perform condition monitoring of the plantings and provide reports according to the schedule described in Section 6.1.

Goal
To provide greater protection for the on-site wetlands.

Definition of Success
The mitigation project goal will be deemed successful when objectives are met, as evidenced through the observation of set performance standards.

Objectives

Objective 1: To establish a diverse, native plant community in the buffer restoration area that will persist and create an appropriate vegetative matrix.

Objective 2: To have significant native vegetative cover throughout the enhanced area.

Performance Standards

The objectives will be considered successfully met when, and if, the following performance standards are observed in the enhancement area:

	Year 1	Year 2	Year 3	Year 4	Year 5
Survivorship*	90%	80%	70%		
Native species cover**			30%	40%	50%
Invasive species cover	<10%	<10%	<10%	<10%	<10%

*Only applies to installed native plantings.
**Native volunteer species may be included to meet native cover requirements.
If Year 5 performance standards are met in an earlier year, the city may consider the project to be successful and terminate the monitoring period at that time.

6.3 MAINTENANCE

The mitigation areas will require periodic maintenance to remove undesirable species and replace vegetation mortality. Maintenance shall occur in accordance with the approved plans. Maintenance may include but will not be limited to removal of competing grasses (by hand if necessary), irrigation, fertilization (if necessary), replacement of plant mortality, and the replacement of mulch for each maintenance period. Chemical control, only if approved by City staff, shall be applied by a licensed applicator following all label instructions.

Duration and Extent
In order to achieve performance standards, the permittee shall be responsible for maintaining the mitigation area for the duration of the five-year monitoring period. Maintenance will include watering, weeding around the base of installed plants, pruning, replacement, re-staking, removal of all classes of noxious weeds (see Washington State Noxious Weeds List, WAC 16-750-005) as well as Himalayan blackberry, cutting down competing grasses, and any other measures needed to ensure plant survival.

Survival
The permittee shall be responsible for the health of 100% of all newly installed plants for one growing season after installation has been accepted by the City of Marysville. A growing season for these purposes is defined as occurring from spring to spring (March 15 to March 15 of the following year). For fall installation (often required), the growing season will begin the following spring. The permittee shall replace any plants that are failing, weak, defective in manner of growth, or dead during this growing season.

Installation Timing for Replacement Plants
Replacement plants shall be installed between November 1 and March 15, unless otherwise determined.

Standards for Replacement Plants
Replacement plants shall meet the same standards for size and type as those specified for the original installation, unless otherwise directed by a qualified professional.

Replanting
Plants that have settled in their planting pits too deep, too shallow, loose, or crooked shall be replanted.

Herbicides / Pesticides
Unless deemed absolutely necessary by the consulting biologist and/or the City, chemical controls shall not be used in the mitigation area, critical areas, or their buffers. Any chemical controls used shall be applied by a licensed applicator following all label instructions.

Irrigation / Watering
Water should be provided during the dry season (July 1 through October 15) for the first two years after installation to ensure plant survival and establishment. A temporary above ground irrigation system and/or water truck should provide water. Water should be applied at a rate of 1" of water twice per week for year one and 1" per week during year two.

General
The permittee shall include in general maintenance activities the replacement of any vandalized or damaged signs, habitat features, fences, or other structural components of this mitigation site.

6.4 CONTINGENCY PLAN

If 20 percent of the plants are severely stressed during any of the inspections, or it appears 20 percent may not survive, additional plantings of the same species may be added to the planting area. Elements of a contingency plan may include but will not be limited to more aggressive weed and invasive species control, pest control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

6.5 PROJECT NOTES

Pre-Construction Meeting
Mitigation projects are typically more complex to install than can be described in plans. Careful monitoring by a wetland professional for all portions of this project is strongly recommended. Construction timing and sequencing is important to the success of this type of project. There will be a pre-construction meeting on this site between the Permittee, consulting wetland professional, and laborers. The objective will be to verify the location of erosion control facilities, verify the location of mitigation areas, and to discuss project sequencing.

Inspections
A wetland professional shall be contracted to periodically inspect the mitigation installation described in this plan. Minor adjustments to the original design may be necessary prior to and during construction due to unusual or hidden site conditions. A City of Marysville representative and/or the consulting professional will make these decisions during construction.

6.6 PLANTING NOTES

Plant in the early spring or late fall and obtain all plants from a reputable nursery. Care and handling of all plant materials is extremely important to the overall success of the project. The origin of all plant materials specified in this plan shall be native plants, nursery grown in the Puget Sound region of Washington. Some limited species substitution may be allowed, only with the agreement of the landscape designer, wetland biologist, and/or City staff.

Pre-Planting Meeting
Prior to control of invasive species or installation of mitigation plantings, a site meeting between the contracted landscaper and the consulting wetland professional shall occur to resolve any questions that may arise. During this meeting a discussion regarding plant spacing and locations of plant species including wetland verses buffer species shall occur between the landscape contractor and the consulting wetland professional.

Handling
Plants shall be handled so as to avoid all damage, including breaking, bruising, root damage, sunburn, drying, freezing or other injury. Plants must be covered during transport. Plants shall not be bound with wire or rope in a manner that could damage branches. Protect plant roots with shade and wet soil in the time period between delivery and installation. Do not lift container stock by trunks, stems, or tops. Do not remove from containers until ready to plant. Water all plants as necessary to keep moisture levels appropriate to the species horticultural requirements. Plants shall

not be allowed to dry out. All plants shall be watered thoroughly immediately upon installation. Soak all containerized plants thoroughly prior to installation. Bare root plants are subject to the following special requirements and shall not be used unless planted between November 1 and March 1, and only with the permission of the landscape designer, wetland professional, and City staff. Bare root plants must have enough fibrous root to ensure plant survival. Roots must be covered at all times with mud and/or wet straw, moss, or other suitable packing material until time of installation. Plants whose roots have dried out from exposure will not be accepted at installation inspection.

Storage
Plants stored by the Permittee for longer than one month prior to planting shall be planted in nursery rows and treated in a manner suitable to those species' horticultural requirements. Plants must be re-inspected by the wetland biologist and/or landscape designer prior to installation.

Damaged plants
Damaged, dried out, or otherwise mishandled plants will be rejected at installation inspection. All rejected plants shall be immediately removed from the site.

Plant Names
Plant names shall comply with those generally accepted in the native plant nursery trade. Any question regarding plant species or variety shall be referred to the landscape designer, wetland professional, or City staff. All plant materials shall be true to species and variety and legibly tagged.

Quality and condition
Plants shall be normal in pattern of growth, healthy, well-branched, vigorous, with well-developed root systems, and free of pests and diseases. Damaged, diseased, pest-infested, scraped, bruised, dried out, burned, broken, or defective plants will be rejected. Plants with pruning wounds over 1" in diameter will be rejected.

Roots
All plants shall be balled and burlapped or containerized, unless explicitly authorized by the landscape designer and/or wetland professional. Rootbound plants or B&B plants with damaged, cracked, or loose rootballs (major damage) will be rejected. Immediately before installation, plants with minor root damage (some broken and / or twisted roots) must be root-pruned. Matted or circling roots of containerized plantings must be pruned or straightened, and the sides of the root ball must be roughened from top to bottom to a depth of approximately half an inch in two to four places. Bare root plantings of woody material are allowed only with permission from the landscape designer, wetland professional and/or City staff.

Sizes
Plant sizes shall be the size indicated in the plant schedule in approved plans. Larger stock may be acceptable provided that it has not been cut back to the size specified, and that the root ball is proportionate to the size of the plant. Smaller stock may be acceptable, and preferable under some circumstances, based on site-specific conditions. Measurements, caliper, branching, and balling

and burlapping shall conform to the American Standard of Nursery Stock by the American Association of Nurserymen (latest edition).

Form
Evergreen trees shall have single trunks and symmetrical, well-developed form. Deciduous trees shall be single trunked unless specified as multi-stem in the plant schedule. Shrubs shall have multiple stems and be well-branched.

Timing of Planting
Unless otherwise determined by the consulting biologist and City staff, initial planting shall occur between October 15 and March 15. Overall, the earlier plants go into the ground during the dormant period, the more time they have to adapt to the site and extend their root systems before the water demands of spring and summer.

Weeding
Existing and exotic vegetation in the mitigation areas will be hand-weeded from around all newly installed plants at the time of installation and on a routine basis throughout the monitoring period. No chemical control of vegetation on any portion of the site is recommended.

Site conditions
The contractor shall immediately notify the landscape designer and/or wetland professional of drainage or soil conditions likely to be detrimental to the growth or survival of plants. Planting operations shall not be conducted under the following conditions: freezing weather, when the ground is frozen, excessively wet weather, excessively windy weather, or in excessive heat.

Planting Pits
Planting pits shall be circular or square with vertical sides and shall be 6" deeper and 12" larger in diameter than the root ball of the plant. Break up the sides of the pit in compacted soils. Set plants upright in pits. Burlap shall be removed from the planting pit. Backfill shall be worked back into holes such that air pockets are removed without adversely compacting down soils.

Fertilizer
Slow-release fertilizer may be used if pre-approved by the City of Marysville. Fertilizers shall be applied only at the base of plantings underneath the required covering of mulch (that does not make contact with stems of the plants). No soil amendment or fertilizers will be placed in planting holes.

Staking
Most shrubs and many trees DO NOT require any staking. If the plant can stand alone without staking in a moderate wind, do not use a stake. If the plant needs support, then strapping or webbing should be used as low as possible on the trunk to loosely brace the tree with two stakes. Do not brace the tree tightly or too high on the trunk. If the tree is unable to sway, it will further lose the ability to support itself. Do not use wire in a rubber hose for strapping as it exerts too much pressure on the bark. As soon as supporting the plant becomes unnecessary, remove the stakes. All stakes must be removed within two (2) years of installation.

Plant Location
Colored surveyors' flagging or other appropriate marking shall be attached to the installed plants to assist in locating the plants while removing the competing non-native vegetation and during the monitoring period.

Arrangement and Spacing
The plants shall be arranged in a pattern with the appropriate numbers, sizes, species, and distribution that are required in accordance with the approved plans. The actual placement of individual plants shall mimic natural, asymmetric vegetation patterns found on similar undisturbed sites in the area. Spacing of the plantings may be adjusted to maintain existing vegetation with the agreement of the landscape designer, wetland biologist, and/or City staff.

Inspection(s)
A wetland biologist shall be present on site to inspect the plants prior to planting. Minor adjustments to the original design may be required prior to and during construction.

Mulch
All landscaped areas denuded of vegetation and soil surface surrounding all planting pit areas shall receive no less than 2 to 4 inches of organic compost or certified weed free straw after planting. A layer of woodchips will be placed around the base of each plant in a 2-foot radius and at a depth of 2 to 4 inches. Mulch and woodchips shall not be allowed to contact plant stems in order to avoid plant decay and rot.

7.0 FUNCTIONS AND VALUES ASSESSMENT

The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretation. This assessment pertains specifically to the wetlands and buffer on site but is characteristic of similar wetland systems found throughout western Washington.

7.1 BUFFER FUNCTIONS AND VALUES ASSESSMENT – EXISTING CONDITIONS

The on-site wetland buffer consists of native forested areas and maintained yard surrounding the existing mobile home. The area of native forest provides high quality wildlife habitat for a variety of species. This habitat area provides significant resources for wildlife including perching and nesting habitat for birds, foraging resources, year-round water, thermal and hiding cover, and large woody debris. The areas of buffer that are regularly maintained and consisting of invasive or non-native plants, do not provide effective cover for wildlife for safety, breeding, or escape. The lack of vegetative diversity and native species in this area also limits the food sources available. This area of buffer provides a low level of buffer functions.

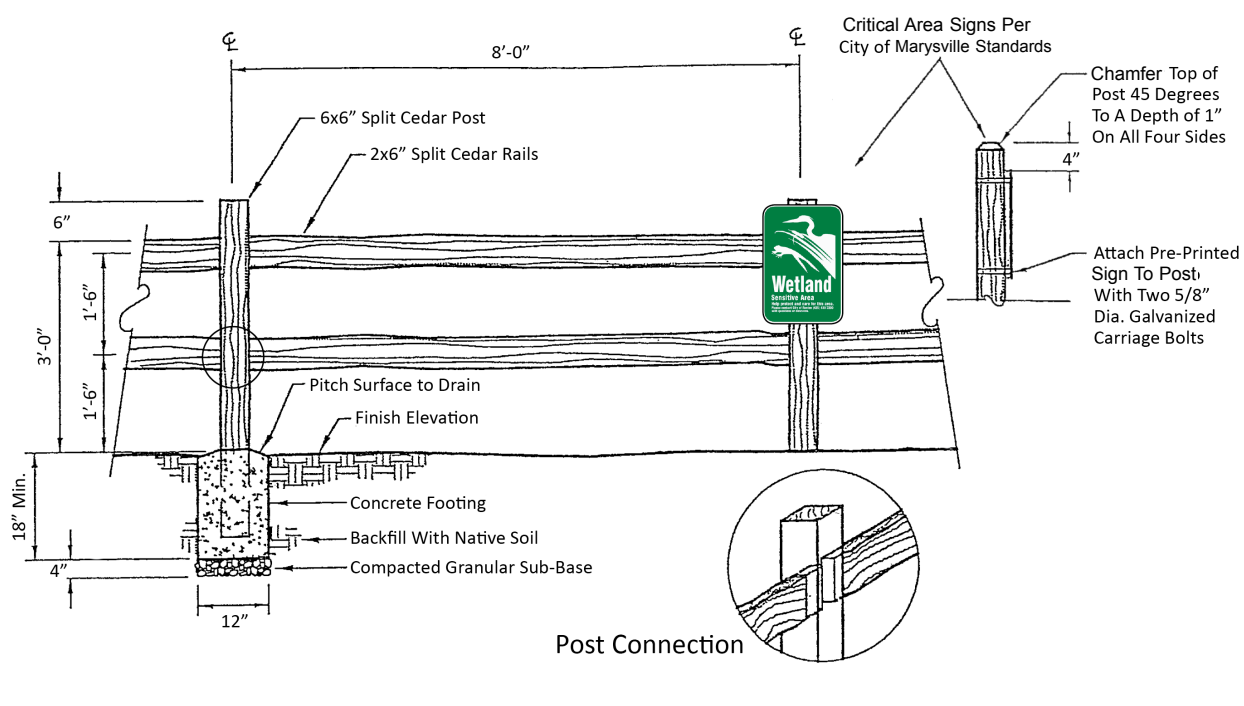
7.2 POST CONSTRUCTION BUFFER FUNCTIONS AND VALUES

After the proposed buffer averaging and buffer restoration, the on-site buffer will provide increased functions and values by replacing invasive species and maintained areas with a diverse community

of native plants. The amount of on-site buffer will also increase and will be fenced and protected in perpetuity. Overall, the proposed project will provide increased protections to the on-site wetland.

8.0 FENCING AND SIGNAGE

Pursuant to MMC 22E.010.370, split rail fencing and signs designating the presence of a critical area will be constructed along the perimeter of the buffer. Signs will be placed every 100-feet along the fence. A detail is provided below.



SPLIT-RAIL FENCE WITH CRITICAL AREA SIGNS

9.0 PERFORMANCE AND MAINTENANCE BONDING

Performance and/or maintenance bonds, or other assurance device, shall be provided to the City of Marysville, in an amount to be determined by the City. The following is an estimate of the costs to install the mitigation measures. This does not represent a bid to install.

One-gallon plants	687 @ $20/plant, installed	$13,740.00
Split rail fencing and signage	$10/foot, $30/sign	$7,360.00
Monitoring	$2,500/year	$12,500.00
Maintenance	$45/hour	$3,600.00
Mulch	$3.25/SY	$2,336.00
Total Estimated Cost		$39,536.00

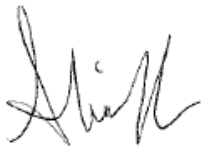
10.0 USE OF THIS REPORT

This Critical Area Study and Buffer Mitigation Plan is supplied to Keystone Land, LLC, as a means of determining on-site wetland conditions and mitigating for critical area buffer impacts. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report, and any implied representation or warranty is disclaimed.

Wetland Resources, Inc.



Alia Richardson, PWS
Senior Ecologist & Senior Wildlife Biologist

11.0 REFERENCES

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APPENDIX A

WETLAND DETERMINATION DATA FORMS

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

Project/Site: 23338 - Wiliams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Land LLC State: WA Sampling Point: S1

Investigator(s): JL Section, Township, Range: S35, T30N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): 5-10%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

IN WLA

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	50	Y	FAC
2.			
3.			
4.			
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Rubus spectabilis	30	Y	FAC
2. Corylus cornuta	30	Y	FACU
3. Cornus sericea	15	Y	FACW
4.			
5.			
	75	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Tolmeia menziesii	40	Y	FAC
2. Dryopteris expansa	30	Y	FACW
3. Lysichiton americanus	20	Y	OBL
4. Athyrium filix-femina	10	N	FAC
5. Equisetum telmateia	TR	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = 0
FACW species ____	x 2 = 0
FAC species ____	x 3 = 0
FACU species ____	x 4 = 0
UPL species ____	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/1	100					Silt Loam	

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

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

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

Indicators for Problematic Hydric 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 ☐

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 ☑ Depth (inches): _____

Water Table Present? Yes ☑ No ☐ Depth (inches): 3"

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): surface

Wetland Hydrology Present? Yes ☑ No ☐

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: 23338 - Williams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Land LLC State: WA Sampling Point: S2

Investigator(s): JL Section, Township, Range: S2, T29N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): <5%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐ No ☑	
Wetland Hydrology Present?	Yes ☐ No ☑	

Remarks:

Out of WLA

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	50	Y	FAC
2. Acer macrophyllum	15	N	FACU
3. Thuja plicata	7	N	FAC
4.			
	72	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Rubus spectabilis	35	Y	FAC
2. Rubus armeniacus	15	Y	FAC
3.			
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Rubus ursinus	10	Y	FACU
2. Polystichum munitum	5	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 = 0
FACW species	x 2 = 0
FAC species	x 3 = 0
FACU species	x 4 = 0
UPL species	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					Loam	Dry
5-14	10YR 3/3	98	5YR 4/6	2	C	M	Loam	

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

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

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

Indicators for Problematic Hydric 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 ☑

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 ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

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: 23338 - Williams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Landing LLC State: WA Sampling Point: S3

Investigator(s): JL Section, Township, Range: S2, T29N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): <5%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐ Hydric Soil Present? Yes ☑ No ☐ Wetland Hydrology Present? Yes ☑ No ☐	**Is the Sampled Area within a Wetland?** Yes ☑ No ☐

Remarks:

In WLB

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus rubra	35	Y	FAC
2. Thuja plicata	20	Y	FAC
3.			
4.			
	55	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Rubus spectabilis	35	Y	FAC
2. Rubus armeniacus	10	N	FAC
3. Polygonum cuspidatum	5	N	FACU
4. Acer circinatum	5	N	FAC
5.			
	55	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Phalaris arundinacea	50	Y	FACW
2. Athyrium filix-femina	10	N	FAC
3. Polystichum munitum	5	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 35

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (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 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	100	10YR 4/1				Silt Loam	Moist
6-14	10YR 5/2	90	10YR 3/6	10	C	M	Silt Clay Loam	Moist

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

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

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

Indicators for Problematic Hydric 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 ☐

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 ☑ Depth (inches): _____

Water Table Present? Yes ☑ No ☐ Depth (inches): 3"

Saturation Present? (includes capillary fringe) Yes ☑ No ☐ Depth (inches): surface

Wetland Hydrology Present? Yes ☑ No ☐

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: 23338 - Williams Pointe City/County: City of Marysville Sampling Date: 12/13/23

Applicant/Owner: Keystone Landing LLC State: WA Sampling Point: S4

Investigator(s): JL Section, Township, Range: S2, T29N, R5E W.M.

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): None Slope (%): <5%

Subregion (LRR): LRR-A Lat: 48.0362683 Long: -122.1330440 Datum: NAD83

Soil Map Unit Name: Tokul gravelly medial loam NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☑ No ☐

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐ Hydric Soil Present? Yes ☐ No ☑ Wetland Hydrology Present? Yes ☐ No ☑	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑

Remarks:

OUT of WLB

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5m^2)	Absolute % Cover	Dominant Species?	Indicator Status
1. Thuja plicata	60	Y	FAC
2. Alnus rubra	20	Y	FAC
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3m^2)			
1. Acer circinatum	10	Y	FAC
2. Rubus spectabilis	5	Y	FAC
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size: 1m^2)			
1. Rubus ursinus	60	Y	FACU
2. Polystichum munitum	40	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 1m^2)			
1.			
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: 6 (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 = 0
FACW species _____	x 2 = 0
FAC species _____	x 3 = 0
FACU species _____	x 4 = 0
UPL species _____	x 5 = 0
Column Totals: 0 (A)	0 (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks:

SOIL

Sampling Point: S4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/3	100					Loam	Dry

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

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

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

Indicators for Problematic Hydric 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 ☑

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 ☑ Depth (inches): _____

Water Table Present? Yes ☐ No ☑ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☑ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☑

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

Remarks:

APPENDIX B

WETLAND RATING FORMS AND FIGURES

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ✔ Y ____N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY __II__ (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27
__✔__**Category II** – Total score = 20 - 22
_____**Category III** – Total score = 16 - 19
_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Landscape Potential	[H]	M	L	[H]	M	L	H	M	[L]	
Value	[H]	M	L	[H]	M	L	[H]	M	L	**TOTAL**
Score Based on Ratings	**8**			**8**			**6**			**22**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	[ ]

Wetland name or number A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number A

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number A

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

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

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?	
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0	**1**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0	**1**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0	**0**
Total for D 2 Add the points in the boxes above	**3**

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

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

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

Wetland name or number A

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- ☐ Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- ☐ Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- ☑ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

0

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- ☑ The wetland is a "headwater" wetland points = 3
- ☐ Wetland is flat but has small depressions on the surface that trap water points = 1
- ☐ Marks of ponding less than 0.5 ft (6 in) points = 0

3

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- ☑ The area of the basin is less than 10 times the area of the unit points = 5
- ☐ The area of the basin is 10 to 100 times the area of the unit points = 3
- ☐ The area of the basin is more than 100 times the area of the unit points = 0
- ☐ Entire wetland is in the Flats class points = 5

5

Total for D 4 — Add the points in the boxes above — **8**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 No = 0 — **1**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 No = 0 — **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? Yes = 1 No = 0 — **1**

Total for D 5 — Add the points in the boxes above — **3**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- ☑ • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- ☐ • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- ☐ • Flooding from groundwater is an issue in the sub-basin. points = 1
- ☐ • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- ☐ • There are no problems with flooding downstream of the wetland. points = 0

2

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0 — **0**

Total for D 6 — Add the points in the boxes above — **2**

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

Wetland name or number A

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____Aquatic bed	4 structures or more: points = 4	**1**
____Emergent	3 structures: points = 2	
____Scrub-shrub (areas where shrubs have > 30% cover)	[2 structures: points = 1]	
✔ Forested (areas where trees have > 30% cover)	1 structure: points = 0	

If the unit has a Forested class, check if:

✔ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated	4 or more types present: points = 3	**1**
✔ Seasonally flooded or inundated	3 types present: points = 2	
____Occasionally flooded or inundated	[2 types present: points = 1]	
✔ Saturated only	1 type present: points = 0	
____Permanently flowing stream or river in, or adjacent to, the wetland		
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland		
____**Lake Fringe wetland**	**2 points**	
____**Freshwater tidal wetland**	**2 points**	

H 1.3. Richness of plant species

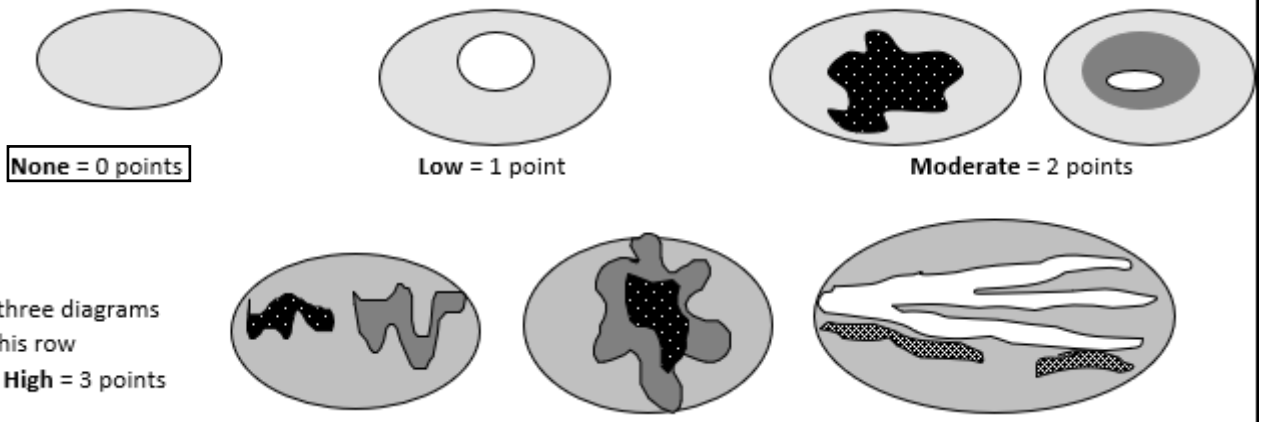
Count the number of plant species in the wetland that cover at least 10 ft^2.

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

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

H 1.4. Interspersion of habitats

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



[**None** = 0 points]

Low = 1 point

Moderate = 2 points

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

0

Wetland name or number A

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✔ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✔ Standing snags (dbh > 4 in.) within the wetland ✔ Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ___ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ___ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ✔ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**4**
Total for H 1 — Add the points in the boxes above	**8**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 5 + [(% moderate and low intensity land uses)/2] 2 = 7 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon — points = 3 ☐ 20-33% of 1 km Polygon — points = 2 ☐ 10-19% of 1 km Polygon — points = 1 ✔ < 10% of 1 km Polygon — points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 26 + [(% moderate and low intensity land uses)/2] 12 = 37 % ☐ Total habitat > 50% of Polygon — points = 3 ☐ Total habitat 10-50% and in 1-3 patches — points = 2 ✔ Total habitat 10-50% and > 3 patches — points = 1 ☐ Total habitat < 10% of 1 km Polygon — points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ✔ > 50% of 1 km Polygon is high intensity land use — points = (- 2) ☐ ≤ 50% of 1 km Polygon is high intensity — points = 0	**-2**
Total for H 2 — Add the points in the boxes above	**-1**

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

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

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

Wetland name or number A

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☑ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☑ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number A

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☑ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

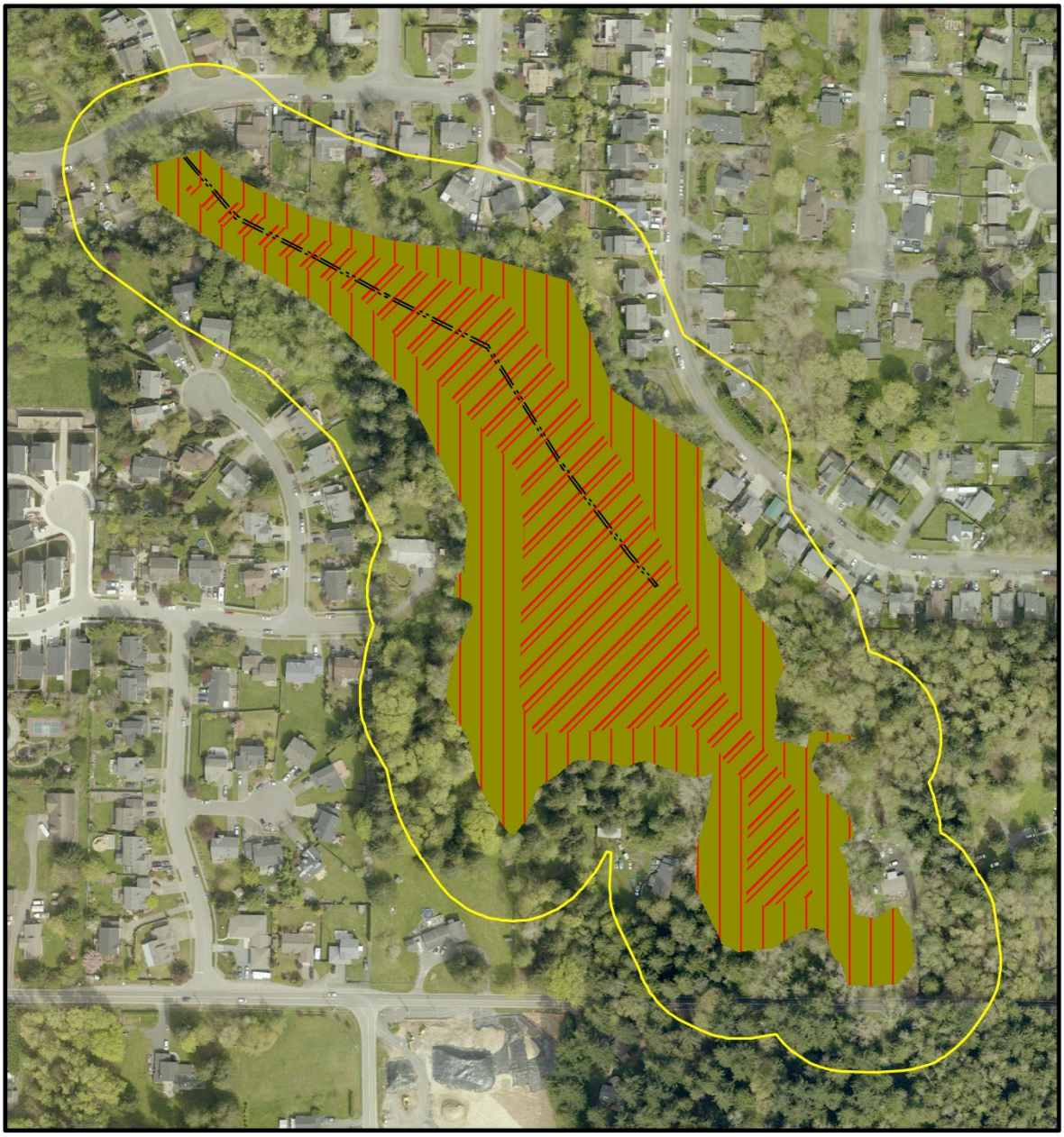
Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number A

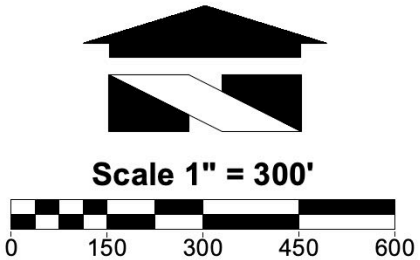
SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* ☐ The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

WETLAND RATING FIGURE 1- WETLAND A



LEGEND

- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY
- INTERMITTENT STREAM

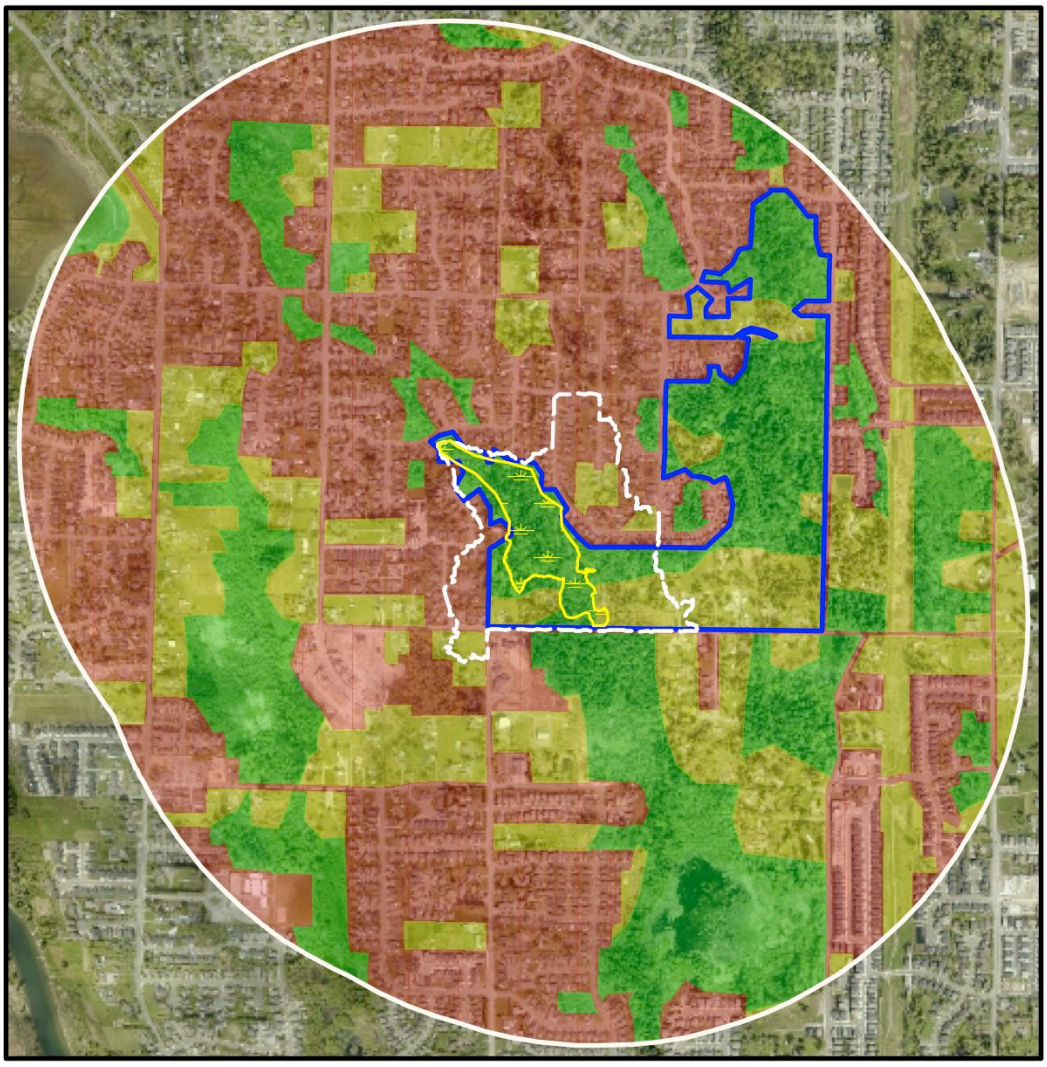


Wetland Resources, Inc.
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Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland A

Figure A-1
WRI Job # [illegible]
Rated b[illegible]

WETLAND RATING FIGURE 2- WETLAND A



CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 4.3:1

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

Scale 1" = 1,500'

0 1,500 3,000

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WETLAND RATING
Wetland A

Figure A-2
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 3- WETLAND A



LEGEND

- WETLAND
- AQUATIC RESOURCES ON THE 303(d) LIST
- AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 1,000'

0 1,000 2,000

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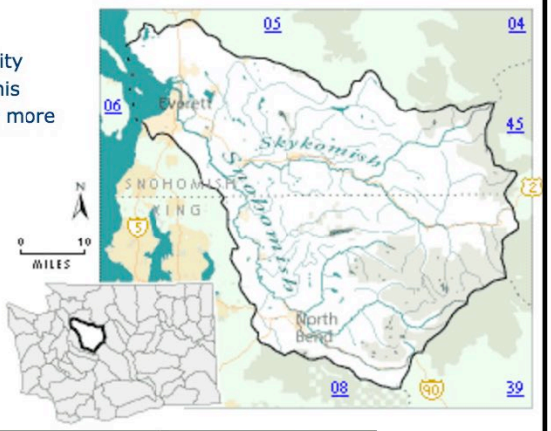
WETLAND RATING
Wetland A

Figure A-3
WRI Job # [illegible]
Rated b[illegible]

WETLAND RATING FIGURE 4- WETLAND A

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland A

Figure A-4
WRI Job #
Rated b

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

✔ **Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
										Circle the appropriate ratings
Site Potential	H	[M]	L	H	M	[L]	H	M	[L]	
Landscape Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Value	[H]	M	L	H	M	[L]	H	[M]	L	**TOTAL**
Score Based on Ratings	**7**			**4**			**5**			**16**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	[ ]

Wetland name or number B

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number B

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number B

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

- [x] Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- [ ] Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- [ ] Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- [ ] Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

3

D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 [No = 0]

0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

- [x] Wetland has persistent, ungrazed plants > 95% of area points = 5
- [ ] Wetland has persistent, ungrazed plants > ½ of area points = 3
- [ ] Wetland has persistent, ungrazed plants ≥ $^1/_{10}$ of area points = 1
- [ ] Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0

5

D 1.4. Characteristics of seasonal ponding or inundation:

This is the area that is ponded for at least 2 months. See description in manual.

- [ ] Area seasonally ponded is > ½ total area of wetland points = 4
- [ ] Area seasonally ponded is ≥ ¼ total area of wetland points = 2
- [x] Area seasonally ponded is < ¼ total area of wetland points = 0

0

Total for D 1 — Add the points in the boxes above: **8**

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland unit receive stormwater discharges?	Yes = 1 [No = 0]	**0**
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants?	[Yes = 1] No = 0	**1**
D 2.3. Are there septic systems within 250 ft of the wetland?	[Yes = 1] No = 0	**1**
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____	Yes = 1 [No = 0]	**0**
Total for D 2	Add the points in the boxes above	**2**

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

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list?	Yes = 1 [No = 0]	**0**
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list?	Yes = 1 [No = 0]	**0**
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.)	[Yes = 2] No = 0	**2**
Total for D 3	Add the points in the boxes above	**2**

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

Wetland name or number B

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- [x] Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- [ ] Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- [ ] Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- [ ] Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

4

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- [ ] Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- [ ] Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- [ ] Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- [ ] The wetland is a "headwater" wetland points = 3
- [ ] Wetland is flat but has small depressions on the surface that trap water points = 1
- [x] Marks of ponding less than 0.5 ft (6 in) points = 0

0

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- [ ] The area of the basin is less than 10 times the area of the unit points = 5
- [ ] The area of the basin is 10 to 100 times the area of the unit points = 3
- [x] The area of the basin is more than 100 times the area of the unit points = 0
- [ ] Entire wetland is in the Flats class points = 5

0

Total for D 4 — Add the points in the boxes above: **4**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 [No = 0] — **0**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? [Yes = 1] No = 0 — **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? [Yes = 1] No = 0 — **1**

Total for D 5 — Add the points in the boxes above: **2**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- [ ] • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- [ ] • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- [ ] • Flooding from groundwater is an issue in the sub-basin. points = 1
- [x] • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- [ ] • There are no problems with flooding downstream of the wetland. points = 0

0

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [No = 0] — **0**

Total for D 6 — Add the points in the boxes above: **0**

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

Wetland name or number B

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____Aquatic bed — 4 structures or more: points = 4
____Emergent — 3 structures: points = 2
____Scrub-shrub (areas where shrubs have > 30% cover) — [2 structures: points = 1]
✔ Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

✔ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

1

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated — 4 or more types present: points = 3
____Seasonally flooded or inundated — 3 types present: points = 2
____Occasionally flooded or inundated — 2 types present: points = 1
✔ Saturated only — [1 type present: points = 0]
____Permanently flowing stream or river in, or adjacent to, the wetland
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland
____**Lake Fringe wetland** — **2 points**
____**Freshwater tidal wetland** — **2 points**

0

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

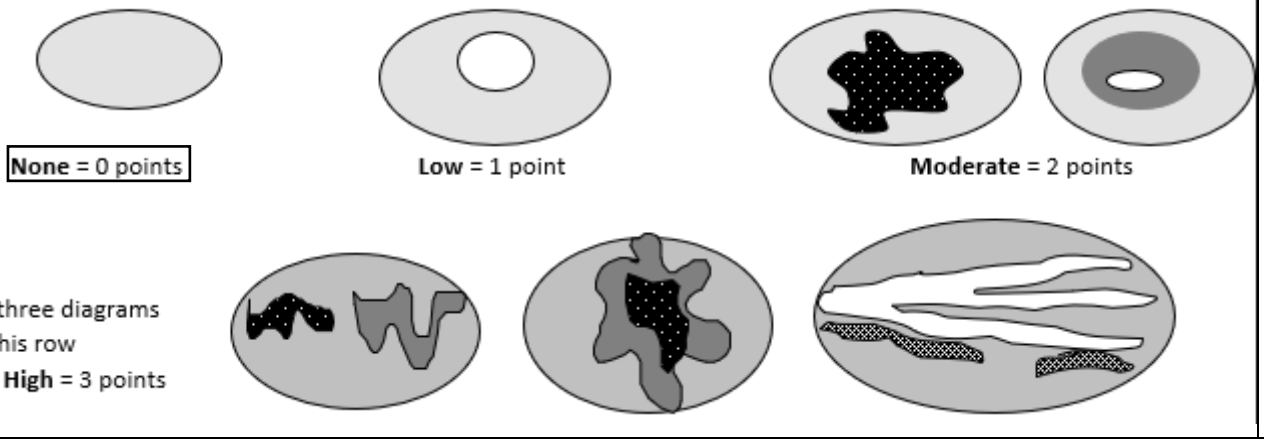
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

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

1

H 1.4. Interspersion of habitats

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



[**None** = 0 points]

Low = 1 point

Moderate = 2 points

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

0

Wetland name or number B

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ____Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ____Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ____Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**0**
Total for H 1 Add the points in the boxes above	**2**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 9 **+** [(% moderate and low intensity land uses)/2] 2 **=** 11 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☑ 10-19% of 1 km Polygon points = 1 ☐ < 10% of 1 km Polygon points = 0	**1**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 31 **+** [(% moderate and low intensity land uses)/2] 13 **=** 43 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ☑ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ☑ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**2**

Rating of Landscape Potential If score is**: __4-6 = H** __✔**1-3 = M** ___**< 1 = L** *Record the rating on the first page*

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

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

Wetland name or number B

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☑ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number B

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☐ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number B

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number B

SC 4.0. Forested Wetlands

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm).

Yes = **Category I** | No = **Not a forested wetland for this section**

Cat. I

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes – Go to **SC 5.1** | No = **Not a wetland in a coastal lagoon**

Cat. I

SC 5.1. Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland.

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

Yes = **Category I** No = **Category II**

Cat. II

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW.

Yes – Go to **SC 6.1** | No = **Not an interdunal wetland for rating**

Cat I

Cat. II

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3**

Cat. III

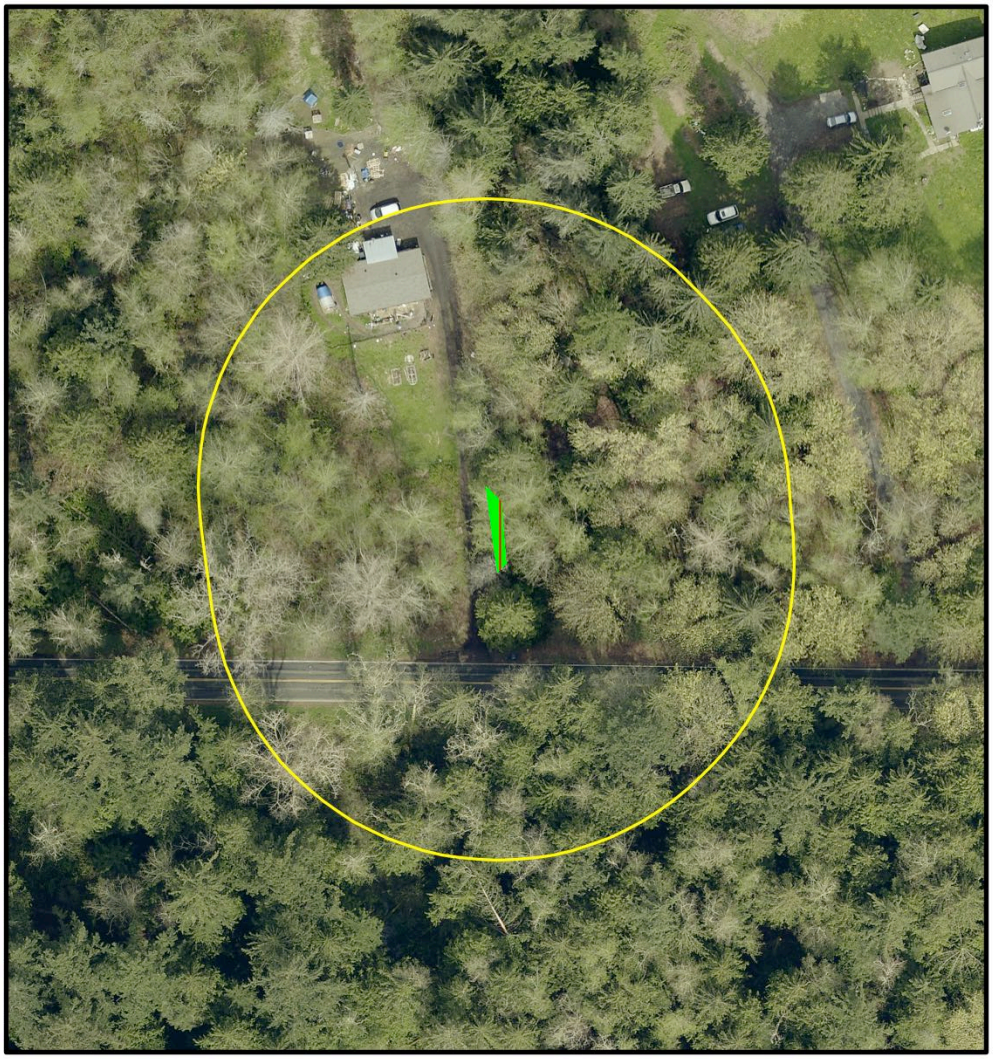
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**

Cat. IV

Category of wetland based on Special Characteristics

If you answered No for all types, enter "Not Applicable" on Summary Form

WETLAND RATING FIGURE 1- WETLAND B



Scale 1" = 100'

0 50 100 150 200

LEGEND

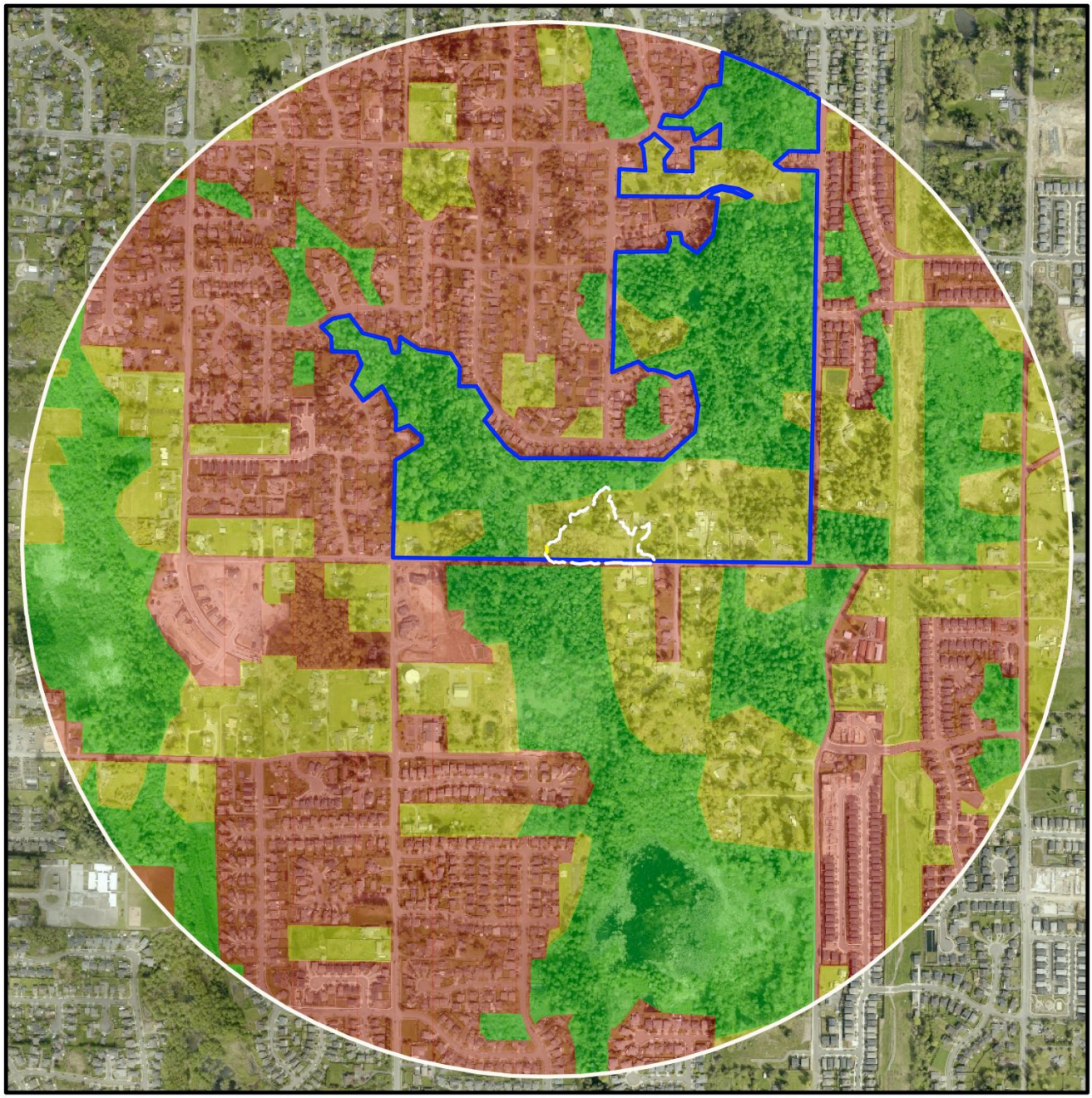
- SCRUB-SHRUB
- SATURATED ONLY
- 150' FROM WL BOUNDARY

Wetland Resources, Inc.
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9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland B

Figure B-1
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 2- WETLAND B



SCALE

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS XX:1

Scale 1" = 1,000'

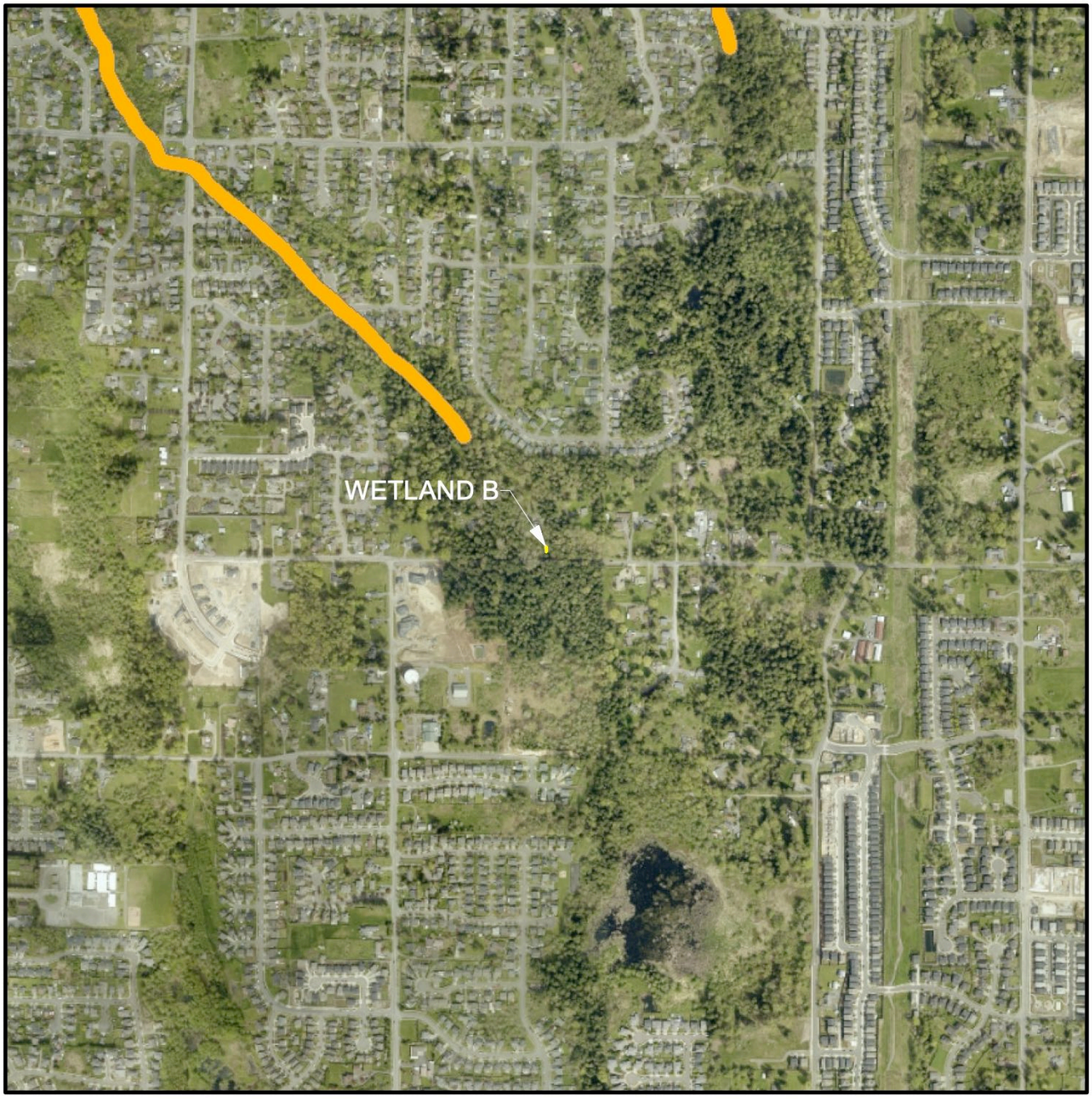
0 1,000 2,000

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WETLAND RATING
Wetland B

Figure B-2
WRI Job # [illegible]
Rated b 490

WETLAND RATING FIGURE 3- WETLAND B



LEGEND

- WETLAND
- AQUATIC RESOURCES ON THE 303(d) LIST
- AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 1,000'

0 1,000 2,000

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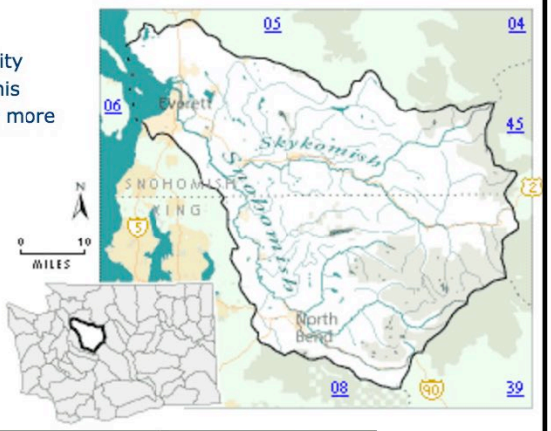
WETLAND RATING
Wetland B

Figure B-3
WRI Job #
Rated b

WETLAND RATING FIGURE 4- WETLAND B

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland B

Figure B-4
WRI Job #
Rated b

Wetland name or number C

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland C Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY **II** (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

✔ **Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	[M]	L	[H]	M	L	
Landscape Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Value	[H]	M	L	H	[M]	L	[H]	M	L	**TOTAL**
Score Based on Ratings	**7**			**6**			**8**			**21**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	[ ]

Wetland name or number C

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number C

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number C

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?	
D 1.1. Characteristics of surface water outflows from the wetland: ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3 ☐ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2 ☑ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1 ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1	**1**
D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0	**0**
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): ☐ Wetland has persistent, ungrazed plants > 95% of area points = 5 ☑ Wetland has persistent, ungrazed plants > ½ of area points = 3 ☐ Wetland has persistent, ungrazed plants ≥ 1/10 of area points = 1 ☐ Wetland has persistent, ungrazed plants < 1/10 of area points = 0	**3**
D 1.4. Characteristics of seasonal ponding or inundation: *This is the area that is ponded for at least 2 months. See description in manual.* ☑ Area seasonally ponded is > ½ total area of wetland points = 4 ☐ Area seasonally ponded is ≥ ¼ total area of wetland points = 2 ☐ Area seasonally ponded is < ¼ total area of wetland points = 0	**4**
Total for D 1 Add the points in the boxes above	**8**

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

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

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

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

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

Wetland name or number C

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- ☐ Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- ☐ Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- ☑ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

0

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- ☑ The wetland is a "headwater" wetland points = 3
- ☐ Wetland is flat but has small depressions on the surface that trap water points = 1
- ☐ Marks of ponding less than 0.5 ft (6 in) points = 0

3

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- ☐ The area of the basin is less than 10 times the area of the unit points = 5
- ☑ The area of the basin is 10 to 100 times the area of the unit points = 3
- ☐ The area of the basin is more than 100 times the area of the unit points = 0
- ☐ Entire wetland is in the Flats class points = 5

3

Total for D 4 — Add the points in the boxes above — **6**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 [No = 0] — **0**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? Yes = 1 [No = 0] — **0**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? [Yes = 1] No = 0 — **1**

Total for D 5 — Add the points in the boxes above — **1**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- ☐ • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- ☑ • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- ☐ • Flooding from groundwater is an issue in the sub-basin. points = 1
- ☐ • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- ☐ • There are no problems with flooding downstream of the wetland. points = 0

1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [No = 0] — **0**

Total for D 6 — Add the points in the boxes above — **1**

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

Wetland name or number C

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

✔	Aquatic bed	4 structures or more: points = 4
✔	Emergent	3 structures: points = 2
✔	Scrub-shrub (areas where shrubs have > 30% cover)	2 structures: points = 1
✔	Forested (areas where trees have > 30% cover)	1 structure: points = 0

If the unit has a Forested class, check if:

✔ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

4

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

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

2

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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

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

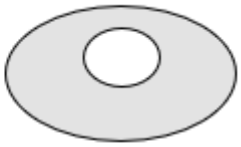
2

H 1.4. Interspersion of habitats

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



None = 0 points

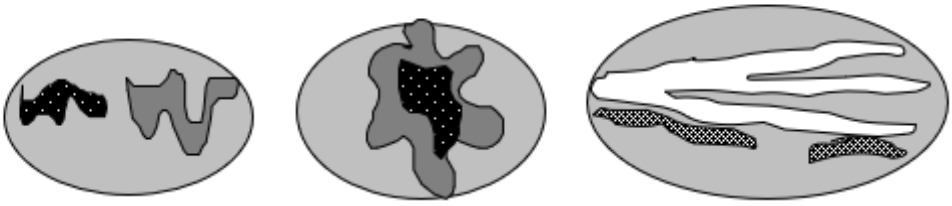


Low = 1 point



Moderate = 2 points

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



3

Wetland name or number C

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✔ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✔ Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ✔ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ✔ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**4**
Total for H 1 Add the points in the boxes above	**15**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 5 + [(% moderate and low intensity land uses)/2] 3 = 8 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ☐ 10-19% of 1 km Polygon points = 1 ✔ < 10% of 1 km Polygon points = 0	**0**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 24 + [(% moderate and low intensity land uses)/2] 16 = 40 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ✔ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ✔ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**1**

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

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

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

Wetland name or number C

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☑ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number C

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☑ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number C

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

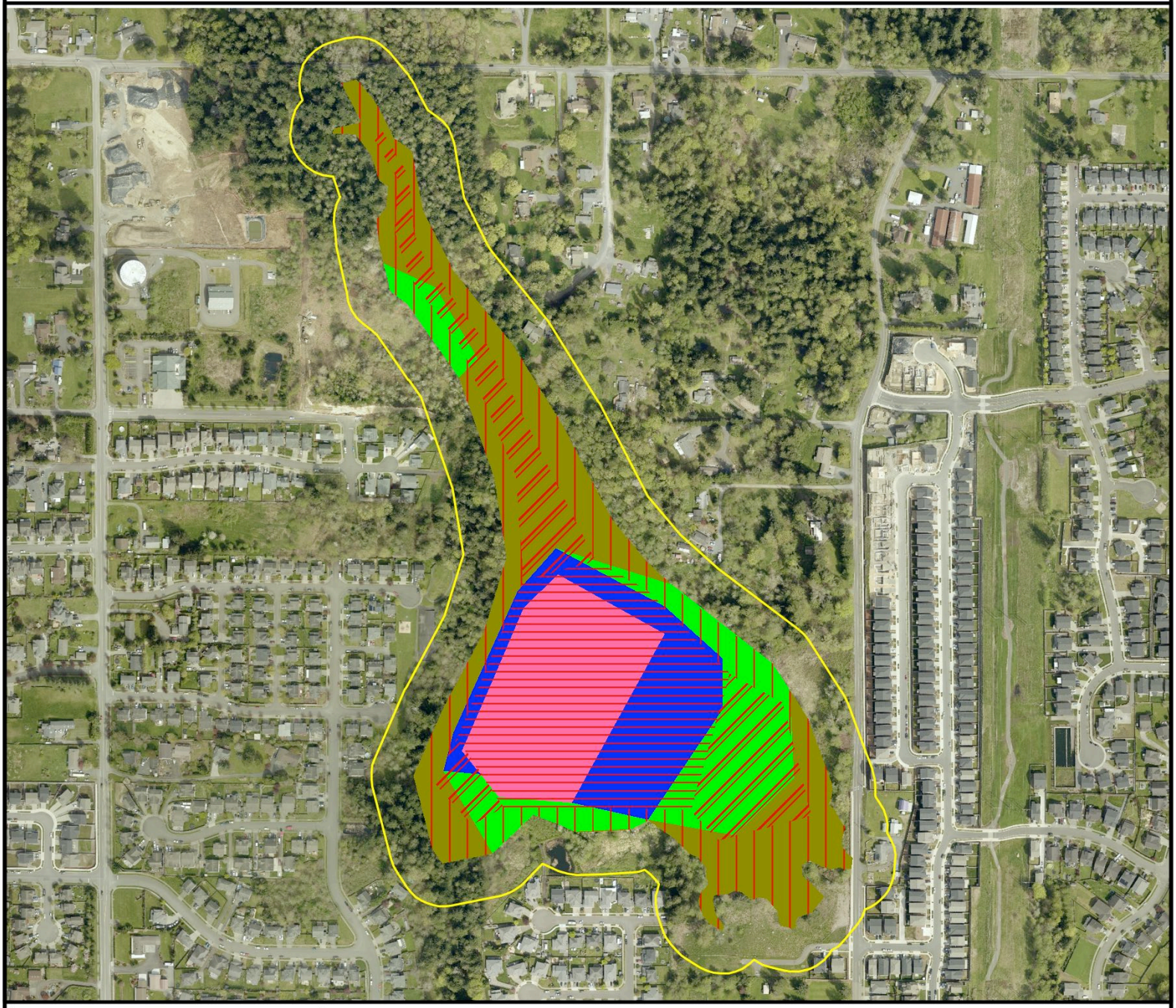
Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number C

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.*** ☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more. ☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm). Yes = **Category I** No = **Not a forested wetland for this section**	**Cat. I**
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)* ☐ The lagoon retains some of its surface water at low tide during spring tides Yes – Go to **SC 5.1** No = **Not a wetland in a coastal lagoon** SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2) Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.*** In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW. Yes – Go to **SC 6.1** No = **Not an interdunal wetland for rating** SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2** SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? Yes = **Category II** No – Go to **SC 6.3** SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? Yes = **Category III** No = **Category IV**	**Cat I** **Cat. II** **Cat. III** **Cat. IV**
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	

WETLAND RATING FIGURE 1- WETLAND C



LEGEND

- SCRUB-SHRUB
- AQUATIC BED
- EMERGENT VEGETATION
- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- PERMANENTLY FLOODED
- 150' FROM WL BOUNDARY

Scale 1" = 500'

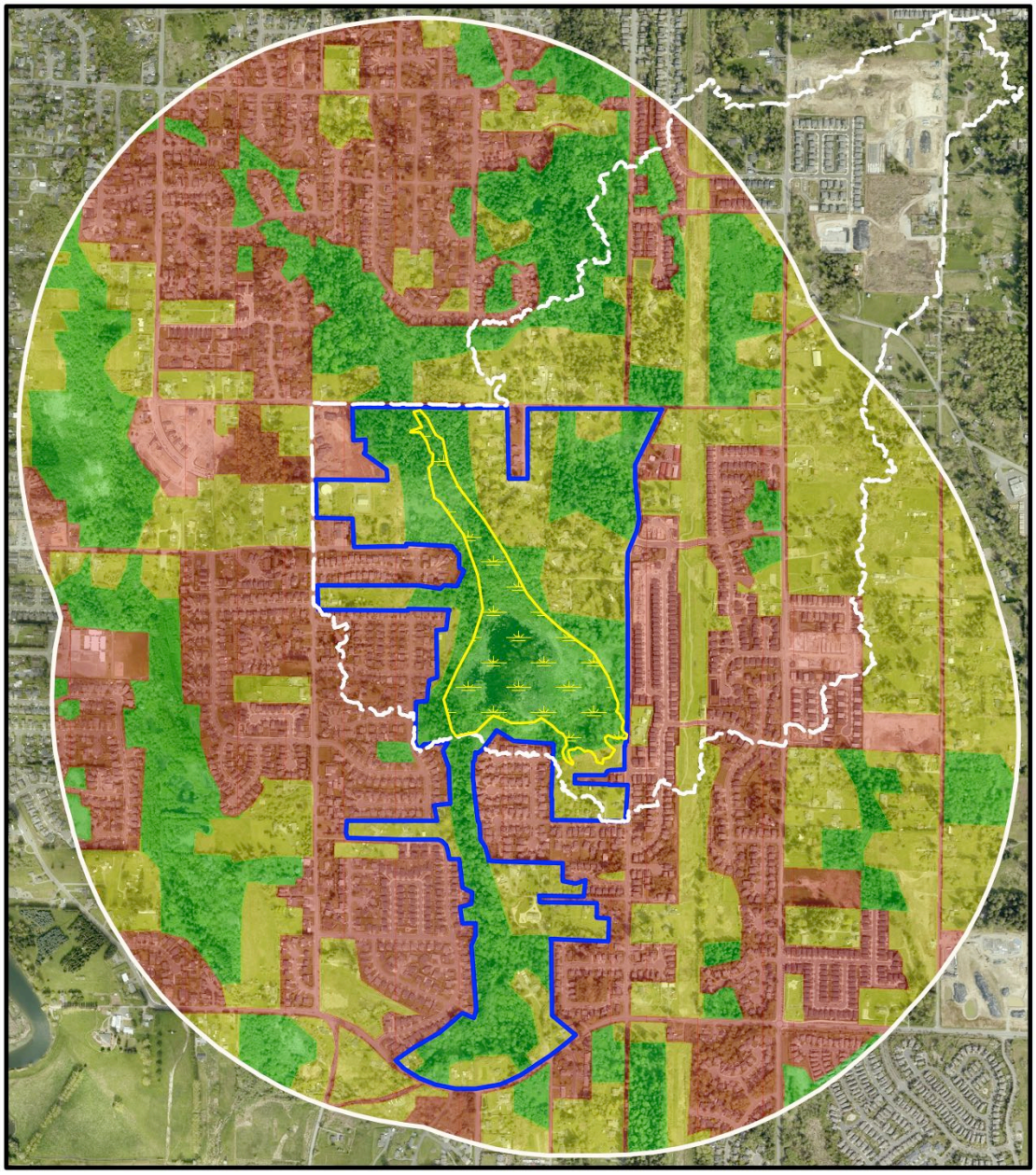
0 250 500 750 1000

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Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland C

Figure C-1
WRI Job # [illegible]
Rated b[illegible]

WETLAND RATING FIGURE 2- WETLAND C



CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 13.5:1

LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

Scale 1" = 1,500'

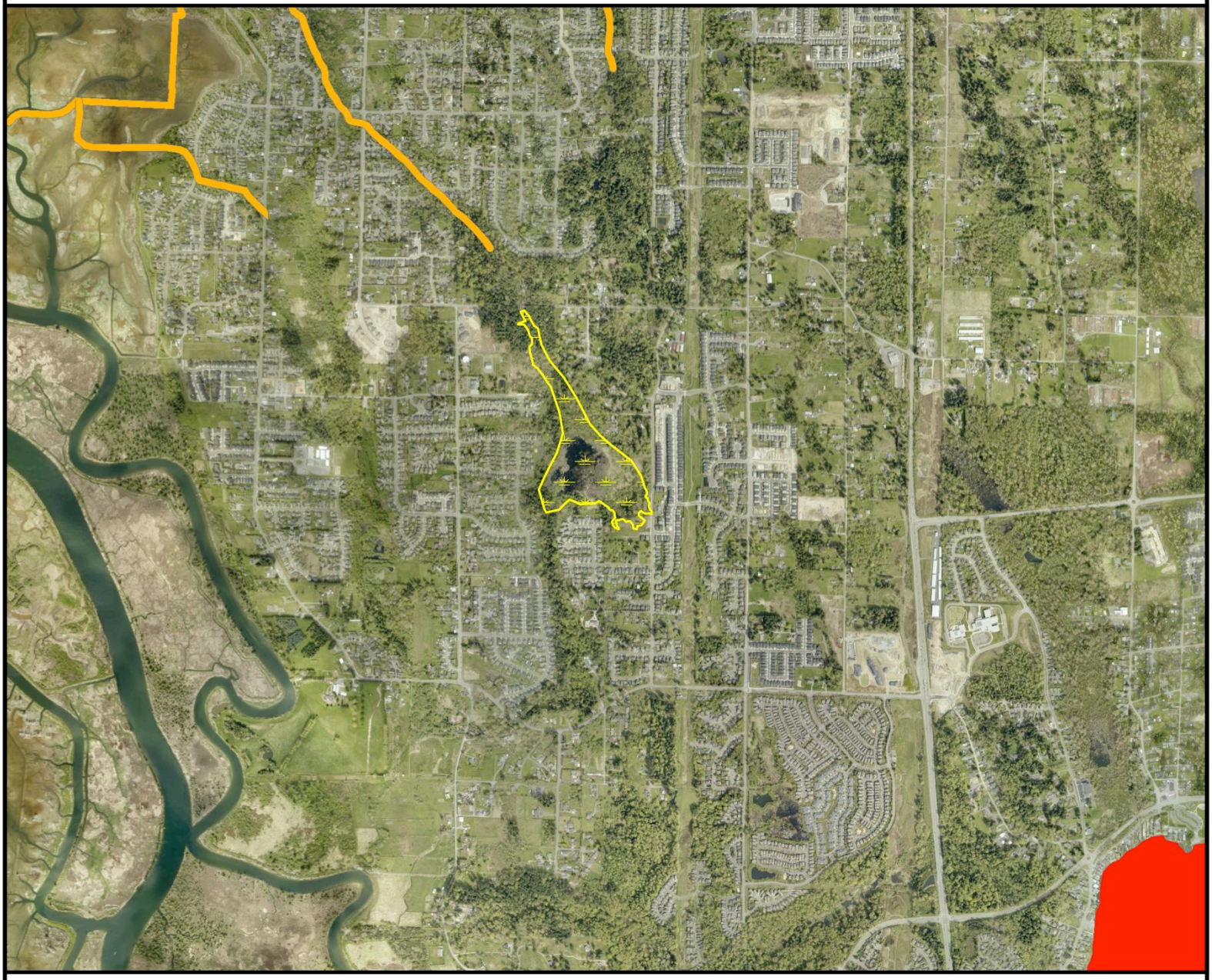
0 1,500 3,000

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WETLAND RATING
Wetland C

Figure C-2
WRI Job # [illegible]
Rated b[illegible]

WETLAND RATING FIGURE 3- WETLAND C



LEGEND

- WETLAND
- AQUATIC RESOURCES ON THE 303(d) LIST
- AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 2,000'

0 2,000 4,000

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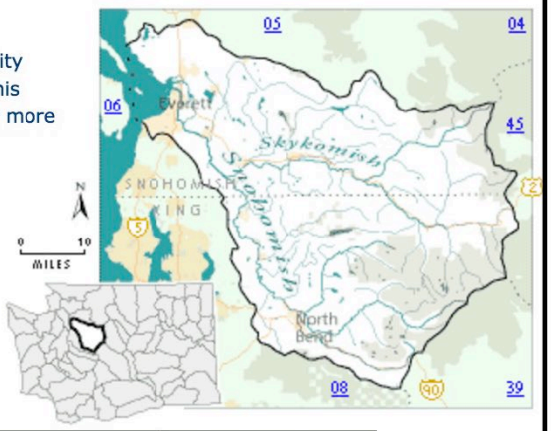
WETLAND RATING
Wetland C

Figure C-3
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 4- WETLAND C

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland C

Figure C-4
WRI Job #
Rated b

Wetland name or number D

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland D Date of site visit: 12/13/23

Rated by AR Trained by Ecology? ✔ Yes ___No Date of training 10/18

HGM Class used for rating **Depressional** Wetland has multiple HGM classes? ___Y ✔ N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map Snohomish County

OVERALL WETLAND CATEGORY III (based on functions ✔ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

_____**Category II** – Total score = 20 - 22

_____**Category III** – Total score = 16 - 19

_____**Category IV** – Total score = 9 - 15

FUNCTION	Improving Water Quality			Hydrologic			Habitat			
	Circle the appropriate ratings									
Site Potential	H	[M]	L	H	M	[L]	H	[M]	L	
Landscape Potential	H	[M]	L	H	[M]	L	H	[M]	L	
Value	[H]	M	L	H	[M]	L	H	[M]	L	**TOTAL**
Score Based on Ratings	**7**			**5**			**6**			**18**

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

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

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY
Estuarine	**I** **II**
Wetland of High Conservation Value	**I**
Bog	**I**
Mature Forest	**I**
Old Growth Forest	**I**
Coastal Lagoon	**I** **II**
Interdunal	**I** **II** **III** **IV**
None of the above	[ ]

Wetland name or number D_____

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	1
Hydroperiods	D 1.4, H 1.2	1
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	1
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	1
Map of the contributing basin	D 4.3, D 5.3	2
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and total habitat	H 2.1, H 2.2, H 2.3	2
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	3
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	4

Riverine Wetlands

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

Lake Fringe Wetlands

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

Slope Wetlands

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

Wetland name or number D

HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

   NO – go to 2 **YES** – the wetland class is **Tidal Fringe** – go to 1.1

   1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

   NO – Saltwater Tidal Fringe (Estuarine) **YES – Freshwater Tidal Fringe**
   If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe, it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat, and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

   NO – go to 3 **YES** – The wetland class is **Flats**
   If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

3. Does the entire wetland unit **meet all** of the following criteria?
   - The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size,
   - At least 30% of the open water area is deeper than 6.6 ft (2 m).

   NO – go to 4 **YES –** The wetland class is **Lake Fringe** (Lacustrine Fringe)

4. Does the entire wetland unit **meet all** of the following criteria?
   - The wetland is on a slope (slope can be very gradual),
   - The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheet flow, or in a swale without distinct banks,
   - The water leaves the wetland **without being impounded**.

   NO – go to 5 **YES –** The wetland class is **Slope**

   NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

Wetland name or number D

5. Does the entire wetland unit **meet all** of the following criteria?
   - The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
   - The overbank flooding occurs at least once every 2 years.

   NO – go to 6 **YES** – The wetland class is **Riverine**

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

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

   NO – go to 7 **YES** – The wetland class is **Depressional**

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

   NO – go to 8 **YES** – The wetland class is **Depressional**

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

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

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

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

Wetland name or number D

DEPRESSIONAL AND FLATS WETLANDS

Water Quality Functions - Indicators that the site functions to improve water quality

D 1.0. Does the site have the potential to improve water quality?

D 1.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). points = 3
- ☑ Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. points = 2
- ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 1
- ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch. points = 1

2

D 1.2. The soil 2 in. below the surface (or duff layer) is true clay or true organic *(use NRCS definitions).* Yes = 4 No = 0

0

D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes):

- ☐ Wetland has persistent, ungrazed plants > 95% of area points = 5
- ☑ Wetland has persistent, ungrazed plants > ½ of area points = 3
- ☐ Wetland has persistent, ungrazed plants ≥ $^1/_{10}$ of area points = 1
- ☐ Wetland has persistent, ungrazed plants < $^1/_{10}$ of area points = 0

3

D 1.4. Characteristics of seasonal ponding or inundation:

This is the area that is ponded for at least 2 months. See description in manual.

- ☑ Area seasonally ponded is > ½ total area of wetland points = 4
- ☐ Area seasonally ponded is ≥ ¼ total area of wetland points = 2
- ☐ Area seasonally ponded is < ¼ total area of wetland points = 0

4

Total for D 1 Add the points in the boxes above **9**

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

D 2.0. Does the landscape have the potential to support the water quality function of the site?

D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0 **0**

D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0 **0**

D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0 **1**

D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1-D 2.3? Source_____ Yes = 1 No = 0 **0**

Total for D 2 Add the points in the boxes above **1**

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

D 3.0. Is the water quality improvement provided by the site valuable to society?

D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0 **0**

D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0 **1**

D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (Answer YES if there is a TMDL in development or in effect for the basin in which the unit is found.) Yes = 2 No = 0 **2**

Total for D 3 Add the points in the boxes above **3**

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

Wetland name or number D

DEPRESSIONAL AND FLATS WETLANDS

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

D 4.0. Does the site have the potential to reduce flooding and erosion?

D 4.1. Characteristics of surface water outflows from the wetland:

- ☐ Wetland is a depression or flat depression with no surface water leaving it (no outlet) points = 4
- ☑ Wetland has an intermittently flowing stream/ditch, OR highly constricted permanently flowing outlet points = 2
- ☐ Wetland is a flat depression (question 7 on key), whose outlet is a permanently flowing ditch points = 1
- ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing points = 0

2

D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.

- ☐ Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7
- ☐ Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5
- ☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3
- ☐ The wetland is a "headwater" wetland points = 3
- ☐ Wetland is flat but has small depressions on the surface that trap water points = 1
- ☑ Marks of ponding less than 0.5 ft (6 in) points = 0

0

D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the area of the wetland unit itself.

- ☐ The area of the basin is less than 10 times the area of the unit points = 5
- ☑ The area of the basin is 10 to 100 times the area of the unit points = 3
- ☐ The area of the basin is more than 100 times the area of the unit points = 0
- ☐ Entire wetland is in the Flats class points = 5

3

Total for D 4 — Add the points in the boxes above — **5**

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

D 5.0. Does the landscape have the potential to support hydrologic functions of the site?

D 5.1. Does the wetland receive stormwater discharges? Yes = 1 [No = 0] — **0**

D 5.2. Is >10% of the area within 150 ft of the wetland in land uses that generate excess runoff? [Yes = 1] No = 0 — **1**

D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)? [Yes = 1] No = 0 — **1**

Total for D 5 — Add the points in the boxes above — **2**

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

D 6.0. Are the hydrologic functions provided by the site valuable to society?

D 6.1. Is the unit in a landscape that has flooding problems? Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.

The wetland captures surface water that would otherwise flow downgradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):

- ☐ • Flooding occurs in a sub-basin that is immediately downgradient of unit. points = 2
- ☑ • Surface flooding problems are in a sub-basin farther downgradient. points = 1
- ☐ • Flooding from groundwater is an issue in the sub-basin. points = 1
- ☐ • The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. *Explain why* _____ points = 0
- ☐ • There are no problems with flooding downstream of the wetland. points = 0

1

D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 [No = 0] — **0**

Total for D 6 — Add the points in the boxes above — **1**

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

Wetland name or number D

These questions apply to wetlands of all HGM classes.

HABITAT FUNCTIONS - Indicators that site functions to provide important habitat

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

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

____Aquatic bed
____Emergent
__✔__Scrub-shrub (areas where shrubs have > 30% cover)
__✔__Forested (areas where trees have > 30% cover)

If the unit has a Forested class, check if:

__✔__The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/groundcover) that each cover 20% within the Forested polygon

4 structures or more: points = 4
3 structures: points = 2
2 structures: points = 1
1 structure: points = 0

2

H 1.2. Hydroperiods

Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland if the unit is < 2.5 ac, or ¼ ac if the unit is at least 2.5 ac to count (see text for descriptions of hydroperiods).

____Permanently flooded or inundated
__✔__Seasonally flooded or inundated
____Occasionally flooded or inundated
__✔__Saturated only
____Permanently flowing stream or river in, or adjacent to, the wetland
____Intermittently or seasonally flowing stream in, or adjacent to, the wetland
____**Lake Fringe wetland** **2 points**
____**Freshwater tidal wetland** **2 points**

4 or more types present: points = 3
3 types present: points = 2
2 types present: points = 1
1 type present: points = 0

1

H 1.3. Richness of plant species

Count the number of plant species in the wetland that cover at least 10 ft^2.

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

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

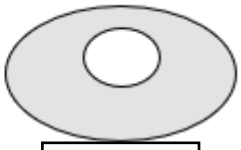
1

H 1.4. Interspersion of habitats

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



None = 0 points

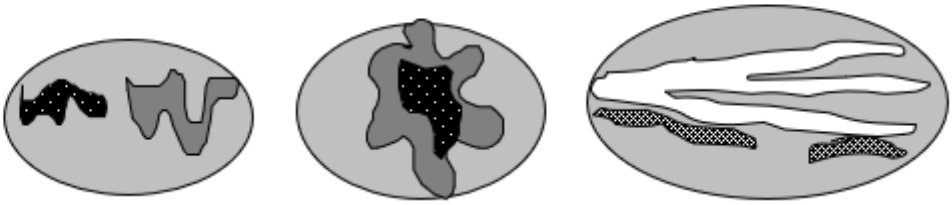


Low = 1 point



Moderate = 2 points

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



1

Wetland name or number D

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. The number of checks is the number of points. ✔ Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). ✔ Standing snags (dbh > 4 in.) within the wetland ____Undercut banks are present for at least 6.6 ft (2 m) **and/or** overhanging plants extend at least 3.3 ft (1 m) over open water or a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ____Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet weathered where wood is exposed) ____At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (structures for egg-laying by amphibians) ✔ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 above for the list of strata and H 1.5 in the manual for the list of aggressive plant species)	**3**
Total for H 1 Add the points in the boxes above	**8**

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

H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat polygons accessible from the wetland. *Calculate:* % relatively undisturbed habitat 11 + [(% moderate and low intensity land uses)/2] 3 = 14 % Total accessible habitat is: ☐ > 1/3 (33.3%) of 1 km Polygon points = 3 ☐ 20-33% of 1 km Polygon points = 2 ✔ 10-19% of 1 km Polygon points = 1 ☐ < 10% of 1 km Polygon points = 0	**1**
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 30 + [(% moderate and low intensity land uses)/2] 13 = 43 % ☐ Total habitat > 50% of Polygon points = 3 ☐ Total habitat 10-50% and in 1-3 patches points = 2 ✔ Total habitat 10-50% and > 3 patches points = 1 ☐ Total habitat < 10% of 1 km Polygon points = 0	**1**
H 2.3. Land use intensity in 1 km Polygon: ☐ > 50% of 1 km Polygon is high intensity land use points = (- 2) ✔ ≤ 50% of 1 km Polygon is high intensity points = 0	**0**
Total for H 2 Add the points in the boxes above	**2**

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

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

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

Wetland name or number D

WDFW Priority Habitats

See complete descriptions of Priority Habitats listed by WDFW, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008 (current year, as revised). Priority Habitat and Species List.[133] This list was updated for consistency with guidance from WDFW.

This question is independent of the land use between the wetland unit and the Priority Habitat. All vegetated wetlands are by definition a Priority Habitat but are not included in this list because they are addressed by this rating system.

Count how many of the following Priority Habitats are within 330 ft (100 m) of the wetland unit:

☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

☐ **Biodiversity Areas and Corridors**: Areas of habitat that are relatively important to various species of native fish and wildlife. This habitat automatically counts if mapped on the PHS online map within 100m of the wetland. If not mapped, a determination can be made in the field.

☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.

☐ **Fresh Deepwater:** Lands permanently flooded with freshwater, including environments where surface water is permanent and often deep, so that water, rather than air, is the principal medium within which the dominant organisms live. Substrate does not support emergent vegetation. Do not select if Instream habitat is also present, or if the entire Deepwater feature is included in the wetland unit being rated (such as a pond with a vegetated fringe).

☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.

☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources. Do not select if Fresh Deepwater habitat is also present.

☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore.

☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in. (81 cm) diameter at breast height (dbh) or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in. (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.

[133] http://wdfw.wa.gov/publications/00165/wdfw00165.pdf

Wetland name or number D

☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important. For single oaks or oak stands <0.4 ha in urban areas, WDFW's Management Recommendations for Oregon White Oak[134] provides more detail for determining if they are Priority Habitats

☐ **Riparian:** The area adjacent to freshwater aquatic systems with flowing or standing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.

☑ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in. (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in. (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.

☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie.

[134] https://wdfw.wa.gov/publications/00030/wdfw00030.pdf

Wetland name or number D

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type *Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.*	**Category**
SC 1.0. Estuarine wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt Yes – Go to **SC 1.1** No= **Not an estuarine wetland**	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? Yes = **Category I** No – Go to **SC 1.2**	**Cat. I**
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 10% cover of non-native plant species. If non-native species are *Spartina*, see chapter 4.8 in the manual. ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. Yes = **Category I** No = **Category II**	**Cat. I** **Cat. II**
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Does the wetland overlap with any known or historical rare plant or rare & high-quality ecosystem polygons on the WNHP Data Explorer?[135] Yes = **Category I** No – Go to **SC 2.2** SC 2.2. Does the wetland have a rare plant species, rare ecosystem (e.g., plant community), or high-quality common ecosystem that may qualify the site as a WHCV? Contact WNHP for resources to help determine the presence of these elements. Yes – Submit data to WA Natural Heritage Program for determination,[136] Go to **SC 2.3** No = **Not a WHCV** SC 2.3. Did WNHP review the site within 30 days and determine that it has a rare plant or ecosystem that meets their criteria? Yes = **Category I** No = **Not a WHCV**	**Cat. I**
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? *Use the key below.* ***If you answer YES, you will still need to rate the wetland based on its functions.*** SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in. or more of the first 32 in. of the soil profile? Yes – Go to **SC 3.3** No – Go to **SC 3.2** SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in. deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? Yes – Go to **SC 3.3** No = **Not a bog** SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? Yes = **Category I bog** No – Go to **SC 3.4** **NOTE:** If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in. deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? Yes = **Category I bog** No = **Not a bog**	**Cat. I**

[135] https://www.dnr.wa.gov/NHPdata
[136] https://www.dnr.wa.gov/Publications/amp_nh_sighting_form.pdf

Wetland name or number D

SC 4.0. Forested Wetlands — **Cat. I**

Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as Priority Habitats? ***If you answer YES, you will still need to rate the wetland based on its functions.***

☐ **Old-growth forests** (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in. (81 cm) or more.

☐ **Mature forests** (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in. (53 cm).

Yes = **Category I** | No = **Not a forested wetland for this section**

SC 5.0. Wetlands in Coastal Lagoons

Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?

☐ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks

☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon *(needs to be measured near the bottom)*

☐ The lagoon retains some of its surface water at low tide during spring tides

Yes – Go to **SC 5.1** | No = **Not a wetland in a coastal lagoon** — **Cat. I**

SC 5.1. Does the wetland meet all of the following three conditions?

☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species in H 1.5 in the manual).

☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. — **Cat. II**

☐ The wetland is larger than $^{1}/_{10}$ ac (4350 ft^2)

Yes = **Category I** No = **Category II**

SC 6.0. Interdunal Wetlands

Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? ***If you answer YES, you will still need to rate the wetland based on its habitat functions.***

In practical terms that means the following geographic areas:

☐ Long Beach Peninsula: Lands west of SR 103

☐ Grayland-Westport: Lands west of SR 105 — **Cat I**

☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 and Ocean Shores Blvd SW, including lands west of E. Oceans Shores Blvd SW.

Yes – Go to **SC 6.1** | No = **Not an interdunal wetland for rating** — **Cat. II**

SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? Yes = **Category I** No – Go to **SC 6.2**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? — **Cat. III**

Yes = **Category II** No – Go to **SC 6.3**

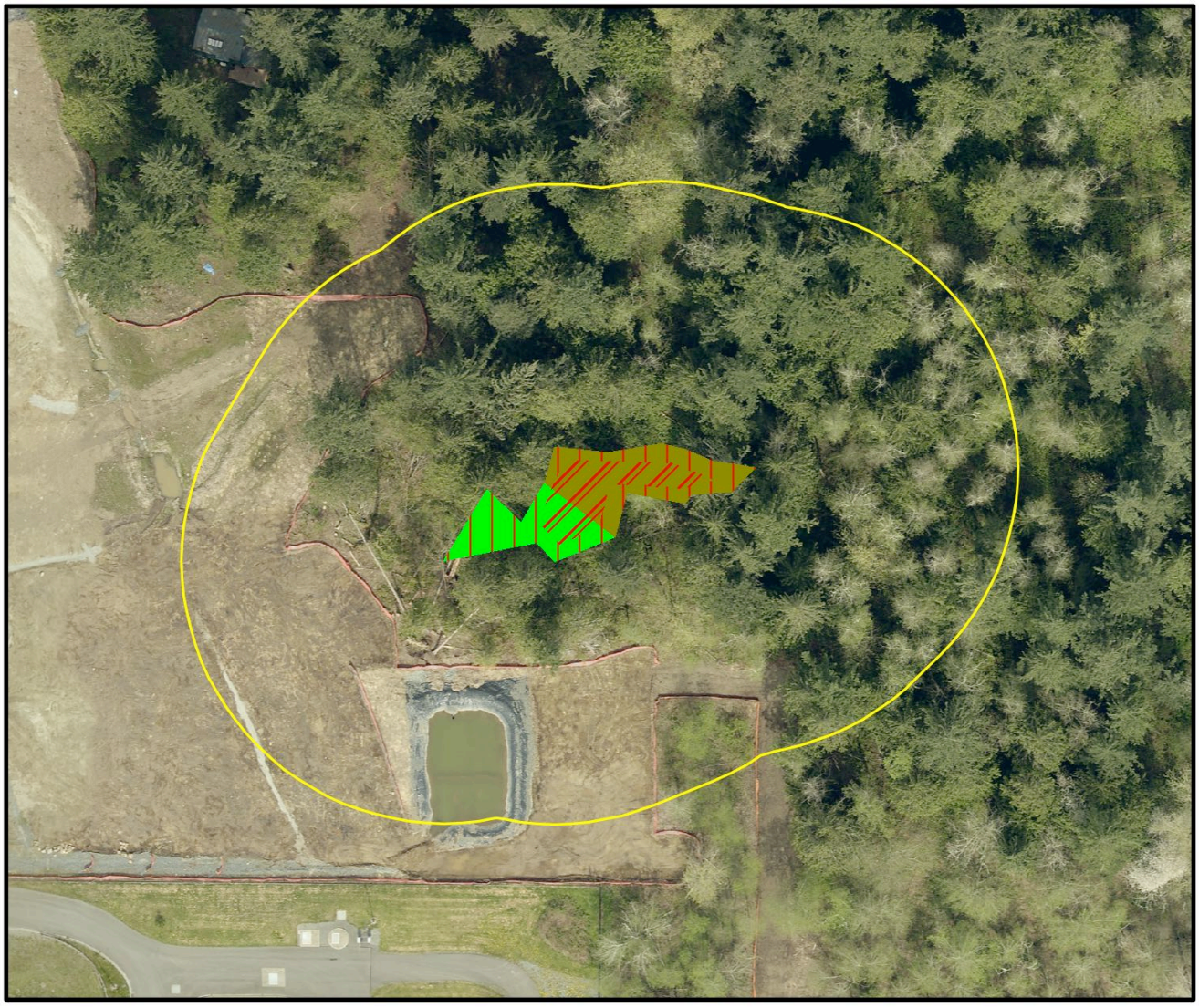
SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? — **Cat. IV**

Yes = **Category III** No = **Category IV**

Category of wetland based on Special Characteristics

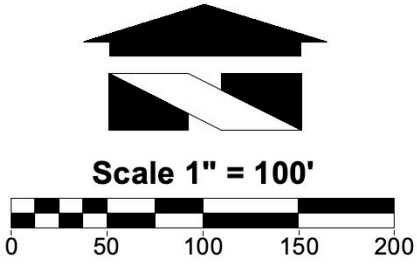
If you answered No for all types, enter "Not Applicable" on Summary Form

WETLAND RATING FIGURE 1- WETLAND D



LEGEND

- SCRUB-SHRUB
- FORESTED VEGETATION
- SATURATED ONLY
- SEASONALLY FLOODED
- 150' FROM WL BOUNDARY

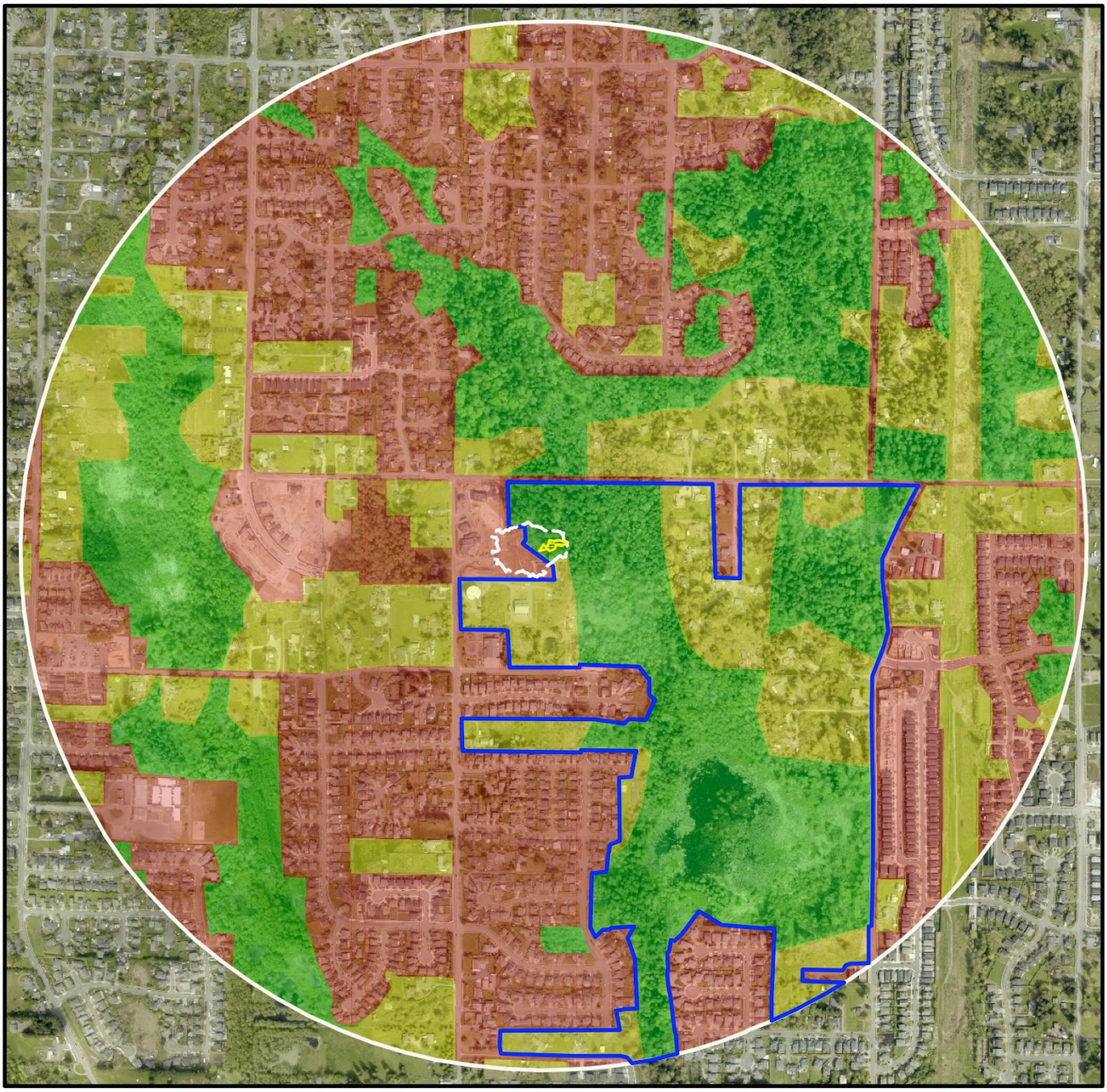


Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

WETLAND RATING
Wetland D

Figure D-1
WRI Job # [illegible]
Rated b[illegible]

WETLAND RATING FIGURE 2- WETLAND D



LEGEND

- RELATIVELY UNDISTURBED
- LOW/MOD. INTENSITY
- HIGH INTENSITY
- ACCESSIBLE HABITAT
- WETLAND
- 1 KM FROM WETLAND
- CONTRIBUTING BASIN

CONTRIBUTING BASIN AREA RELATIVE TO WETLAND UNIT IS 20.8:1

Scale 1" = 1,000'

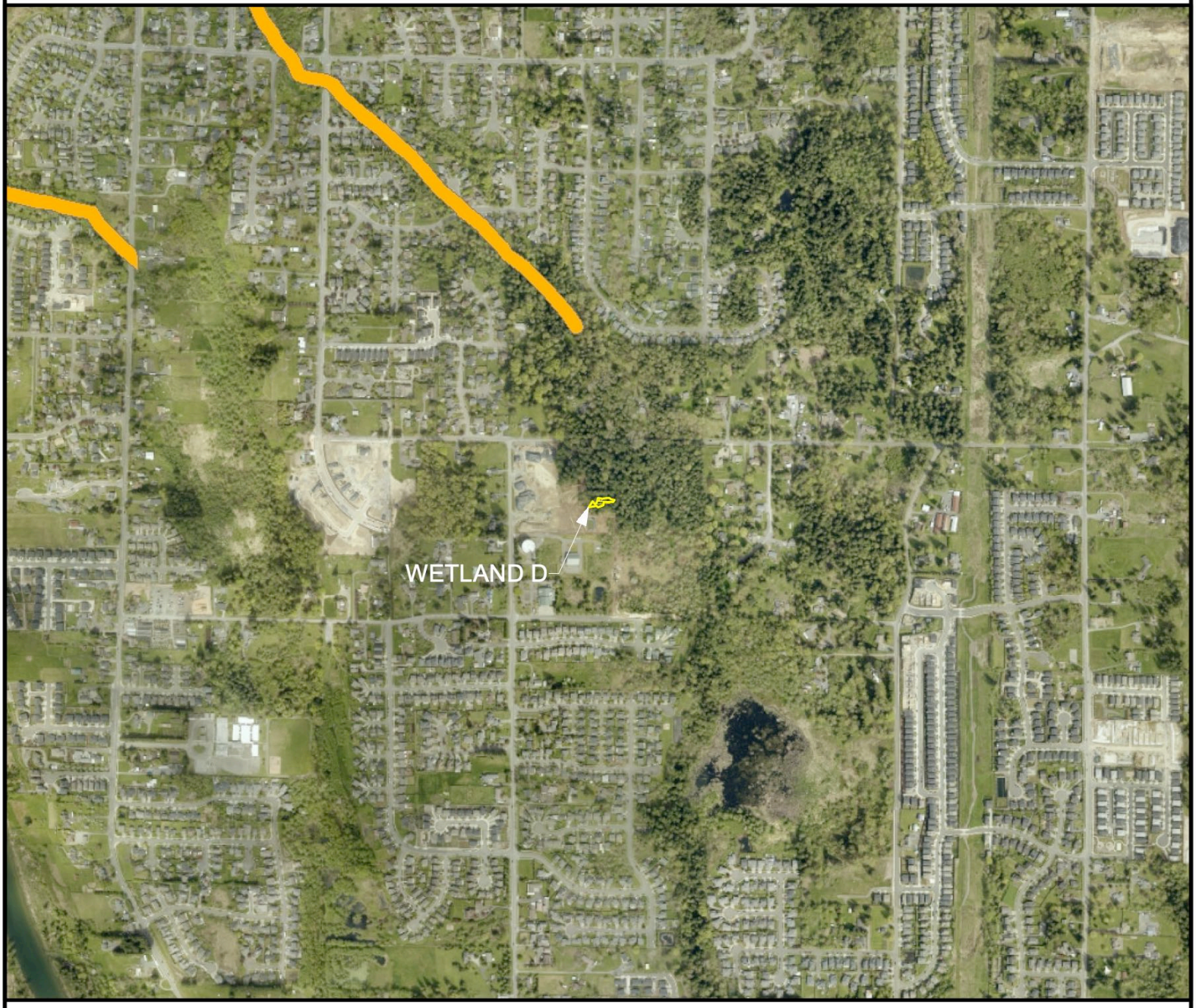
0 1,000 2,000

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WETLAND RATING
Wetland D

Figure D-2
WRI Job # [illegible]
Rated b

WETLAND RATING FIGURE 3- WETLAND D



LEGEND

- WETLAND
- AQUATIC RESOURCES ON THE 303(d) LIST
- AQUATIC RESOURCES WITH ACTIVE TMDL LISTING

Scale 1" = 1,000'

0 1,000 2,000

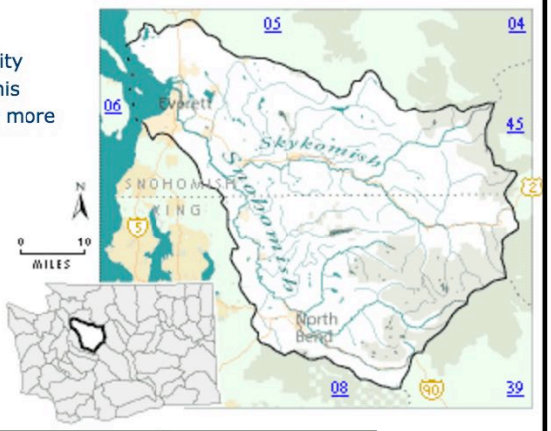
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WETLAND RATING
Wetland D

Figure D-3
WRI Job #
Rated b

WRIA 7: Snohomish

The following table lists overview information and links to specific water quality improvement projects (including total maximum daily loads, or TMDLs) for this water resource inventory area (WRIA). Please use links (where available) for more information on a project.



Counties

- King
- Snohomish

Waterbody Name	Pollutant(s)	Status**	TMDL Lead
Lake Loma	Total Phosphorus	Straight to implementation project under development	Tricia Shoblom 425-649-7288
Snohomish River	French Creek / Pilchuck River • Dissolved Oxygen • Temperature	Under development	Ralph Svrjcek 425-649-7165
	Dioxin	EPA approved	Ralph Svrjcek 425-649-7165
	Estuary • Ammonia • BOD	EPA approved	Ralph Svrjcek 425-649-7165
	Tributaries • Fecal Coliform Tributaries: • Allen Creek • Quilceda Creek • French Creek • Woods Creek • Pilchuck River • Marshlands (Wood Creek) {2}	EPA approved	Ralph Svrjcek 425-649-7165
	Snoqualmie River • Ammonia-N • BOD (5-day) • Fecal Coliform Temperature	EPA approved EPA approved Has an implementation plan	Ralph Svrjcek 425-649-7165

** ***Status*** *will be listed as one of the following: Approved by EPA, Under Development or Implementation*

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WETLAND RATING
Wetland D

Figure D-4
WRI Job #
Rated b

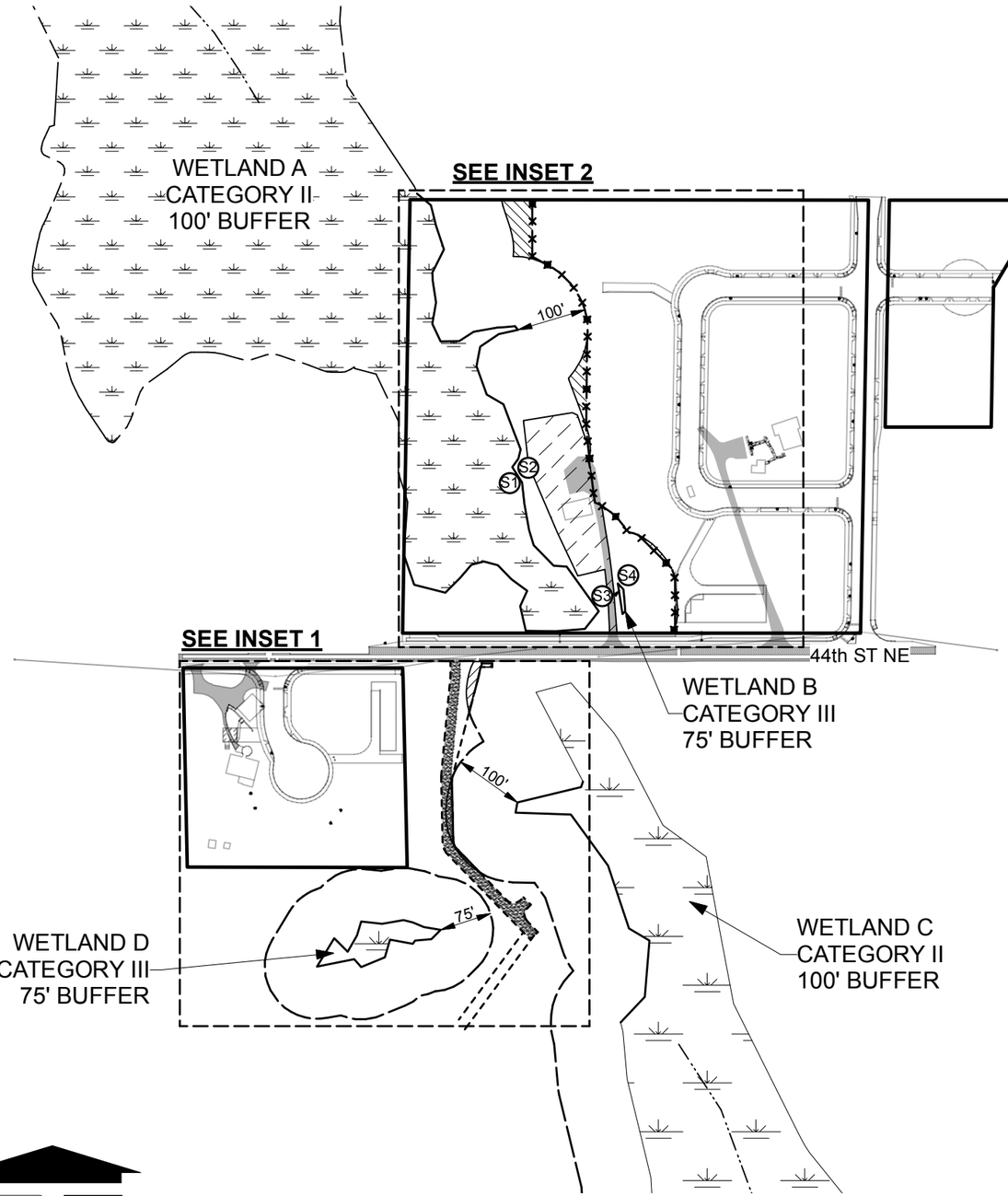
APPENDIX C

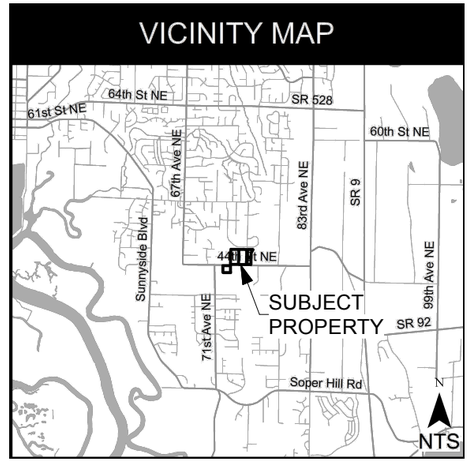
CRITICAL AREA STUDY & BUFFER MITIGATION MAPS (SHEETS 1-2/2)

CRITICAL AREA STUDY AND BUFFER MITIGATION MAP

WILLIAMS POINTE

PORTION OF SECTION 2, 35, TOWNSHIP 29, 30N, RANGE 5E, W.M.





LEGEND

- WETLAND
- WETLAND (APPROX.)
- BUFFER
- S1–S4 DATA SITES
- SEWER EASEMENT
- BUFFER AVERAGING REDUCTION AREA
- BUFFER AVERAGING ADDITION AREA
- BUFFER ENHANCEMENT AREA
- SPLIT-RAIL FENCING/ CRITICAL AREA SIGN

Scale 1" = 200'

0 100 200 300 400

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CRITICAL AREA STUDY AND BUFFER MITIGATION MAP
WILLIAMS POINTE

Keystone Land LLC
Attn: Joe Long
13805 Smokey Point Blvd, #102
Marysville, WA 98271

Sheet 1/2
WRI #: 23338
Drawn b
Date: 7/26

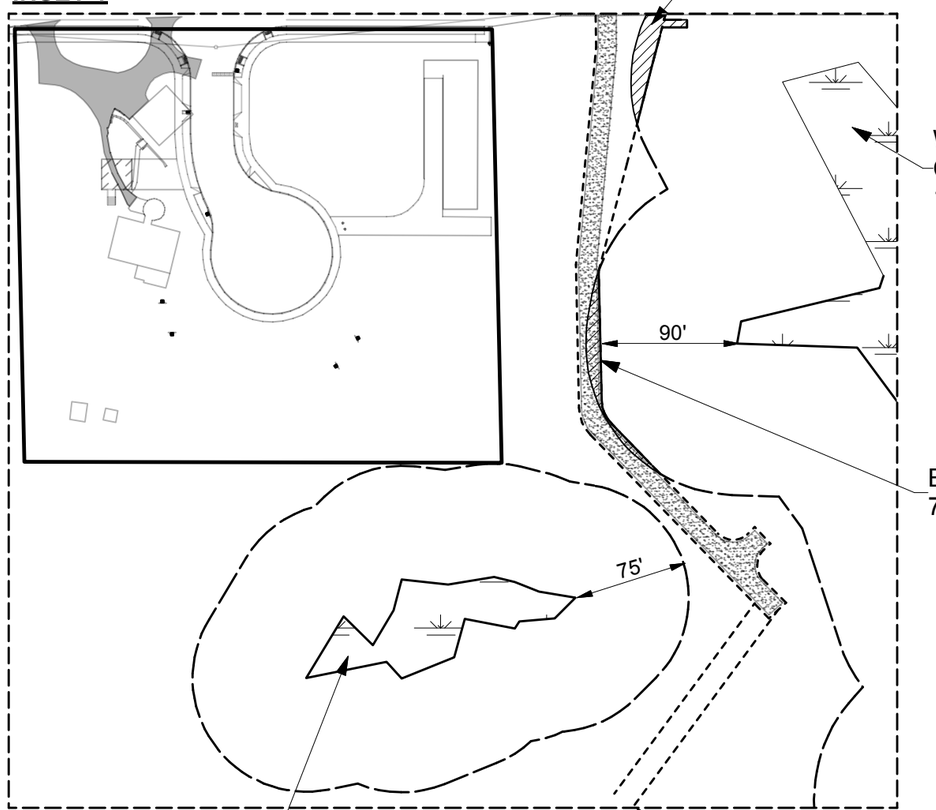
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CRITICAL AREA STUDY AND BUFFER MITIGATION MAP

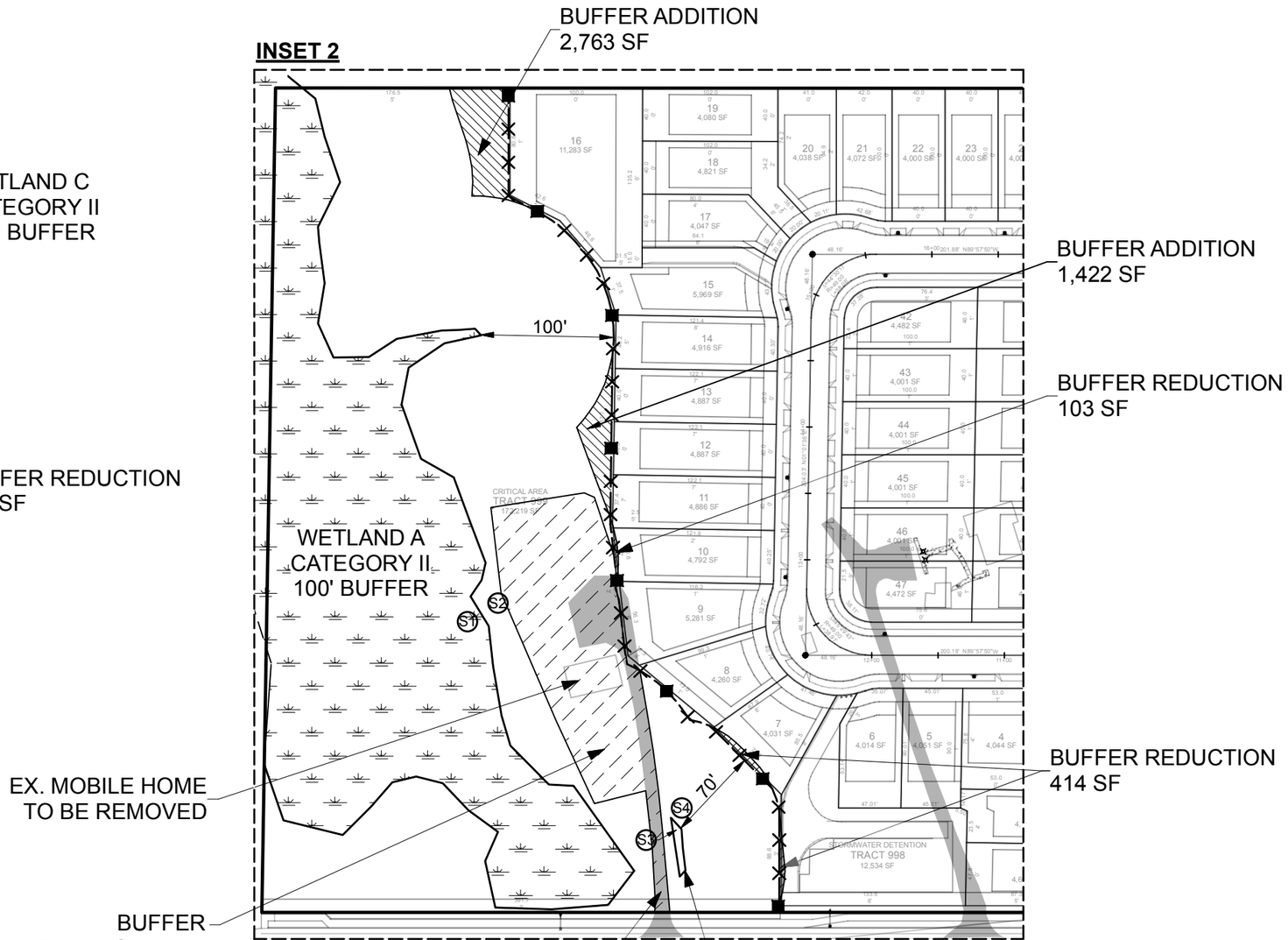
WILLIAMS POINTE

PORTION OF SECTION 2, 35, TOWNSHIP 29, 30N, RANGE 5E, W.M.

INSET 1



INSET 2



LEGEND

- WETLAND
- WETLAND (APPROX.)
- BUFFER
- S1–S4 DATA SITES
- SEWER EASEMENT
- BUFFER AVERAGING REDUCTION AREA
- BUFFER AVERAGING ADDITION AREA
- BUFFER ENHANCEMENT AREA
- SPLIT-RAIL FENCING/ CRITICAL AREA SIGN

Scale 1" = 100'

0 50 100 150 200

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CRITICAL AREA STUDY AND BUFFER MITIGATION MAP
WILLIAMS POINTE

Keystone Land LLC
Attn: Joe Long
13805 Smokey Point Blvd, #102
Marysville, WA 98271

Sheet 2/2
WRI #: 23338
Drawn b
Date: 7/26/

NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON

WILLIAMS POINTE
PRELIMINARY PLANS
MARYSVILLE, WA

LEGEND AND ABBREVIATIONS

EXISTING SYMBOLS	DESCRIPTION
●	SET 1/2" X 24" REBAR W/CAP "PCS 37536"
○	EXISTING CORNER MONUMENT AS NOTED
	QUARTER SECTION TIE
	SECTION TIE
	FOUND MONUMENT AS NOTED
	BLOW-OFF VALVE
	CATCH BASIN
	FIRE HYDRANT
	GUY ANCHOR
HB	HOSE BIB
	INVERT/CULVERT
	MAILBOX
PM	POWER METER
	POWER TRANSFORMER
S	SANITARY SEWER MANHOLE
	SIGN POST
SD	STORM DRAIN MANHOLE
	TELEVISION RISER
	UTILITY/ POLE
W	WATER MANHOLE
	WATER METER
	WATER VALVE
	WETLAND FLAG
	YARD LIGHT
	CONIFEROUS TREE
	DECIDUOUS TREE

ABBREVIATIONS	
CPP	CORRUGATED PLASTIC PIPE
IE	INVERT ELEVATION
INV	INVERT ELEVATION
OHP	OVERHEAD POWER LINE
TPM	TELEPHONE PAINT MARK
C	CEDAR
F	FIR
H	HEMLOCK
M	MAPLE

PROPOSED STORM SYMBOLS

SYMBOL	DESCRIPTION
	SD CAP
	TYPE 1 CATCH BASIN, GRATED LID
	TYPE 1 CATCH BASIN, SOLID LID
	TYPE 2 CATCH BASIN, GRATED LID
	TYPE 2 CATCH BASIN, SOLID LID
	BEEHIVE MANHOLE COVER
	SQUARE YARD DRAIN
	ROUND YARD DRAIN
	STORM CLEAN OUT
	STORM PIPE

PROPOSED SEWER SYMBOLS

SYMBOL	DESCRIPTION
	SEWER CAP
	SEWER CLEANOUT
	SEWER MANHOLE
	SEWER PIPE

PROPOSED WATER SYMBOLS

SYMBOL	DESCRIPTION
	WATER CAP
	CONCRETE BLOCKING
	11.25° BEND
	22.5° BEND
	45° BEND
	90° BEND
	VALVE
	HYDRANT ASSEMBLY
	BLOW-OFF VALVE
	REDUCER
	AIR-VAC ASSEMBLY
	WATER METER
	WATER PIPE

PROPOSED SURVEY SYMBOLS

SYMBOL	DESCRIPTION
	SURVEY MONUMENT IN PROPOSED ROAD

CONTACT LIST

DEVELOPER:
KEYSTONE LAND, LLC
13805 SMOKEY POINT BLVD #102
MARYSVILLE, WA 98271
CONTACT: JOE LONG
PHONE: (425) 268-6373
EMAIL: joe@cornerstonehomes.com

CIVIL ENGINEER:
SOLID GROUND ENGINEERING
8105 166TH AVE NE
REDMOND, WA 98052
CONTACT: TOM ABBOTT, PE
PHONE: (425) 281-8324
EMAIL: tabbott@solidgroundpnw.com

GEOTECHNICAL ENGINEER:
EARTH SOLUTIONS NW
15365 NE 90TH ST #100
REDMOND, WA 98052
CONTACT: HENRY WRIGHT, PE
PHONE: (425) 449-4704
EMAIL: Henryw@esnw.com

LANDSCAPE ARCHITECT:
PAUL JAY LANDSCAPE ARCHITECT
1115 BRIDGE ROAD
EASTHAM, MA 02642
CONTACT: PAUL JAY
PHONE: (425) 210-1986
EMAIL: pauljayla@gmail.com

SURVEYOR:
PACIFIC COAST SURVEYS, INC.
P.O. BOX 13619
MILL CREEK, WA 98082
CONTACT: DARREN RIDDLE, PLS
PHONE: (425) 512-7099
FAX: (425) 357-3577
EMAIL: darren@pcsurveys.net

WETLAND BIOLOGIST:
WETLAND RESOURCES
9505 19TH AVE SE, STE 106
EVERETT, WA 98208
CONTACT: JOHN LAUFENBURG
PHONE: (425) 337-3174
FAX: (425) 337-3045
EMAIL: john@wetlandresources.com

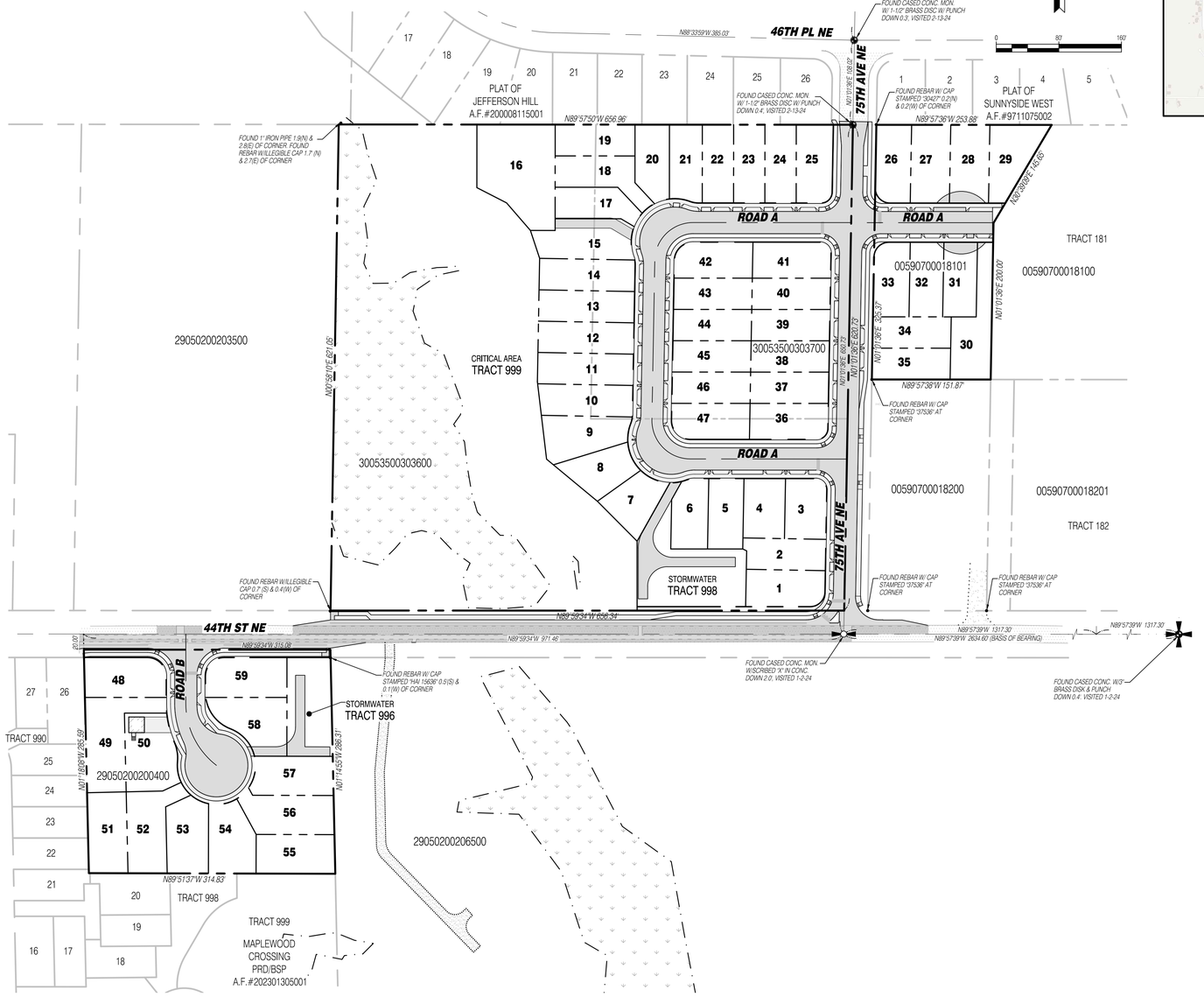
PROJECT INFORMATION

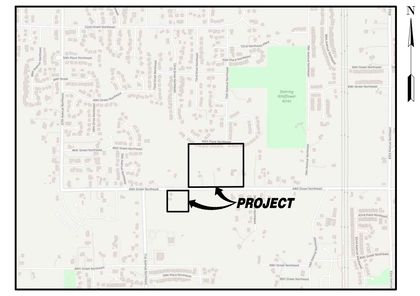
TAX PARCELS:	30053500309600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

EARTHWORK QUANTITIES

STRIPPING:	10,500 CY
CUT:	40,000 CY
FILL:	35,000 CY
NET:	5,000 CY (CUT)
DISTURBED AREA:	446,882 SF (10.26 AC)

THE ABOVE QUANTITIES ARE FOR PERMITTING PURPOSES. CONTRACTOR TO VERIFY.





VICINITY MAP
SCALE: 1"=2000'

SURVEY INFORMATION

LEGAL DESCRIPTION

PARCEL NO. 29050200200400:
THE EAST 315 FEET OF THE NORTH HALF OF THE NORTH-WEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

PARCEL NO. 30053500303800:
PARCEL 1, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 30053500303700:
PARCEL 2, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 00590700018101:
PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 22-001 RECORDED UNDER AFN. 202207195002

ALL SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 (NAVD88 -3.67'= NGVD29)

FOUND BRASS DISK W/ PUNCH IN CONC. MON. AT THE INTERSECTION OF 46TH PL. NE & 75TH AVE N.E. CITY OF MARYSVILLE DATABASE PT. ID 100
WGS DESIGNATION 294669
ELEV. = 313.56'

BASIS OF BEARING

PER THE PLAT OF SEAVIEW RIDGE, RECORDED IN VOLUME 56 OF PLATS, ON PAGES 249 THROUGH 251, THE MONUMENTED CENTERLINE OF 44TH ST. N.E., AS THE BEARING OF
N 89°59'34" W, AS SHOWN HEREON.

SURVEY REFERENCES

(R1) PLAT OF SEAVIEW RIDGE - VOL. 56, PGS. 249-251

(R2) PLAT OF JEFFERSON HILL - A.F.#200008115001

(R3) CITY OF MARYSVILLE BLA NO. BLA 19-044, AFN. 201910295002

(R4) CITY OF MARYSVILLE BLA NO. BLA 22-001, AFN. 202207195002

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE AND REAL TIME KINEMATIC GPS POSITIONING UTILIZING THE HxGN SMARTNET NETWORK

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION
LEICA VIVA GNSS GS08 RECEIVER
ALL EQUIPMENT HAS BEEN MAINTAINED IN ADJUSTMENT TO MANUFACTURERS SPECIFICATIONS AS REQUIRED BY WAC 332-130-100

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS SET BY WAC 332-130-080 THROUGH 332-130-110

SURVEY NOTES

1.) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR OF RECORD.

2.) BOUNDARY LINES SHOWN AND CORNERS SET REPRESENT DEED LOCATIONS; OWNERSHIP LINES MAY VARY. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND DOES NOT PURPORT TO SHOW ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, AND OCCUPATION WHICH MAY ENCUMBER TITLE OR USE OF SUBJECT PROPERTY.

CITY PROJECT NUMBER: PA24-014

TABLE OF CONTENTS

1	COVER SHEET
2-3	EXISTING CONDITIONS MAP
4-5	PRELIMINARY PLAT MAP
6-7	PRELIMINARY ROAD AND GRADING PLAN
8-11	PRELIMINARY ROAD PROFILES
12	PRELIMINARY ROAD SECTIONS
13-14	PRELIMINARY UTILITY PLAN

UTILITY NOTE

THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. AGENCIES INVOLVED SHALL BE NOTIFIED WITHIN A REASONABLE TIME PRIOR TO THE START OF CONSTRUCTION.

SURVEY DISCLAIMER

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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

ENGINEER'S STAMP

REVISIONS

NO.	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS
1	7-26-24	REVISED PER CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

COVER SHEET

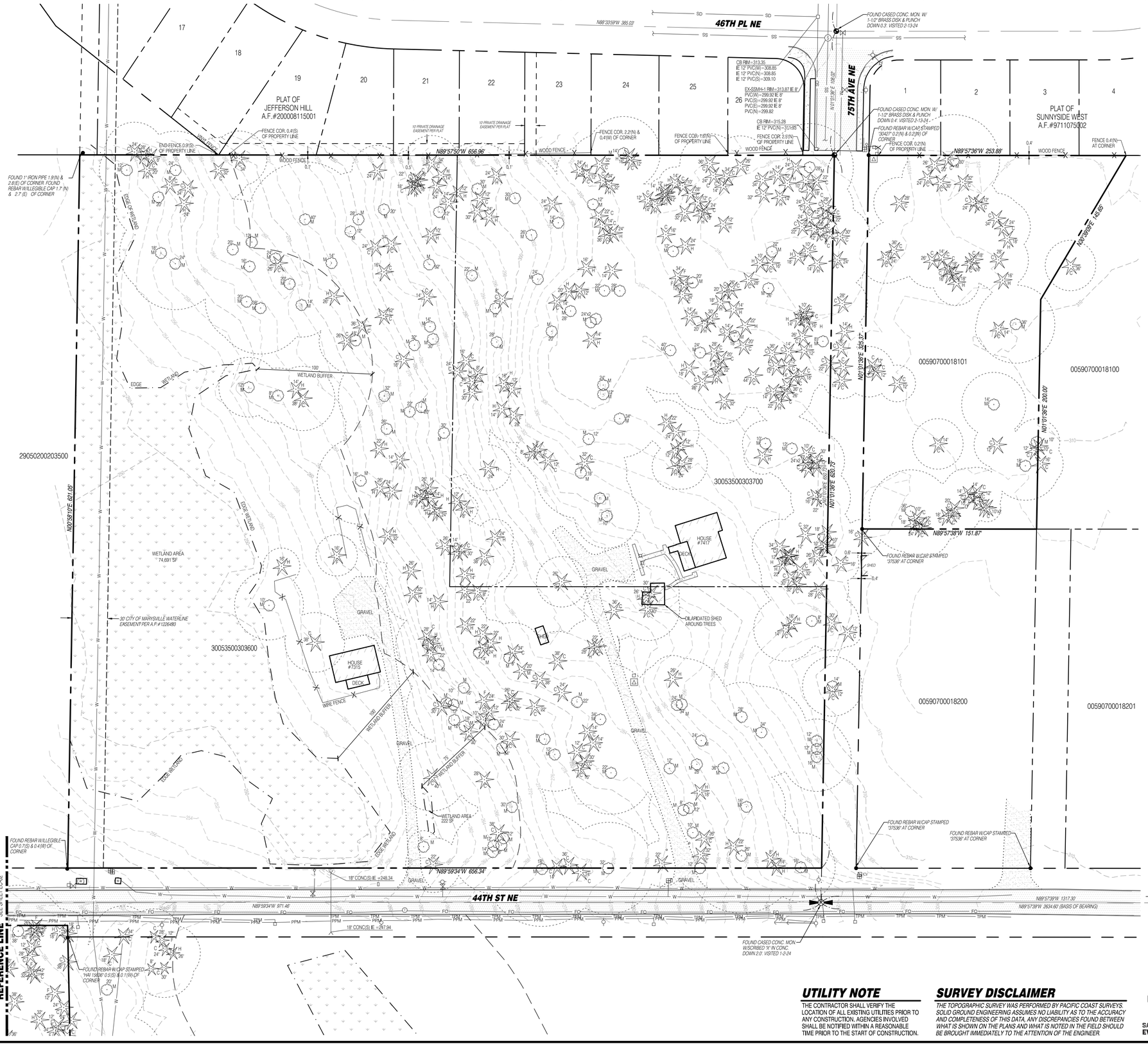
KEYSTONE LAND, LLC
WILLIAMS POINTE
MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

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1 OF 14

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NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON



SURVEY INFORMATION

LEGAL DESCRIPTION

PARCEL NO. 29050200200400:
THE EAST 315 FEET OF THE NORTH HALF OF THE NORTH-WEST QUARTER OF GOVERNMENT LOT 3, SECTION 2, TOWNSHIP 29 NORTH, RANGE 5 EAST, W.M., IN SNOHOMISH COUNTY, WASHINGTON.

PARCEL NO. 30053500303600:
PARCEL 1, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 30053500303700:
PARCEL 2, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 19-044, RECORDED UNDER AFN. 201910295002

PARCEL NO. 00590700018101:
PARCEL A, CITY OF MARYSVILLE BOUNDARY LINE ADJUSTMENT NO. BLA 22-001 RECORDED UNDER AFN. 202207195002

ALL SITUATE IN THE COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

VERTICAL DATUM

NAVD 88 (NAVD88 -3.67'= NGVD29)

FOUND BRASS DISK W/ PUNCH IN CONC. MON. AT THE INTERSECTION OF 46TH PL. NE & 75TH AVE N.E. CITY OF MARYSVILLE DATABASE PT. ID 100
WGS DESIGNATION 294669
ELEV. = 313.56'

BASIS OF BEARING

PER THE PLAT OF SEAVIEW RIDGE, RECORDED IN VOLUME 56 OF PLATS, ON PAGES 249 THROUGH 251, THE MONUMENTED CENTERLINE OF 44TH ST. N.E., AS THE BEARING OF
N 89°59'34" W, AS SHOWN HEREON.

SURVEY REFERENCES

(R1) PLAT OF SEAVIEW RIDGE - VOL. 56, PGS. 249-251

(R2) PLAT OF JEFFERSON HILL - A.F. #200008115001

(R3) CITY OF MARYSVILLE BLA NO. BLA 19-044, AFN. 201910295002

(R4) CITY OF MARYSVILLE BLA NO. BLA 22-001, AFN. 202207195002

EQUIPMENT & PROCEDURES

METHOD OF SURVEY:
SURVEY PERFORMED BY FIELD TRAVERSE AND REAL TIME KINEMATIC GPS POSITIONING UTILIZING THE HxGN SMARTNET NETWORK

INSTRUMENTATION:
LEICA TS16 ROBOTIC ELECTRONIC TOTAL STATION
LEICA VIVA GNSS GS08 RECEIVER
ALL EQUIPMENT HAS BEEN MAINTAINED IN ADJUSTMENT TO MANUFACTURER'S SPECIFICATIONS AS REQUIRED BY WAC 332-130-100

PRECISION:
MEETS OR EXCEEDS STATE STANDARDS SET BY WAC 332-130-080 THROUGH 332-130-110

SURVEY NOTES

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CITY PROJECT NUMBER: PA24-014

UTILITY NOTE

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REFERENCE LINE — SEE SHEET EC-02

THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

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Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

EXISTING CONDITIONS MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

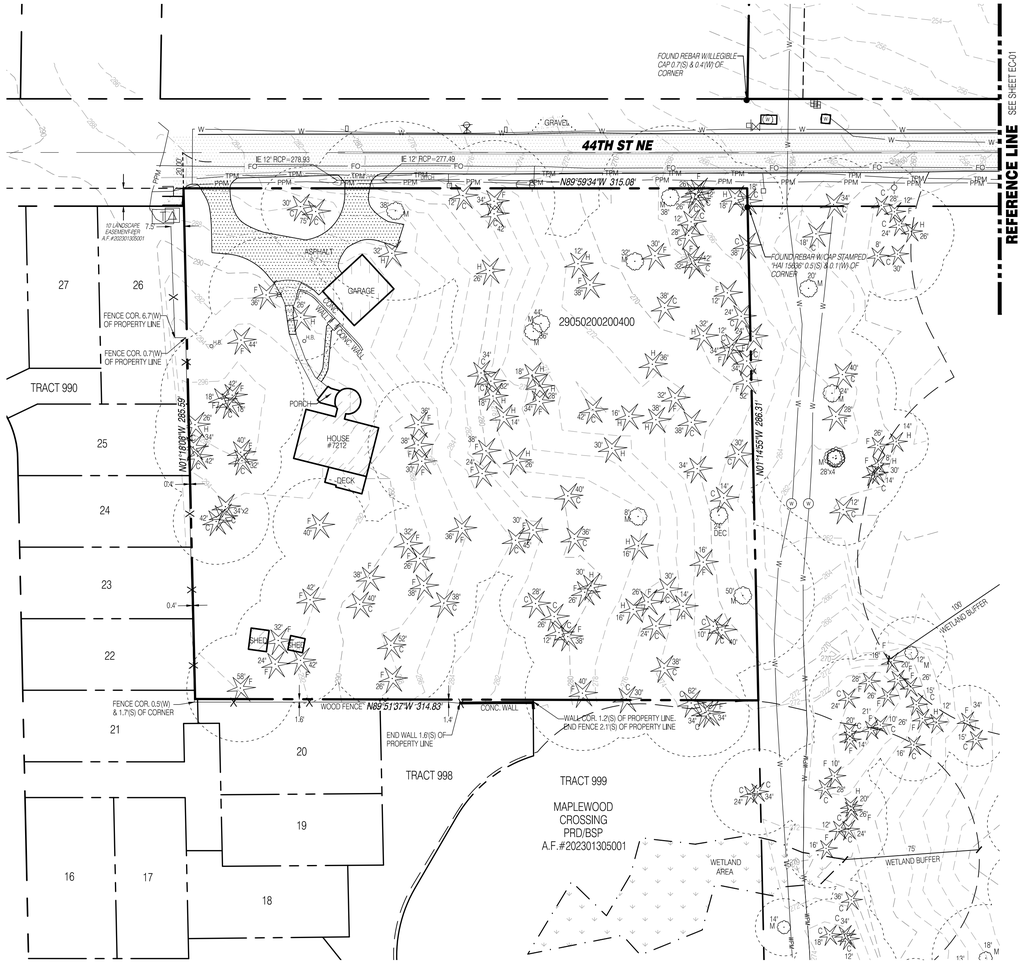
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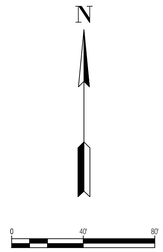
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EC-01

2 OF 14

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SURVEY INFORMATION

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CITY PROJECT NUMBER: PA24-014

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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

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Redmond, WA 98052

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KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

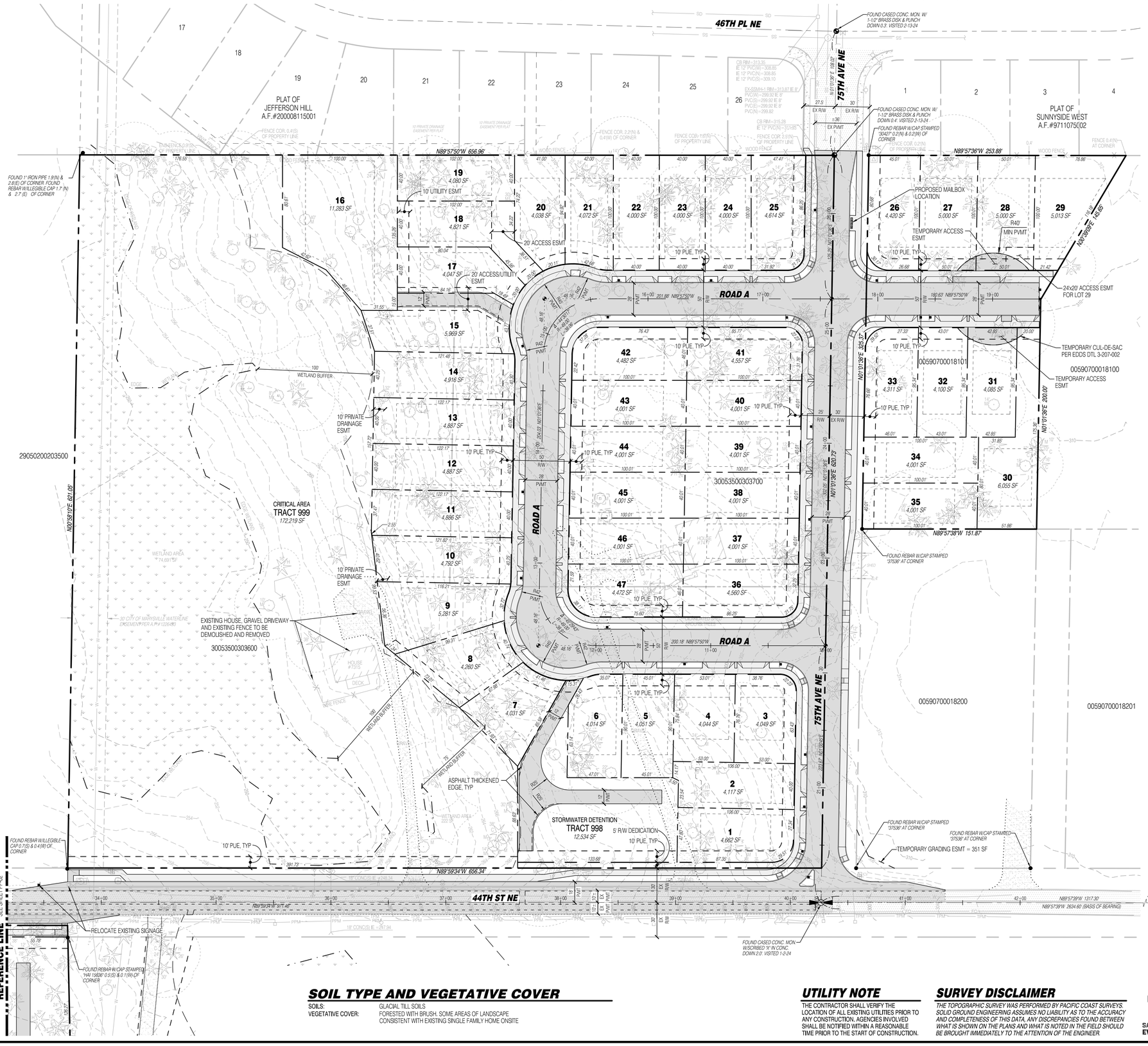
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JOB NUMBER:	23-0010

EC-02

3 OF 14

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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY

PROJECT INFORMATION

TAX PARCELS:	30053500303600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

DENSITY CALCULATIONS

ZONE (DENSITY):	R-6.5
GROSS AREA:	570,000 SF (13.09 AC)
FLAT 20% DEDUCTION:	114,000 SF (2.62 AC)
NET AREA:	456,000 SF (10.47 AC)
ALLOWABLE DENSITY:	10.47 x 6.5 DU/AC = 68 LOTS
LOTS PROPOSED:	59 LOTS

NOTES

1. LOTS 16 AND 17 WILL REQUIRE RESIDENTIAL FIRE SPRINKLERS.

SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

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THOMAS P. ARBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

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Solid Ground Engineering
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Redmond, WA 98052

PRELIMINARY PLAT MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

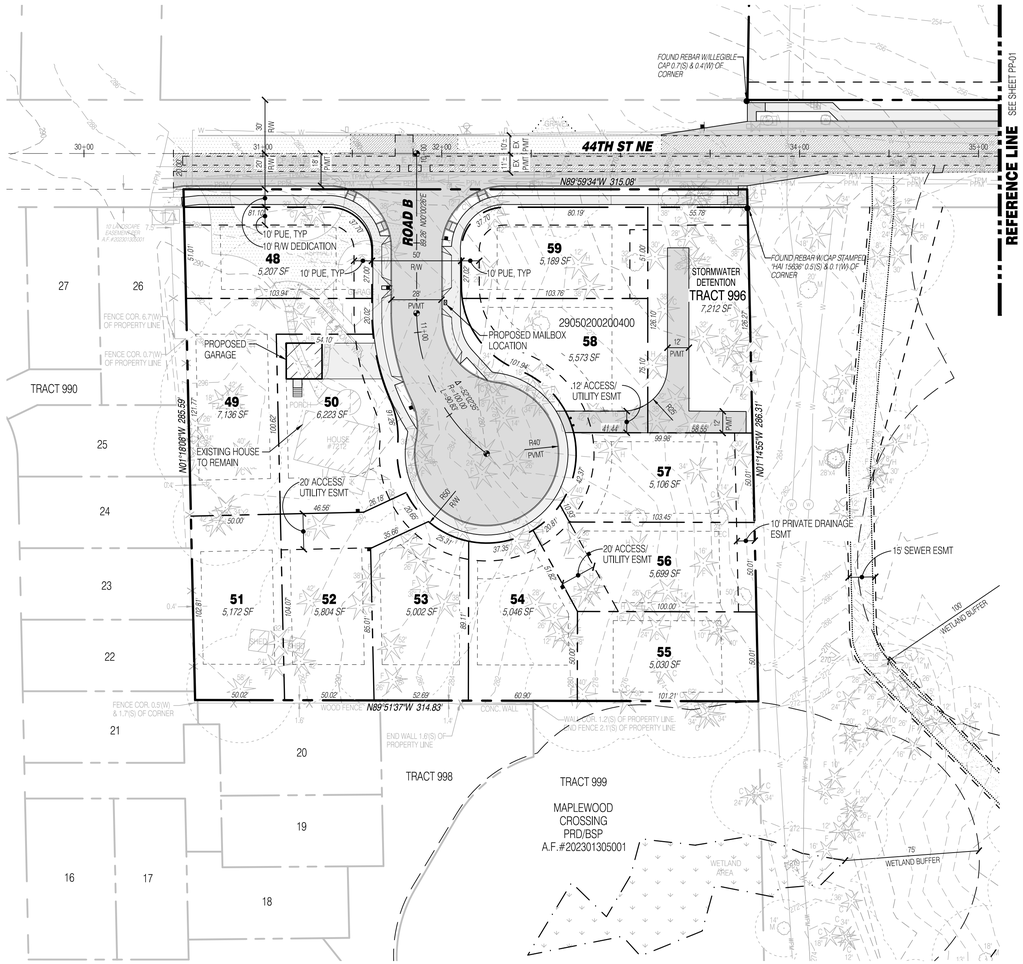
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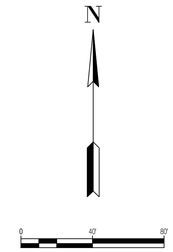
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JOB NUMBER:	23-0010

PP-01

4 OF 14

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LEGEND

SYMBOLS	DESCRIPTION
•	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY

PROJECT INFORMATION

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CITY PROJECT NUMBER: PA24-014

SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

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THOMAS P. ARBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

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KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

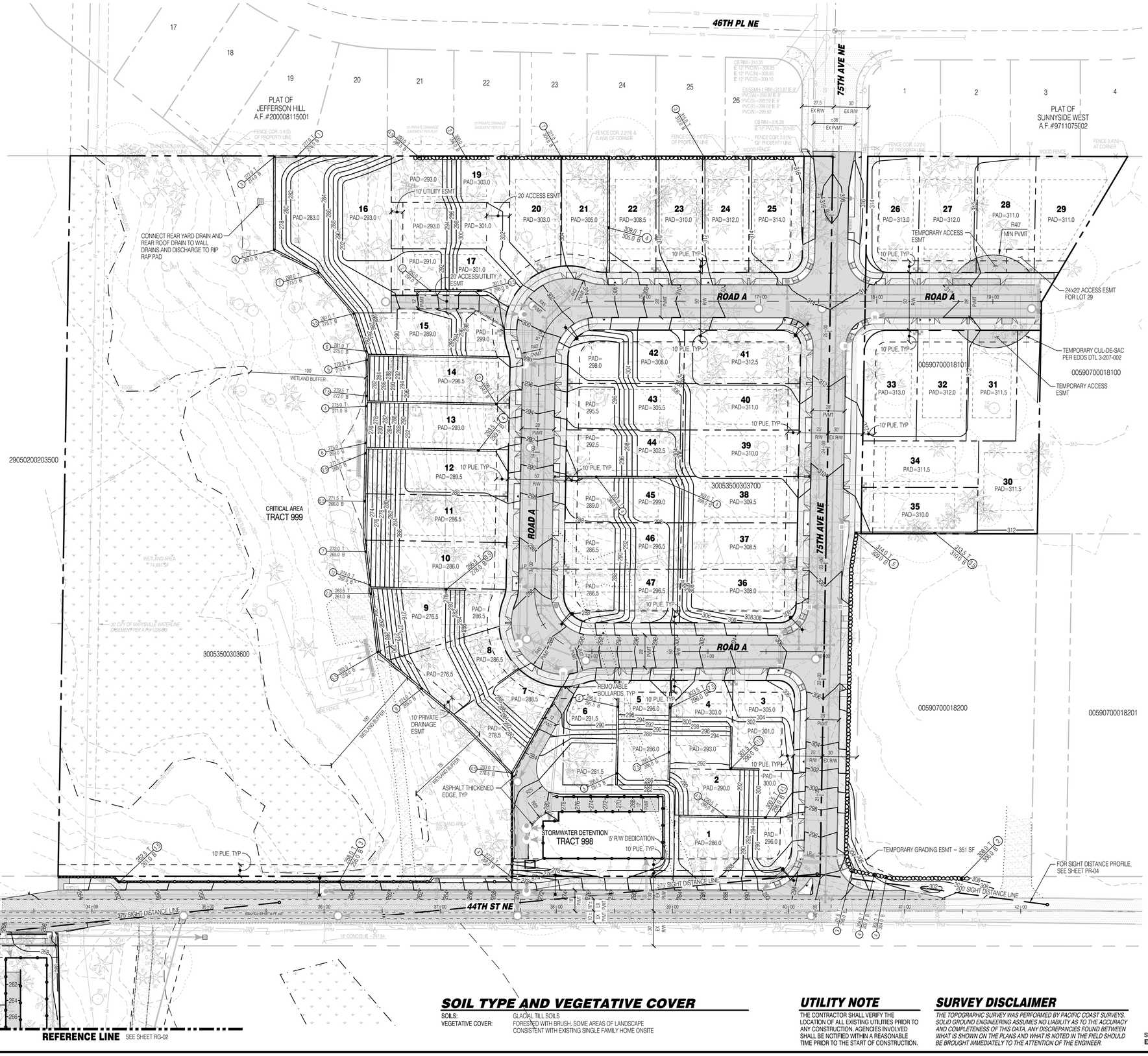
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PP-02

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LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	PROPOSED STREET LIGHT
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING

ROAD AND GRADING NOTES

1. GRADING AND PLACEMENT OF WALLS MUST BE IN CONFORMANCE WITH 220.50.030 OF THE MMC.
2. ALL DISTURBED PERVIOUS AREAS TO BE UNDERLAIN WITH BMP T5.13 SOILS.
3. TRENCH RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 3-703 OF THE EDDS.
4. ALL OVERHEAD UTILITIES ARE TO BE PLACED UNDERGROUND.
5. ALL WALLS OVER 48" REQUIRE A SEPARATE BUILDING PERMIT.
6. ALL WALLS OVER 30" REQUIRE FALL PROTECTION FENCING.
7. ALL WALLS TO BE 2' OR LESS AT TERMINATION.
8. ALL PAVEMENT CUTS SHALL BE RESTORED PER APPENDIX B OF EDDS CHAPTER 3, TACK AND SEAL SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN SECTION 9-02.1(6) OF THE STANDARD SPECIFICATIONS AND SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGES OF SAWCUTS AS SPECIFIED IN SECTION 5-04 OF THE STANDARD SPECIFICATIONS.

SOIL TYPE AND VEGETATIVE COVER

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PRELIMINARY ROAD AND GRADING

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

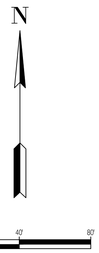
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RG-01
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LEGEND

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3. TRENCH RESTORATION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 3-703 OF THE EDDS.
4. ALL OVERHEAD UTILITIES ARE TO BE PLACED UNDERGROUND.
5. ALL WALLS OVER 48" REQUIRE A SEPARATE BUILDING PERMIT.
6. ALL WALLS OVER 30" REQUIRE FALL PROTECTION FENCING.
7. ALL WALLS TO BE 2' OR LESS AT TERMINATION.
8. ALL PAVEMENT CUTS SHALL BE RESTORED PER APPENDIX B OF EDDS CHAPTER 3. TACK AND SEAL SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN SECTION 9-02.1(6) OF THE STANDARD SPECIFICATIONS AND SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGES OF SAWCUTS AS SPECIFIED IN SECTION 5-04 OF THE STANDARD SPECIFICATIONS.

CITY PROJECT NUMBER: PA24-014

SOIL TYPE AND VEGETATIVE COVER

SOILS: GLACIAL TILL SOILS
VEGETATIVE COVER: FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

UTILITY NOTE

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SURVEY DISCLAIMER

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THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

ENGINEER'S STAMP

REVISIONS

No	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS
1	7-26-24	REVISED PER CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY ROAD AND GRADING

KEYSTONE LAND, LLC

WILLIAMS POINTE

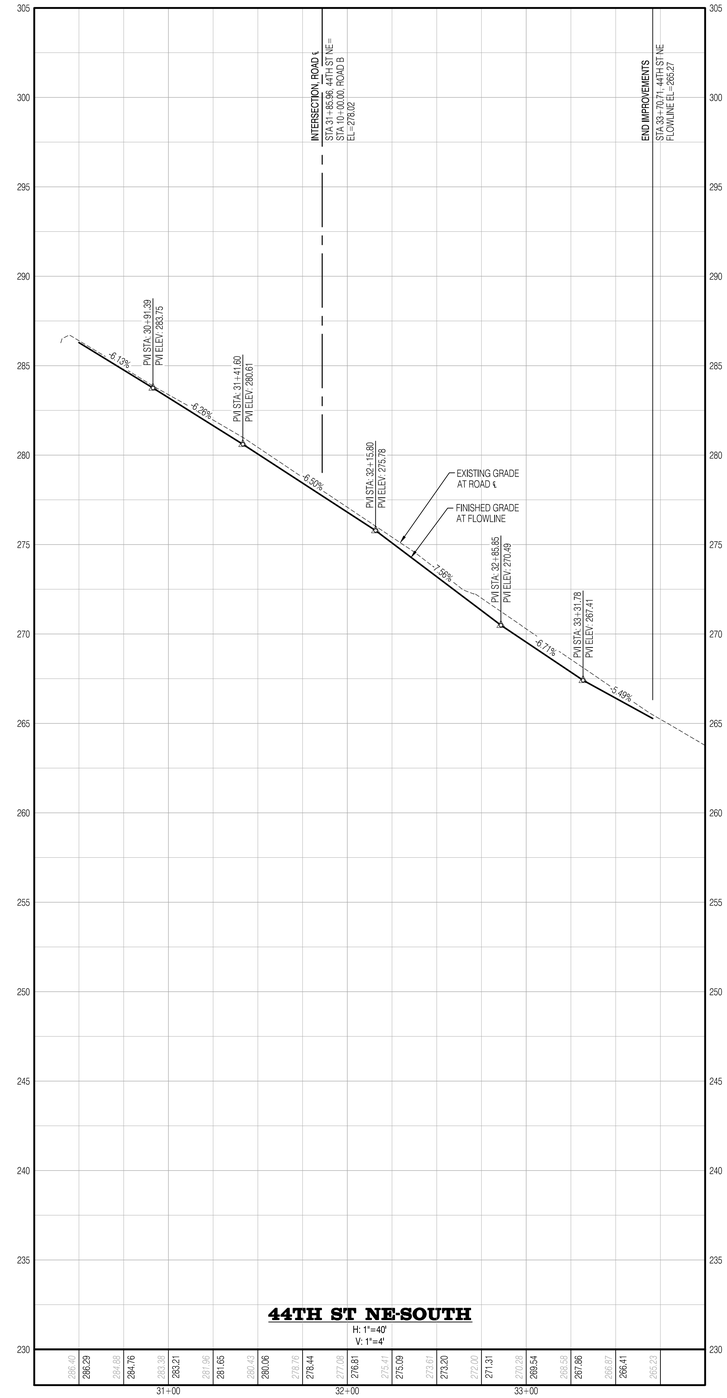
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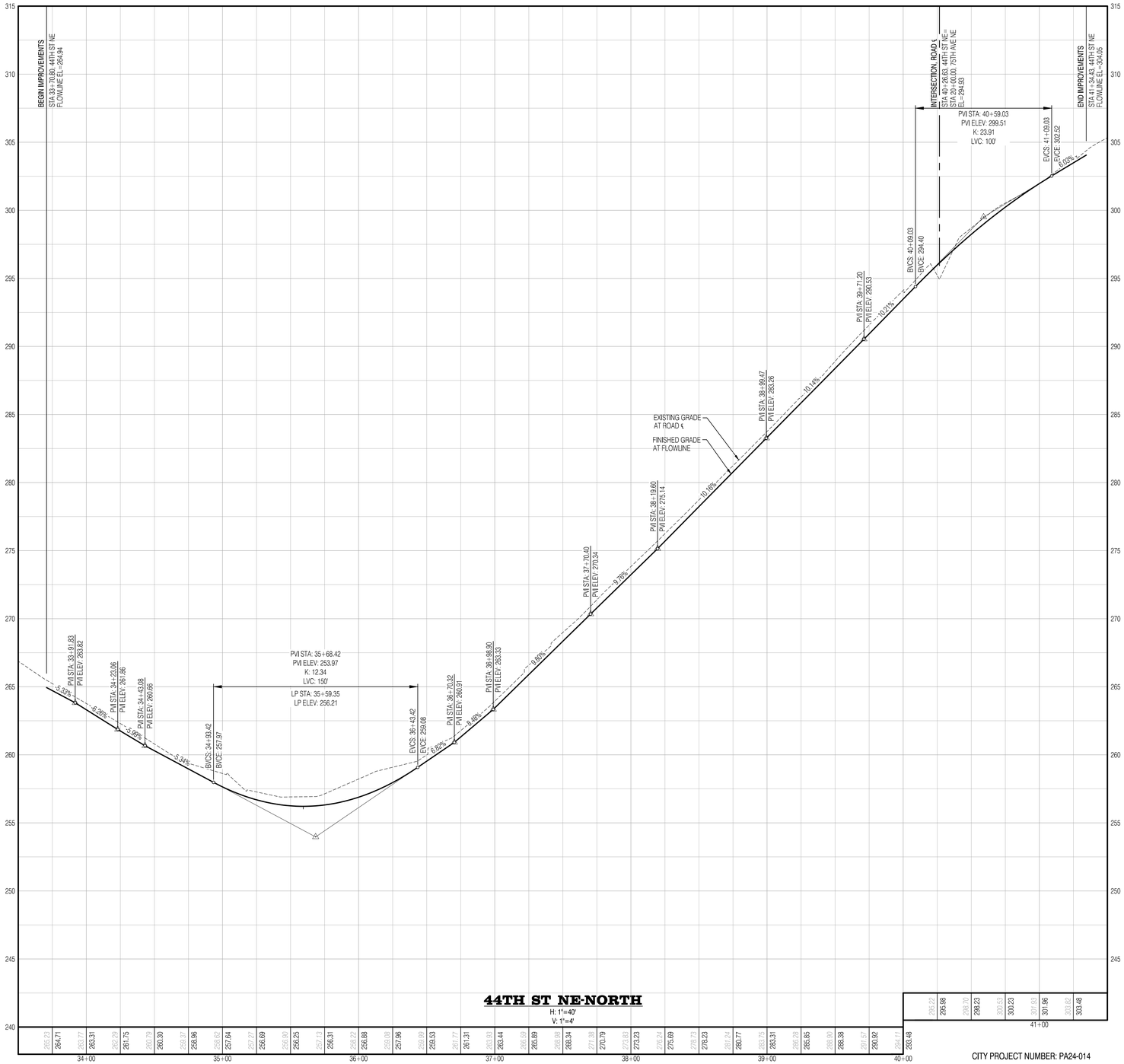
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RG-02
7 OF 14

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CITY PROJECT NUMBER: PA24-014

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PRELIMINARY ROAD PROFILES

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MARYSVILLE, WASHINGTON

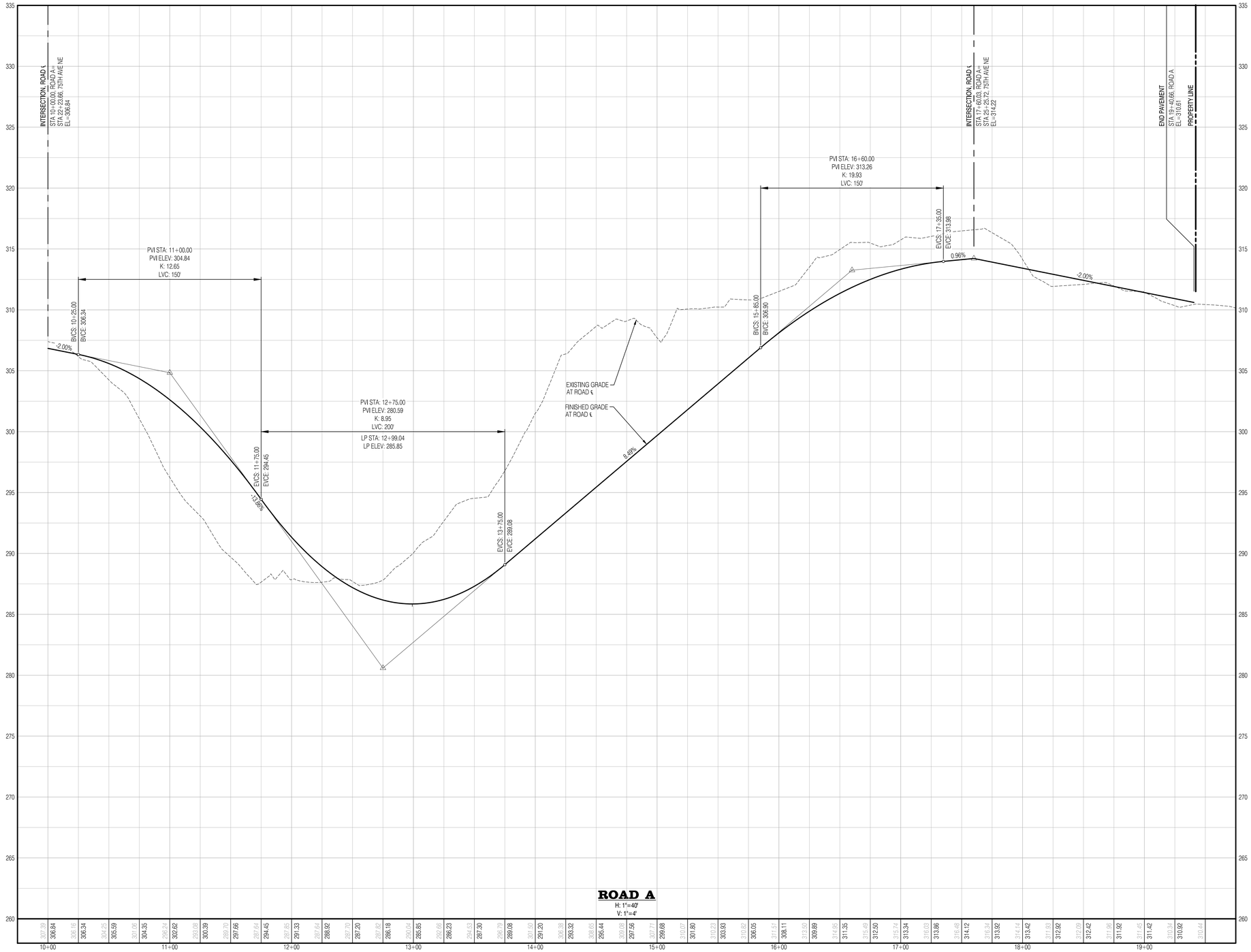
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PR-01

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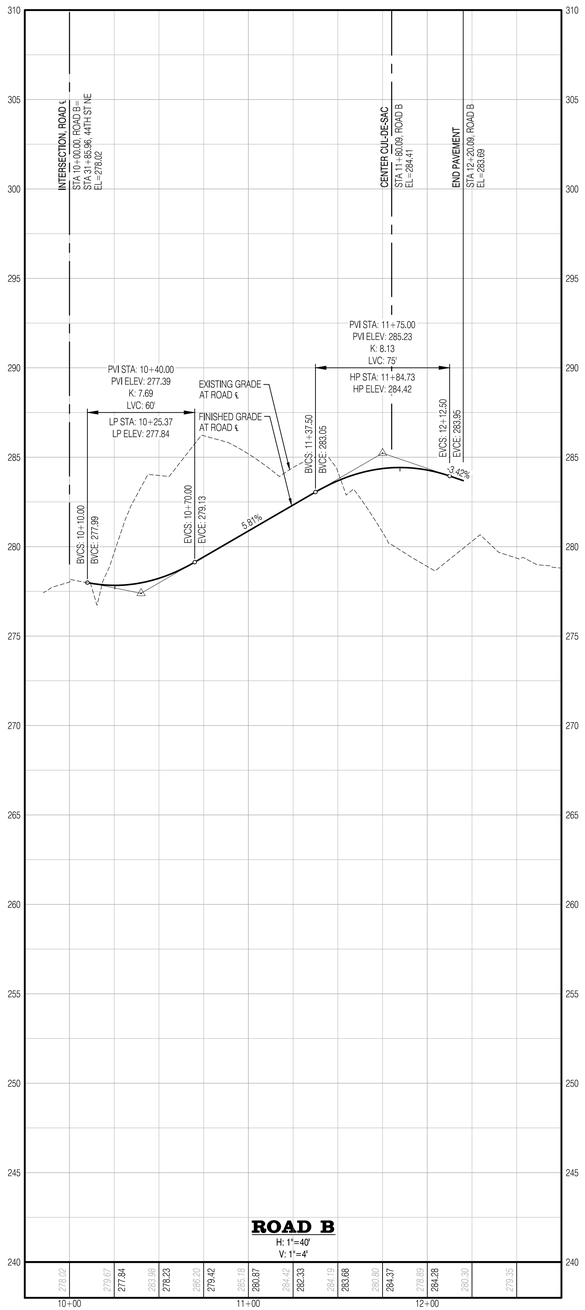
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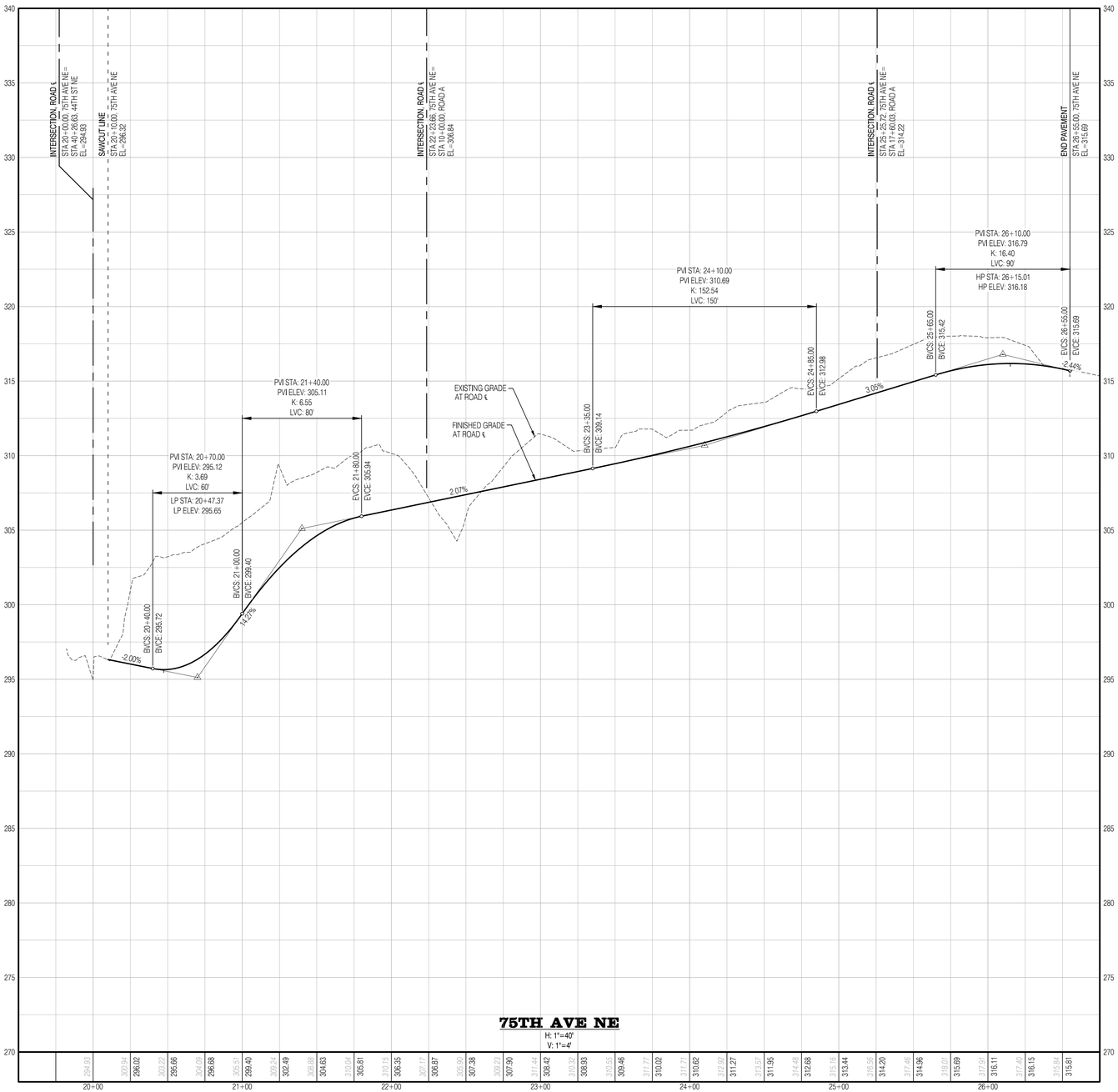
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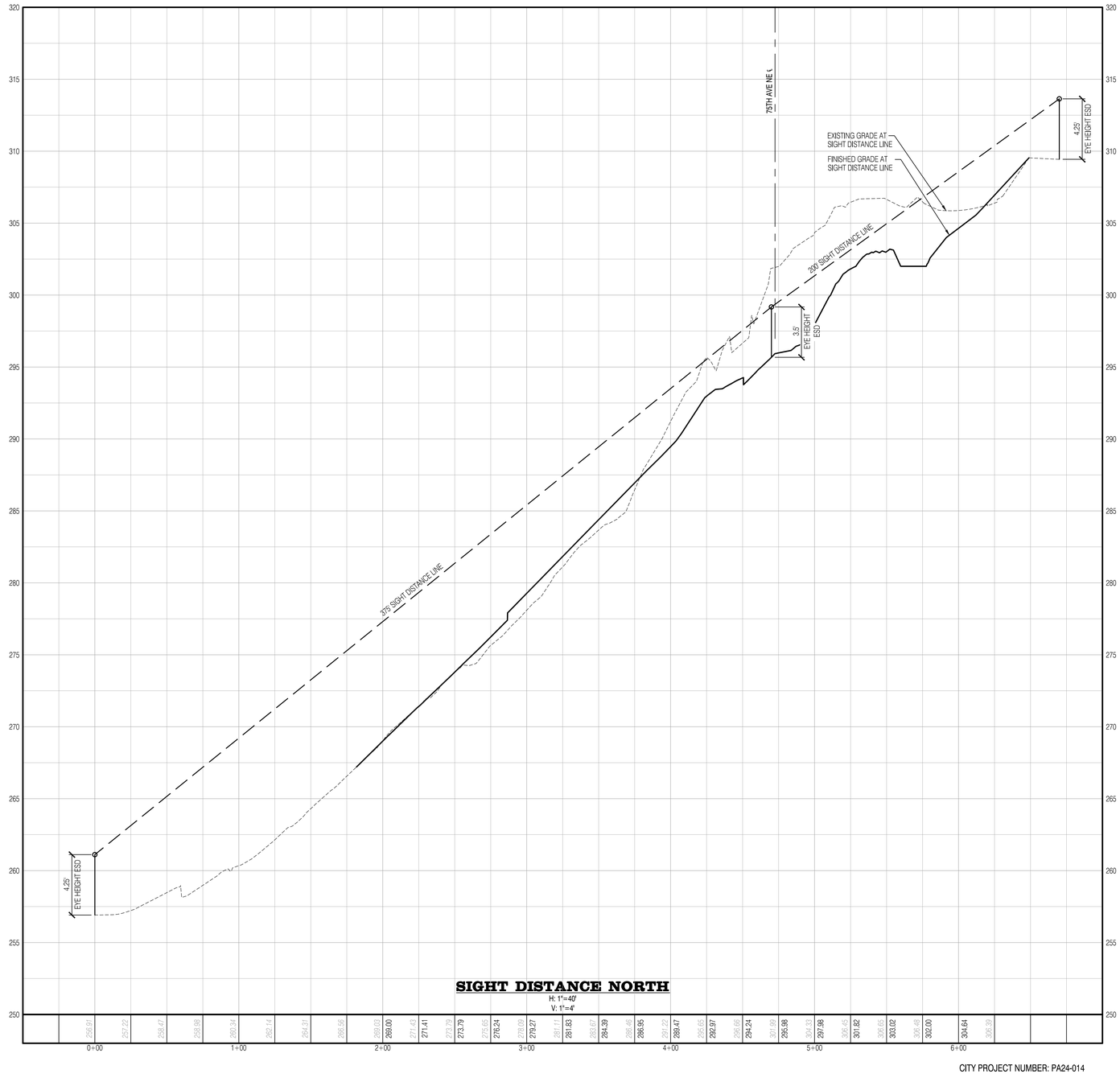
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PR-03

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SIGHT DISTANCE NORTH

H: 1"=40'
V: 1"=4'

CITY PROJECT NUMBER: PA24-014

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PRELIMINARY ROAD PROFILES

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

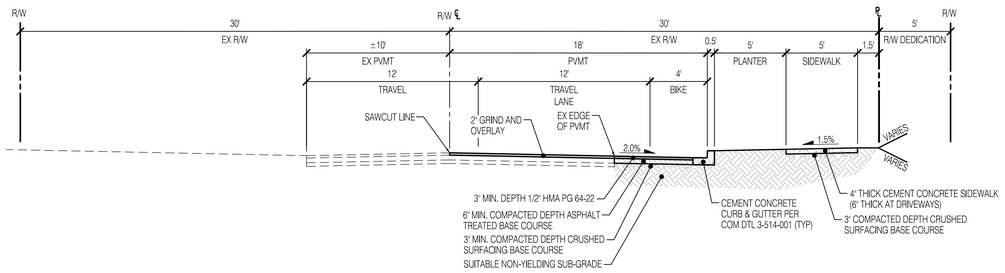
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PR-04

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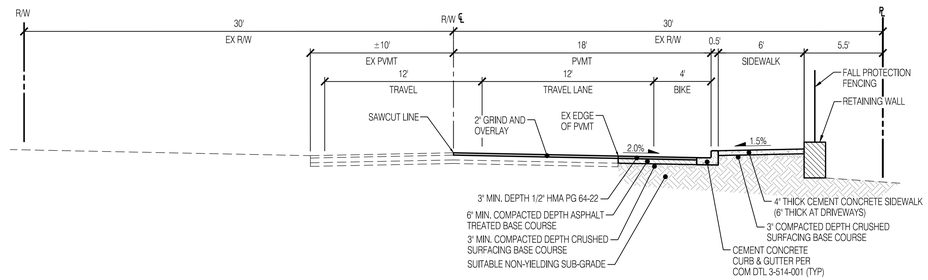
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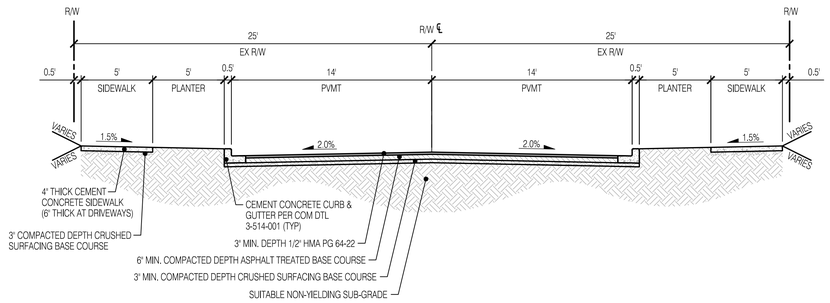
44TH ST NE ROAD SECTION STA 37+63 TO 41+34

SCALE: 1"=5'



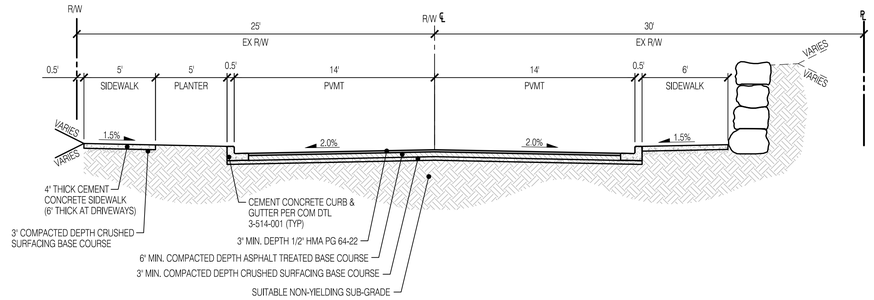
44TH ST NE ROAD SECTION STA 34+21 TO 37+63

SCALE: 1"=5'



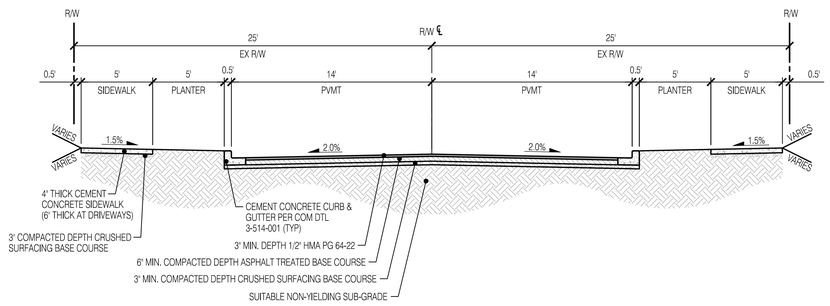
ROAD A ROAD SECTION

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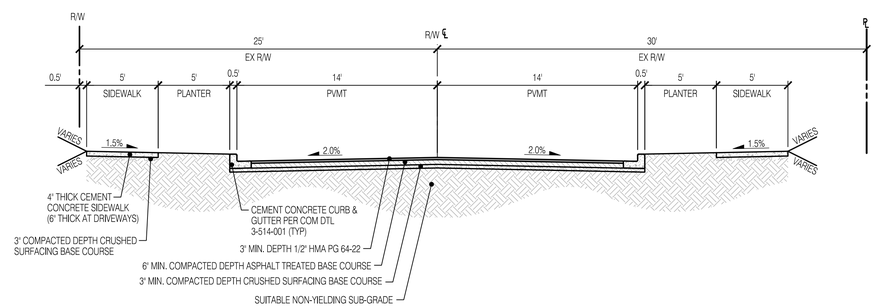
75TH RD NE ROAD SECTION STA 20+00 TO STA 22+88

SCALE: 1"=5'



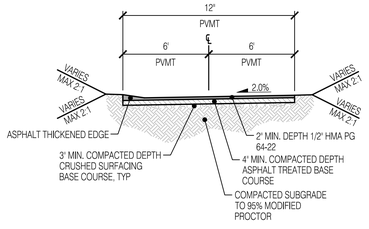
ROAD B ROAD SECTION

SCALE: 1"=5'



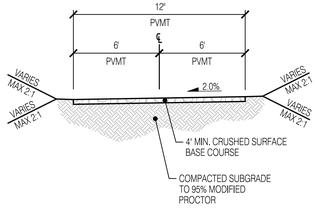
75TH RD NE ROAD SECTION STA 22+88 TO 26+50

SCALE: 1"=5'



POND ACCESS - TRACT 998 AND 996

SCALE: 1"=5'



SEWER MAINTENANCE ROAD SECTION

SCALE: 1"=5'

CITY PROJECT NUMBER: PA24-014

UTILITY NOTE

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Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

ROAD SECTIONS

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

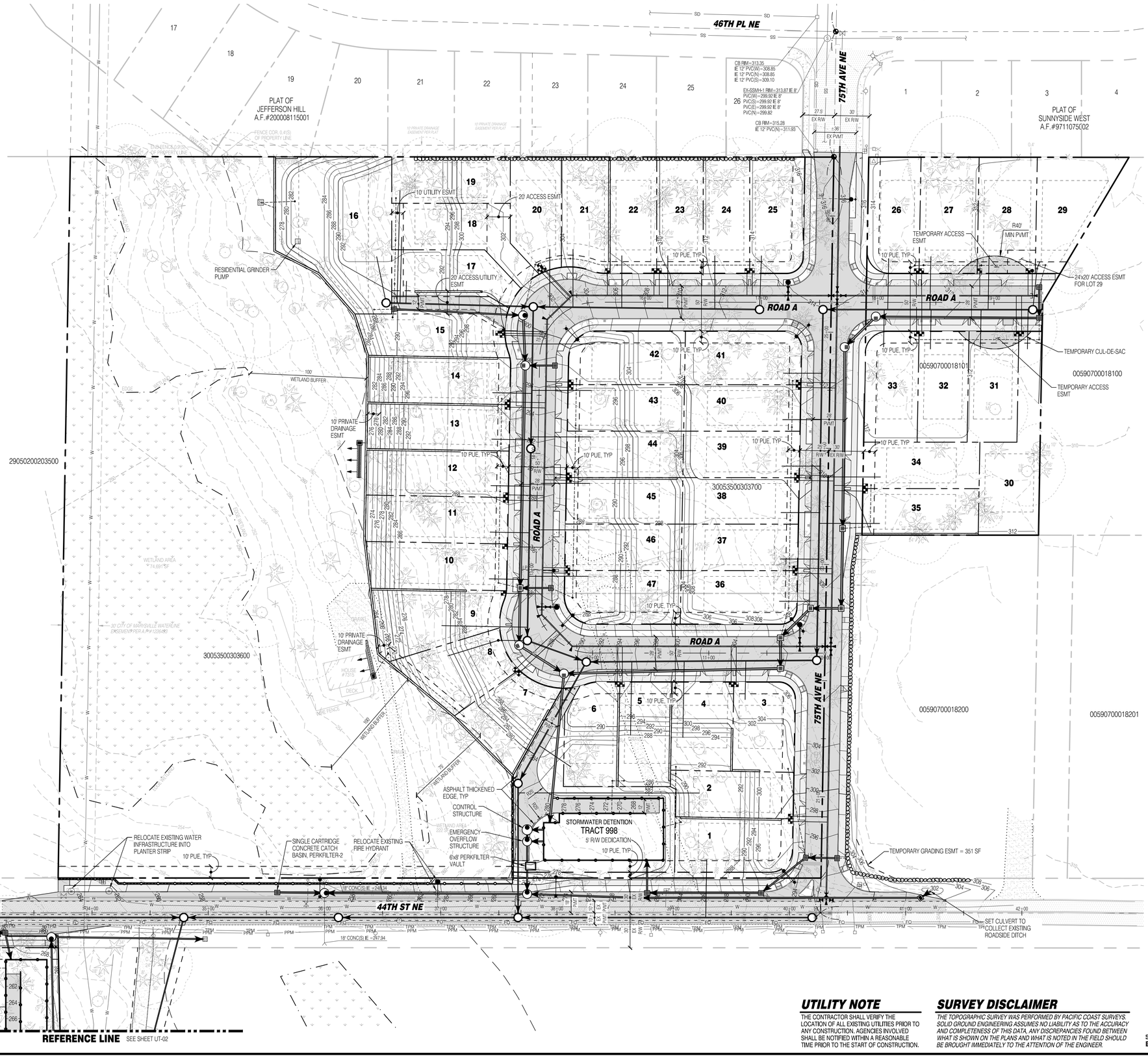
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PR-05

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N

0 40 80

LEGEND

SYMBOLS	DESCRIPTION
	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	PROPOSED STREET LIGHT
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING
	STORM MAIN PIPE
	SEWER MAIN PIPE
	WATER MAIN PIPE
	DRAIN PIPE
	FRENCH DRAIN
	FIRE HYDRANT
	SEWER MANHOLE
	SEWER CLEANOUT
	TYPE 1 CATCH BASIN W/ SOLID LID
	TYPE 1 CATCH BASIN W/ OPEN GRATE
	TYPE 2 CATCH BASIN, SOLID LID
	TYPE 2 CATCH BASIN W/ OPEN GRATE
	STORM CLEAN OUT

NOTES

1. LOTS 16 AND 17 WILL REQUIRE RESIDENTIAL FIRE SPRINKLERS.

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PRELIMINARY UTILITY PLAN

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

CITY PROJECT NUMBER: PA24-014

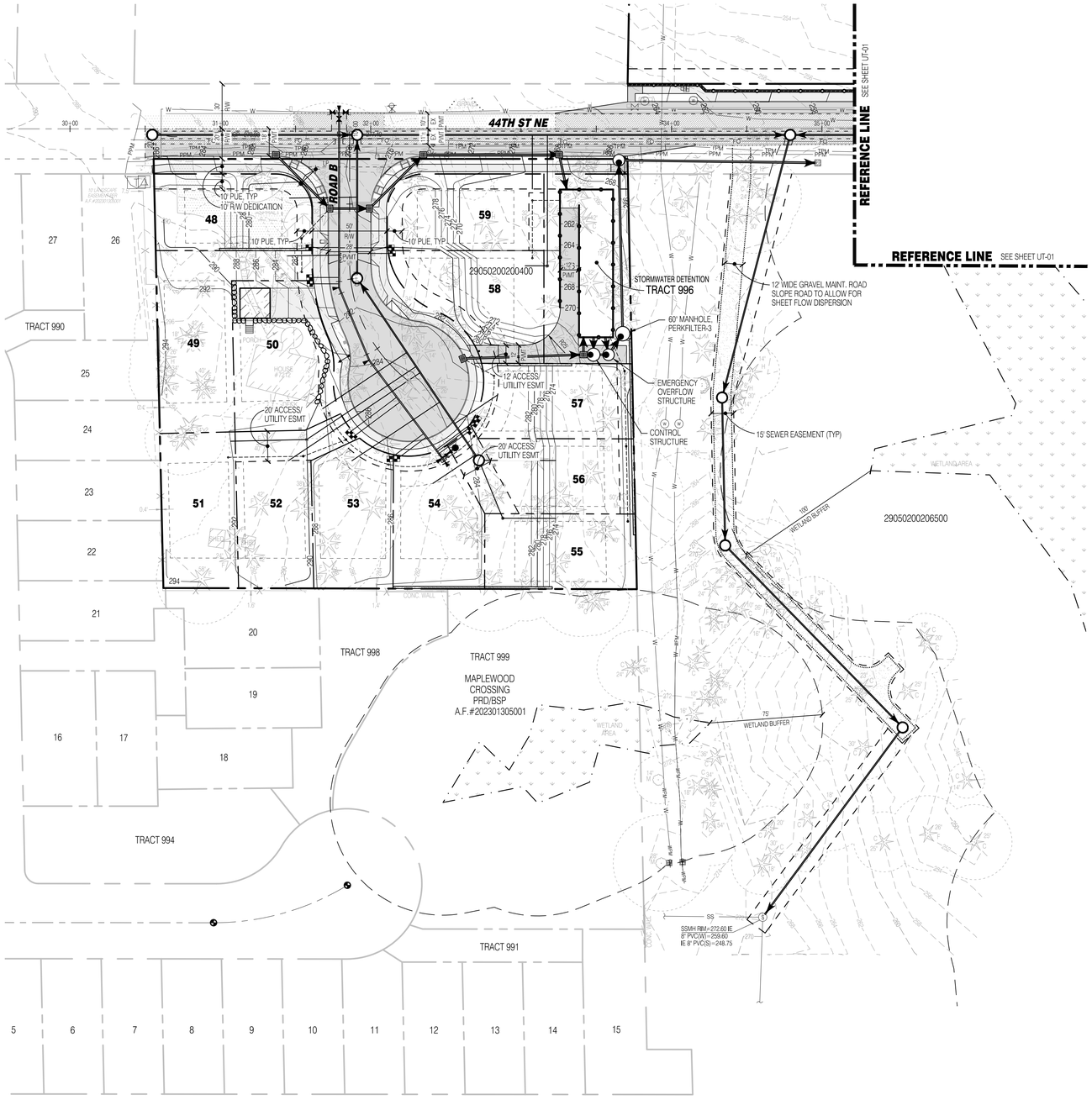
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UT-01

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N

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	PROPOSED STREET LIGHT
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	ASPHALT GRIND AND OVERLAY
	CONCRETE PAVEMENT
	FALL PROTECTION FENCING
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PRELIMINARY UTILITY PLAN

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

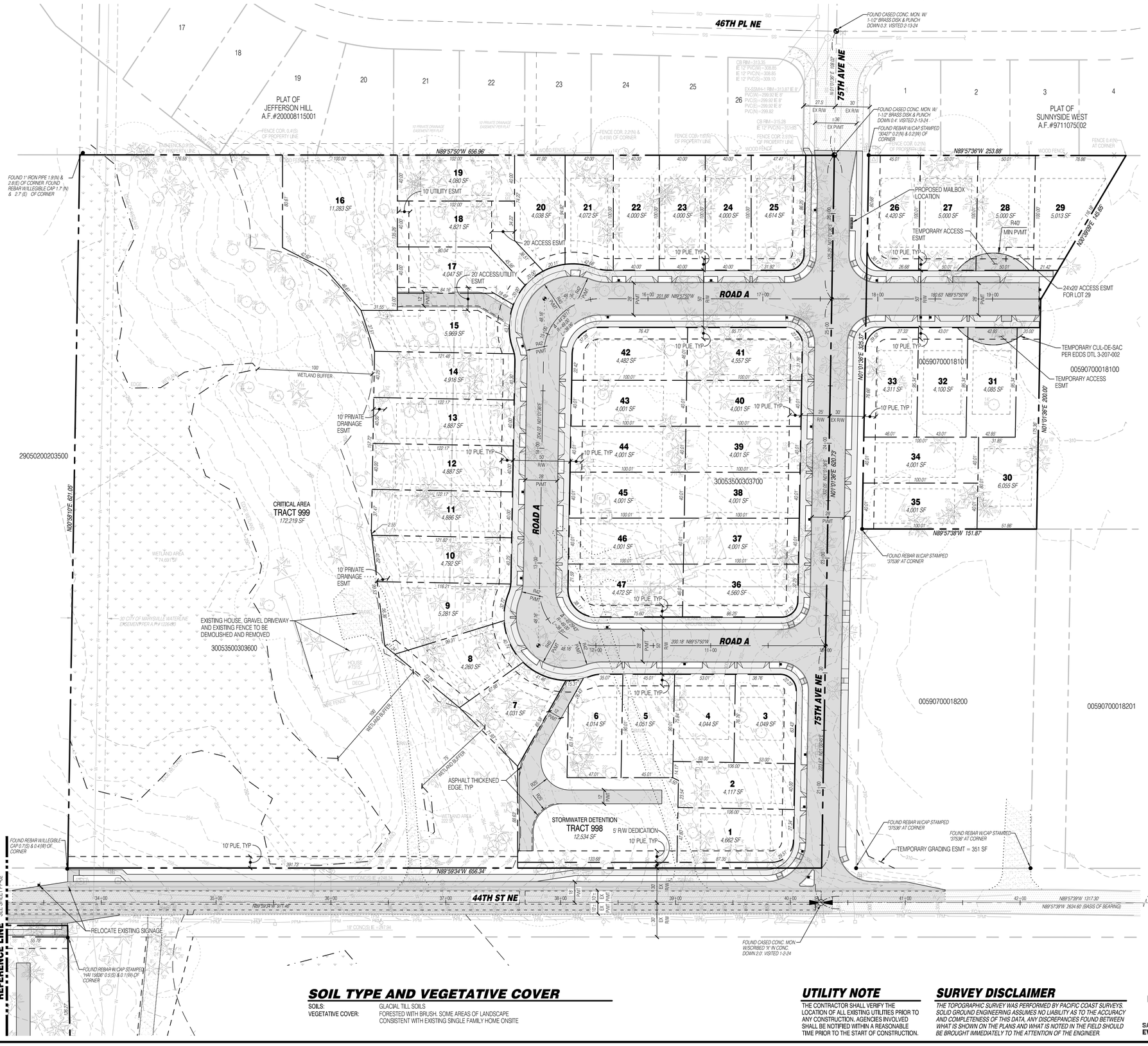
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LEGEND

SYMBOLS	DESCRIPTION
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	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY

PROJECT INFORMATION

TAX PARCELS:	30053500303600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
PROPOSED LAND USE:	DETACHED SINGLE FAMILY HOMES
FUTURE LAND USE: (PER COMP PLAN)	URBAN LOW RESIDENTIAL
PROPOSED LOTS:	59 LOTS
BUILDING SETBACKS:	20' FRONT 5' SIDE 20' REAR
WATER:	CITY OF MARYSVILLE
SEWER:	CITY OF MARYSVILLE
POWER:	SNOHOMISH COUNTY PUD
GAS:	PUDGET SOUND ENERGY
TELEPHONE:	FRONTIER
CABLE:	COMCAST
SCHOOL DISTRICT:	MARYSVILLE SCHOOL DISTRICT #25
FIRE DISTRICT:	MARYSVILLE FIRE DISTRICT RFA

DENSITY CALCULATIONS

ZONE (DENSITY):	R-6.5
GROSS AREA:	570,000 SF (13.09 AC)
FLAT 20% DEDUCTION:	114,000 SF (2.62 AC)
NET AREA:	456,000 SF (10.47 AC)
ALLOWABLE DENSITY:	10.47 x 6.5 DU/AC = 68 LOTS
LOTS PROPOSED:	59 LOTS

NOTES

1. LOTS 16 AND 17 WILL REQUIRE RESIDENTIAL FIRE SPRINKLERS.

SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

UTILITY NOTE

THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. AGENCIES INVOLVED SHALL BE NOTIFIED WITHIN A REASONABLE TIME PRIOR TO THE START OF CONSTRUCTION.

SURVEY DISCLAIMER

THE TOPOGRAPHIC SURVEY WAS PERFORMED BY PACIFIC COAST SURVEYS. SOLID GROUND ENGINEERING ASSUMES NO LIABILITY AS TO THE ACCURACY AND COMPLETENESS OF THIS DATA. ANY DISCREPANCIES FOUND BETWEEN WHAT IS SHOWN ON THE PLANS AND WHAT IS NOTED IN THE FIELD SHOULD BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.

811 SAFETY IS IN YOUR HANDS. EVERY DIG. EVERY TIME.

CITY PROJECT NUMBER: PA24-014

THOMAS P. ARBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS
1	7-26-24	REVISED PER CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY PLAT MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

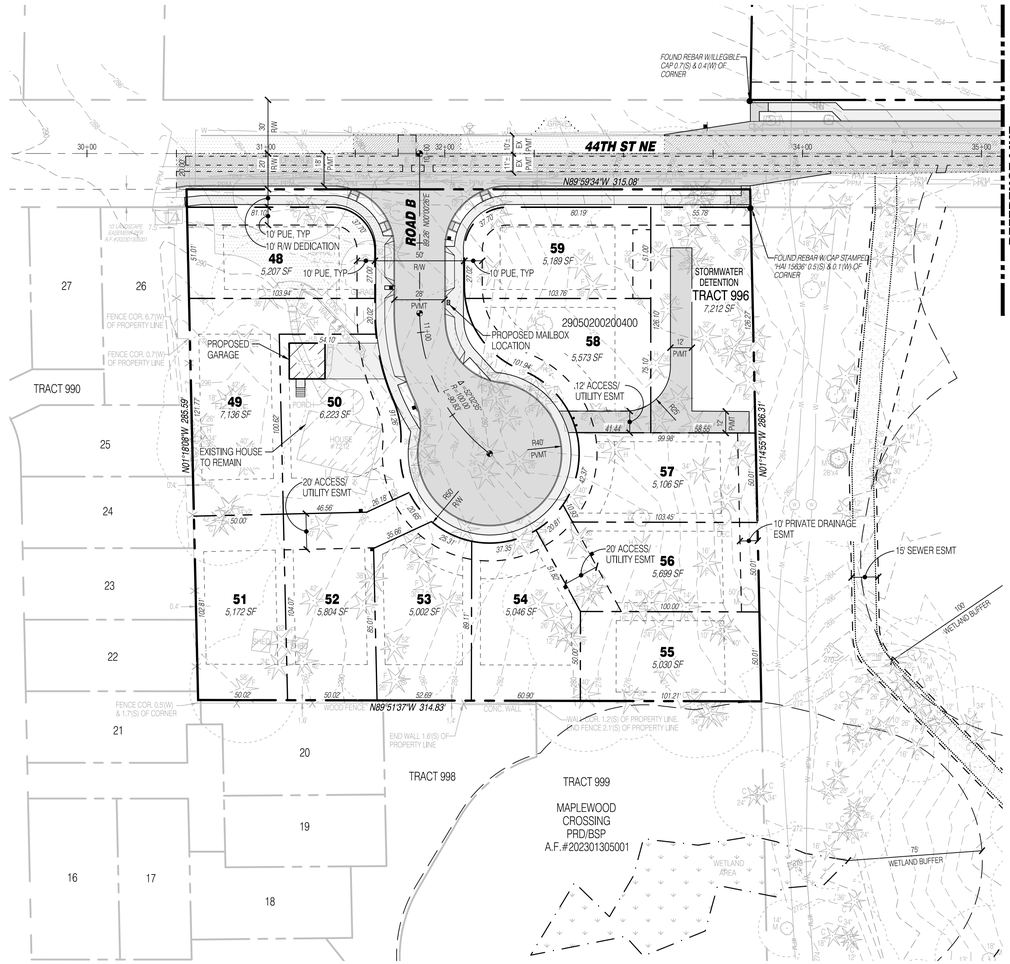
MARYSVILLE, WASHINGTON

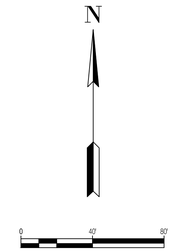
DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

PP-01
4 OF 14

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NW 1/4, NE 1/4, SEC. 2, T. 29N, R5E / SE 1/4, SW 1/4, SEC. 35, T. 30N, R5E / SW 1/4, SE 1/4, SEC. 35, T. 30N, R5E, W.M. SNOHOMISH COUNTY, WASHINGTON





LEGEND

SYMBOLS	DESCRIPTION
•	REMOVABLE BOLLARD
	PROPOSED SIGNAGE
	RETAINING WALL
	ASPHALT PAVEMENT
	ASPHALT GRIND AND OVERLAY

PROJECT INFORMATION

TAX PARCELS:	30053500303600, 30053500303700, 00590700018101, 29050200200400
SITE ADDRESS:	7315 44TH ST NE MARYSVILLE WA
SITE AREA:	570,000 SF (13.09 AC)
PROPOSED ZONING:	LOTS 1-47 TO UTILIZE R-8 DIMENSIONS, LOTS 48-59 TO UTILIZE R6.5 DIMENSIONS
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NOTES

1. LOTS 16 AND 17 WILL REQUIRE RESIDENTIAL FIRE SPRINKLERS.

CITY PROJECT NUMBER: PA24-014

SOIL TYPE AND VEGETATIVE COVER

SOILS:	GLACIAL TILL SOILS
VEGETATIVE COVER:	FORESTED WITH BRUSH. SOME AREAS OF LANDSCAPE CONSISTENT WITH EXISTING SINGLE FAMILY HOME ONSITE

UTILITY NOTE

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811

SAFETY IS IN YOUR HANDS.
EVERY DIG. EVERY TIME.

THOMAS P. ABBOTT — STATE OF WASHINGTON — 56921 — REGISTERED PROFESSIONAL ENGINEER — 7-26-24

ENGINEER'S STAMP

REVISIONS

#	DATE	DESCRIPTION
1	6-13-24	REVISED PER 1ST CITY PRELIM COMMENTS
1	7-26-24	REVISED PER CITY PRELIM COMMENTS

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

PRELIMINARY PLAT MAP

KEYSTONE LAND, LLC

WILLIAMS POINTE

MARYSVILLE, WASHINGTON

DRAWN BY:	RCR
CHECKED BY:	TPA
DATE:	3-22-24
JURISDICTION:	CITY OF MARYSVILLE
JOB NUMBER:	23-0010

PP-02

5 OF 14

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EST. 1891
MARYSVILLE
WASHINGTON

PUBLIC WORKS DEPARTMENT
80 Columbia Avenue ◆ Marysville, WA 98270
(360) 363-8100 ◆ (360) 363-8284 FAX

July 31, 2024

Solid Ground Engineering
Attn: Tom Abbott
8105 166th Ave NE
Redmond, WA 98052

Re: **Williams Pointe – PA24-014 – *Concurrency Recommendation***

Dear Tom,

Keystone Land, LLC, is proposing the development of a 59-lot single-family residential subdivision of 13.09 acres located along 44th Street NE on an assemblage of parcels with (APN(s): 30053500303600, 30053500303700, 00590700018101, 29050200200400. There are (3) existing residences located on the project site, (2) are proposed to be demolished with (1) being retained.

Based on the Traffic Impact Analysis (TIA) prepared by Kimley Horn, dated April 2024, the proposed development would generate the following Average Daily Trips (ADT), AM peak hour trips (AMPHT), and PM peak hour trips (PMPHT):

USE	**UNITS** (new)	ADT	AMPHT	PMPHT
Land Use Code 210 - Single-Family Detached	56*	537	40	56

** The development proposes 59 lots/units, but credit is given to the (3) existing SFRs; therefore, the development would result in 56 new PMPHT*

Based on our review of existing conditions, as well as other applicable supplemental information submitted with the application, and on file with the City, the following impacts and mitigation obligations are recommended for the Williams Pointe Subdivision:

1. The applicant shall be required to construct frontage improvements along 44th Street NE, 75th Avenue NE, and the new internal plat roads, prior to the recording the final subdivision. Roadway improvements, channelization, site access and lighting plans shall be required to be reviewed and approved by the City Engineer, prior to construction plan approval.

   1.1. 44th Street NE shall be built compliant with SP 3-201-004.

   1.2. 75th Avenue NE and the internal plat roads shall be built compliant with SP 3-202-002.

2. The applicant shall be required to dedicate public right-of-way in order to accommodate the required frontage improvements, in accordance with MMC 12.02A.110(1)(c), *Dedication of Road right-of-way – Required setbacks*. Right-of-way widths and required dedication shall be determined by the City Engineer.

3. In order to mitigate impacts upon the future capacity of the road system, the applicant shall be required to submit payment to the City of Marysville, on a proportionate share cost of the future capacity improvements as set forth in MMC 22D.030.070(3), for the development. **Traffic impact fees shall be vested at a rate of $6,300.00, per PMPHT, totaling $352,800.**

Marysville Municipal Code (MMC) 22D.030.070(1)(d), requires an applicant to make a written proposal for mitigation of a development's traffic impacts to the Public Works Director, prior to finalizing a concurrency determination and conditions of approval. If you have any questions, regarding the developments impacts and recommended mitigation obligations outlined above, please contact Emily Morgan, Senior Planner, at emorgan@marysvillewa.gov or by phone at 360.363.8216.

Sincerely,

Jesse L. Hannahs, PE
Traffic Engineering Manager

cc: Jeff Laycock, PE, PW Director
Max T. Phan, PE, City Engineer
Ken McIntyre, PE, Assistant City Engineer
Haylie Miller, CD Director
Chris Holland, Planning Manager
Joe Long, Keystone Land (applicant)

Keystone Land, LLC
13805 Smokey Pt. Blvd., Suite 102
Marysville, WA 98271
360-659-9444

July 31, 2024

Emily Morgan, Senior Planner
City of Marysville
501 Delta Ave.
Marysville, WA 98270

RE: Williams Pointe - PA 24-014

Dear Emily,

This letter is to confirm Keystone Land's acceptance of the Serenity Trails Concurrency Recommendations per the City of Marysville Public Works letter dated July 31, 2024.

Please contact me if you need any additional information.

Thank you,



Joe Long - EVP
Keystone Land, LLC
Joe@keystoneland.com

MITIGATED DETERMINATION OF NON-SIGNIFICANCE

Community Development Department ◆ 501 Delta Avenue ◆ Marysville, WA 98270
Office Hours: Mon - Fri 8:00 AM - 4:30 PM ◆ Phone: (360) 363-8000

PROJECT INFORMATION			
Project Title	Williams Pointe Subdivision	**File No.**	PA24-014
Detailed Project Description	The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE. The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.		
Location	7315 44th St NE / 7212 44th St NE	**Section Township Range**	35 30N 05EWM
APN(s)	30053500303600, 30053500303700, 00590700018101, 29050200200400		

	OWNER	APPLICANT	CONTACT
Name	See Property Owners List	Keystone Land, LLC	Solid Ground Engineering
Address	(Pg. 3)	13805 Smokey Pt Blvd #102	8105 166th Ave NE #202
City, State, ZIP		Marysville, WA 98271	Redmond, WA 98052

THRESHOLD DETERMINATION

Lead Agency ☒ **City of Marysville**

The lead agency has determined that this proposal does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is NOT required under RCW 43.21C.030(2)(c). This decision was made after review by the City of Marysville of a completed environmental checklist and other information on file with this agency. This information is available for public review upon request.

☐ There is no comment period for this DNS

☐ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on this DNS.

☒ This MITIGATED DNS is issued under WAC 197-11-350; the lead agency will not act on this proposal for 14-days from the date below. Comments must be submitted by: **August 14, 2024.**

SEPA CONTACT			
Name	Emily Morgan	**Title**	Senior Planner
Phone	360.363.8216	**E-mail**	emorgan@marysvillewa.gov

RESPONSIBLE OFFICIAL			
Name	Haylie Miller	**Title**	CD Director
Address	501 Delta Avenue, WA 98270		

Haylie Miller

Haylie Miller, CD Director

July 31 2024

Date

ENVIRONMENTAL IMPACTS	
The proposed construction and subsequent use of the property could result in the following adverse environmental impacts:	
1.	Increase in the amount and rate of stormwater runoff and attendant pollutants from the introduction of paved and building roof surfaces.
2.	Increase in erosion, surface water pollutants, siltation and sedimentation as a result of site preparation and construction.
3.	Increase in demand for police, fire protection, parks and other public services generated as a result of the development.
4.	Increase in noise, dust, light and glare from construction activity and subsequent use of the site.
5.	Increase in vehicular traffic on 44th Street NE and 75th Avenue NE as well as other City streets and arterials in the vicinity.
MITIGATION MEASURES	
The following mitigation measures are required to minimize the probable significant adverse environmental impacts as a result of the proposed development activity:	
1.	Prior to civil construction plan approval, the applicant shall be required to submit a FINAL Geotechnical Assessment, prepared by a Professional Engineer registered in the State of Washington. Additionally, the applicant/contractor shall be required to adhere to the recommendations of the FINAL Geotechnical Assessment. Prior to granting occupancy permits, the applicant shall provide a letter from the project engineer to verify that final project grading has been completed consistent with the approved grading plans; that all recommendations outlined in the Geotechnical Assessment and subsequent amendments have been followed; and that all fill has been properly placed.
2.	If at any time during construction archaeological resources are observed in the project area, work shall be temporarily suspended at that location and a professional archaeologist shall document and assess the discovery. The Department of Archaeology and Historic Preservation (DAHP) and all concerned tribes shall be contacted for any issues involving Native American sites. If project activities expose human remains, either in the form of burials or isolated bones or teeth, or other mortuary items, work in that area shall be stopped immediately. Local law enforcement, DAHP, and affected tribes shall be immediately contacted. No additional excavation shall be undertaken until a process has been agreed upon by these parties, and no exposed human remains should be left unattended.
3.	Prior to issuing any ground disturbing activity permits, the applicant is required to obtain all necessary permits and approvals from Federal, State and local agencies for the proposed critical areas impacts and mitigation.
4.	Prior to any ground disturbing activities, all wetland buffer areas shall be temporarily fenced between the construction activity and the buffer area with highly visible and durable protective barrier(s). Said barriers shall be retained during construction to prevent access and sedimentation from disturbed areas from entering the wetland or its buffer.
5.	The onsite wetland and buffer area that will be retained must be placed in a separate Native Growth Protection Area (NGPA) tract. The boundary of the tract shall be delineated by the installation of City approved fencing and signage.
6.	Prior to final plat approval, all mitigation measures as proposed in the revised Critical Area Study and Buffer Mitigation Plan, prepared by Wetland Resources, Inc , dated July 26, 2024, shall be implemented with final approval by Community Development. Security for performance and/or maintenance of the required mitigation and monitoring shall be in strict compliance with MMC 22E.010.160.
7.	The applicant shall be required to dedicate public right-of-way in order to accommodate the required frontage improvements, in accordance with MMC 12.02A.110(1)(c), Dedication of Road right-of-way – Required setbacks. Right-of-way widths and required dedication shall be determined by the City Engineer.
8.	The applicant shall be required to construct frontage improvements along 44th Street NE, 75th Avenue NE, and the new internal plat roads, prior to the recording the final subdivision. Roadway improvements, channelization, site access

	and lighting plans shall be required to be reviewed and approved by the City Engineer, prior to construction plan approval. • 44th Street NE shall be built compliant with SP 3-201-004. • 75th Avenue NE and the internal plat roads shall be built compliant with SP 3-202-002.
9.	In order to mitigate impacts upon the future capacity of the road system, the applicant shall be required to submit payment to the City of Marysville, on a proportionate share cost of the future capacity improvements as set forth in MMC 22D.030.070(3), for the development. **Traffic impact fees shall be vested at a rate of $6,300.00, per PMPHT, totaling $352,800.**

APPEALS

☒ This (M)DNS may be appealed pursuant to the requirements of MMC 22E.030.180. There is a 14-day appeal period on the DNS that commences from the date the (M)DNS was issued. Any appeal must be addressed to the responsible official, accompanied by a filing fee of $500.00, and be filed in writing at the City of Marysville Community Development Department, 501 Delta Avenue, Marysville, WA 98270. The appeal must be received by 4:30 p.m., **August 14, 2024**. The appeal must contain the items set forth in MMC 22G.010.530.

☐ There is no agency appeal.

DISTRIBUTION

Marysville	Local Agencies & Districts	State & Federal	County	Other
☒ Building ☒ Fire District ☐ Police ☒ PW – Engineering ☒ PW – Operations ☒ PW – Sanitation ☐ PW – Streets ☒ PW – Water Res.	☒ Comcast ☐ Community Transit ☐ Everett (city) ☐ Lake Stevens (city) ☒ Marysville SD 25 ☒ PUD No. 1 ☒ Ziply	☒ US Army Corps of Engineers ☒ DAHP ☒ DOE (Bellevue) ☐ DOE (Register) ☒ WDFW ☐ WSDOT ☒ USDFW	☐ Health District ☐ Planning ☒ Public Works - Land Development ☐ Public Works	☐ Olympic Pipeline ☐ Puget Sound Energy ☒ Stillaguamish Tribe ☒ Tulalip Tribes

PROPERTY OWNERS LIST

TPN: 30053500303600	Adelfia, LLC 1007 Stitch Rd, Lake Stevens, WA 98258
TPN: 30053500303700	Adelfia, LLC 1007 Stitch Rd, Lake Stevens, WA 98258
TPN: 00590700018101	Keystone Land, LLC 13805 Smokey Point Blvd #102, Marysville, WA 98271
TPN: 29050200200400	Lauren Squaglia 7212 44th St NE, Marysville, WA 98270

COMMUNITY DEVELOPMENT DEPARTMENT
501 Delta Avenue ◆ Marysville, WA 98270 ◆ (360) 363-8000

NOTICE OF MITIGATED DETERMINATION OF NON-SIGNIFICANCE AND TRAFFIC CONCURRENCY DETERMINATION

File Number: PA24-014

Project Title: Williams Pointe Subdivision

Applicant: Keystone Land, LLC

Project Contact: Tom Abbott, Solid Ground Engineering
8105 166th Ave NE, Suite 202
Redmond, WA 98052

Project Location: 7315 44th St NE / 7212 44th St NE

APNs: 30053500303600, 30053500303700, 00590700018101, 29050200200400

Leady Agency: City of Marysville – Community Development Department

Scan to View SEPA MDNS

Project Description: The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE.

The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.

SEPA Threshold Determination: The lead agency has determined that this proposal does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is NOT required under RCW 43.21C.030(2)(c). This decision was made after review by the City of Marysville of a completed environmental checklist and other information on file with this agency. This information is available for public review upon request.

Public Comment Period: This MDNS is subject to a 14-day comment period. Written comments may be submitted by mail or e-mail to the lead agency's SEPA contact person. Comments must be received by **AUGUST 14, 2024**.

Appeals: This MDNS may be appealed pursuant to the requirements of MMC 22E.030.180. Any appeal must be accompanied by a filing fee of $500.00, and be filed in writing at the City of Marysville Community Development Department, 501 Delta Avenue, Marysville, WA 98270. The appeal must be received by 4:30 p.m., by **AUGUST 14, 2024**. The appeal must contain the items set forth in MMC 22G.010.530.

SEPA Contact: Emily Morgan
(360) 363-8216
emorgan@marysvillewa.gov

Date Issued: **JULY 31, 2024**

THIS NOTICE IS NOT TO BE REMOVED CONCEALED OR DESTROYED

MARYSVILLE
COMMUNITY DEVELOPMENT

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that open record public hearing will be held before the Hearing Examiner on **Thursday, August 29th at 6:00 PM** at 501 Delta Avenue, 2nd Floor – Council Chambers for the following proposal:

File Number: PA 24-014

Project Title: Williams Pointe Subdivision

Applicant: Keystone Land, LLC

Project Agent: Tom Abbott, Solid Ground Engineering
8105 166th Ave NE, Redmond, WA 98052

Project Location: 7315 44th St NE

APN(s): 30053500303600, 30053500303700, 00590700018101, 29050200200400

Scan to View Project Materials

Project Description:

The applicant is proposing a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE.

Open Record Public Hearing: The public hearing will take place in person at **501 Delta Avenue, 2nd Floor – Council Chambers** and via Zoom/teleconference. The Hearing Examiner and the City's project manager will attend in person; however, other staff, the applicant, and the public may attend either in person or via Zoom.

- Anyone wishing to provide written or verbal public comment must pre-register by the staff contact listed below by ***noon on Wednesday, August 28th.*** If you wish to provide verbal public comment, you will need to provide your name, address, e-mail and phone number.
- **Meeting Link: https://us06web.zoom.us/j/83916662589?pwd=4uxyrOyxzdsnFnMAOeVCvBb395ECc9.1**
  - **Passcode:** 915095
- To listen to the meeting without providing public comment:
  - **Dial in:** 1.253.215.8782
  - **Meeting ID:** 839 1666 2589

Document Availability: http://docs.marysvillewa.gov/htcomnet/public/?folder=74a9ab27

For Project Information: **Emily Morgan, Senior Planner - 360.363.8216 or emorgan@marysvillewa.gov**
Community Development Department, 501 Delta Ave, Marysville, WA 98270

THIS NOTICE IS NOT TO BE REMOVED CONCEALED OR DESTROYED

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Region Office
PO Box 330316, Shoreline, WA 98133-9716 • 206-594-0000

August 14, 2024

Emily Morgan, Senior Planner
Community Development Department
City of Marysville
501 Delta Ave
Marysville, WA 98270

Re: Williams Pointe Subdivision
File# PA24-014, Ecology SEPA# 202403281

Dear Emily Morgan:

Thank you for the opportunity to provide comments on the State Environmental Policy Act (SEPA) mitigated determination of nonsignificance (MDNS) for the Williams Pointe Subdivision project. Based on review of the checklist associated with this project, the Department of Ecology (Ecology) has the following comments:

Ecology's Dam Safety Office (DSO) has regulatory authority over dams that impound 10 acre-feet of water or more per WAC 173-175-020 (1) [https://app.leg.wa.gov/WAC/default.aspx?cite=173-175-020].

Any impoundments that meet or exceed this threshold criteria require a permit to be submitted per RCW 90.03.350 (https://apps.leg.wa.gov/RCW/default.aspx?cite=90.03.350).

Contact the DSO at damsafety@ecy.wa.gov to get more information on how to submit a permit application.

Thank you for considering these comments from Ecology. If you have any questions or would like to respond to these comments, please contact the DSO at the email address listed above.

Sincerely,

Kelli Price

Kelli Price
SEPA Coordinator

Sent by email: Emily Morgan, emorgan@marysvillewa.gov

ecc: Samantha Long, Ecology

From: Long, Samantha (ECY)
To: Tom Abbott
Cc: Joe Long; Emily Morgan
Subject: [External!] RE: SEPA Comment - Williams Pointe Project, Marysville WA
Date: Thursday, August 15, 2024 8:38:59 AM
Attachments: image001.png

[CAUTION:] This email originated from outside the City of Marysville. **Do not click links or open attachments** unless you recognize the sender and know the content is safe. Contact helpdesk if you have any concerns or questions.

Hey Tom,

As I mentioned to Emily, due to the preliminary documentation provided in the SEPA, it was difficult to determine if the wetland impoundment met the criteria of a “Dam”. The definition of a dam in the WAC states that "Dam" means any artificial barrier and/or any controlling works, together with appurtenant works that can or does impound or divert water. I mainly placed this comment more as an informational note to the City of Marysville and developer. As well as to provide a point of contact in the future.

If you are stating that the retaining walls are not holding back any water, then there is likely no need for DSO involvement.

Thank you,
Samantha Long
Dam Safety & Well Section Manager, Water Resources
WA State Department of Ecology
Office: 360-407-6603; Cell: 360-972-4426| samantha.long@ecy.wa.gov

This communication is a public record and may be subject to disclosure as per the Washington State Public Records Act, RCW 42.56.

From: Tom Abbott <tabbott@solidgroundPNW.com>
Sent: Thursday, August 15, 2024 8:20 AM
To: Long, Samantha (ECY) <salo461@ECY.WA.GOV>
Cc: Joe Long <joe@cornerstonehomes.com>; Emily Morgan <emorgan@marysvillewa.gov>
Subject: RE: SEPA Comment - Williams Pointe Project, Marysville WA

External Email

Hello Samantha,

Are you asking for us to estimate the amount of groundwater that will be discharged from the retaining walls via the wall drains? We can do an estimate on what the flow is, I guess, but that's a request that I've never seen nor heard of and we do walls like this all the time. They're not intended to hold back any water so there's no way of calculating any storage since that number would be zero.

Thanks!

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

Tom Abbott, PE
Principal Civil Engineer
C: 425.281.8324
O: 425.305.5104
Email: tabbott@solidgroundpnw.com
SolidGroundPNW.com

From: Long, Samantha (ECY) <salo461@ECY.WA.GOV>
Sent: Thursday, August 15, 2024 8:17 AM
To: Tom Abbott <tabbott@solidgroundPNW.com>
Cc: Joe Long <joe@cornerstonehomes.com>; Emily Morgan <emorgan@marysvillewa.gov>
Subject: RE: SEPA Comment - Williams Pointe Project, Marysville WA

Good Morning Tom,

I don't have the site plans in front of me, but I do believe I remember the ponds listed on the plans. I thought it did state that they would be less than the 10 acre-feet threshold. The main concern was the wetland on site that is to be retained with retaining walls along the outer buffer that would include outfalls to feed the wetland. Is there any way you to get an estimate.

Thank you,
Samantha Long
Dam Safety & Well Section Manager, Water Resources
WA State Department of Ecology
Office: 360-407-6603; Cell: 360-972-4426| samantha.long@ecy.wa.gov

DEPARTMENT OF ECOLOGY
State of Washington

This communication is a public record and may be subject to disclosure as per the Washington State Public Records Act, RCW

42.56.

From: Tom Abbott <tabbott@solidgroundPNW.com>
Sent: Thursday, August 15, 2024 7:48 AM
To: Long, Samantha (ECY) <salo461@ECY.WA.GOV>
Cc: Joe Long <joe@cornerstonehomes.com>; Emily Morgan <emorgan@marysvillewa.gov>
Subject: SEPA Comment - Williams Pointe Project, Marysville WA

External Email

Hello Samantha,

Attached is a SEPA comment we received on the Williams Pointe project in Marysville that came from your office regarding the thresholds for dam safety and potential permitting.

Im the engineer of record on the project and have information regarding the thresholds. Would you be the person to coordinate with regarding this issue? The City of Marysville (our project planner, Emily Morgan is CC'd) will need to see our coordination on this item in order to fully process City permitting.

I believe the comment is in regard to the two proposed concrete-walled detention ponds associated with the project, is it not? The letter wasn't exactly clear on whether it was related to our proposed ponds or not, but that's my assumption. Each of the two ponds falls far beneath the 10 AC-FT storage volume threshold listed in the comment letter and is therefore exempt from any permitting requirements with DOE related to dam safety. For reference, the total volume of the larger pond (we call it the East Pond) is 1.3 AC-FT and the smaller pond (the West Pond) is 0.4 AC-FT. Let me know if you need anything else in order to verify that we are exempt such as a letter to this effect or a snip from our drainage report or plans with this information.

A reply to the fact that we are exempt on these thresholds from someone in your office with Emily CC'd on that response would be very much appreciated.

Thanks for your help and your time!

Thanks!

Solid Ground Engineering
8105 166th Ave NE
Redmond, WA 98052

Tom Abbott, PE
Principal Civil Engineer
C: 425.281.8324
O: 425.305.5104
Email: tabbott@solidgroundpnw.com
SolidGroundPNW.com

From: todd conway
To: Emily Morgan
Subject: [External!] road extension 73rd st ne
Date: Wednesday, May 8, 2024 5:55:08 PM

You don't often get email from toddconway47@gmail.com. Learn why this is important

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Good afternoon was told to reach out to you about the plans to extend 73st from 40th st ne to 44st ne. Neighborhood is asking what the purpose will be and how it will affect our neighborhood through traffic.When will construction start and finish. if you would be so kind to send me info so i can pass on to the concerned parents and residence. thank you have a good day

From: Dennis O"Brien
To: Emily Morgan
Subject: [External!] Comments on PA24-014
Date: Sunday, May 19, 2024 4:34:18 PM

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Hello Emily,

I would like to make several comments on the proposed development along 75th Ave NE and 44th St NE (PA24-014). The postcard I received in the mail seemed to direct me to make my comments to Tom Abbott of Solid Ground Engineering but did not give me either phone number nor email address for him. I am submitting my comments to you directly but will also ask you to send me his contact information if I need to submit them to him as well.

For your information, I own the property that abuts the development on the east side of the portion that is east of the proposed extension of 75th Ave NE.

My comments are:

1. Is there a requirement for recreational open space for a project this size?
   Many of the developments that have been going in in this area have recreational (e.g. basketball, Frisbee golf, groomed grass, etc) open space. There are no recreational facilities close by so It seems that this one would include some.
2. Are street parking and street width acceptable?
   Most of the developments end up with cars parked wherever it is not disallowed. From the looks of RG-01 of the civil plans it looks like the majority of the 75th Ave extension will allow parking on the east side. This might be okay but the width of 75th has been decreased from 36' to 28'. If 75th gets filled with parked cars on the east then two way traffic will be hindered to the point of needing to take turns. You should consider widening 75th to 36' for it's entire length.
3. How deep will the sewer at the east end of the "Road A" stub?
   By setting the depth a little deeper that the minimum the new sewer will be able to service a large part of the property to the east eliminating the need for a future lift station.
4. Roadway line-of-site (LOS) issues:
    1. 75th Ave looking east to 44th St NE:
        1. Sheet RG-01 gives the LOS as 200'. Where did this number come from? Chapter 1260 of document M22-01.21 gives criteria on stopping sight distances. I'm not sure if this is the controlling document but it is a WSDOT document. In any event, paragraph 1260.03(1)(b) gives the Design Stopping Sight Distance of 250' for a 35 mph road (which is the speed limit on 44th St NE). In addition, chapter 1260.03(2) gives the effect of grade. The grade of 44th St NE just east of the proposed 75th Ave NE intersection is ~-8% which increases the 35mh distance to between 271' and 287'.
        2. 44th St NE is a straight shot for about a mile. The proposed intersection is right in the middle. Even though the speed limit on 44th St NE is 35 mph the practical speed is somewhat higher. 35mph should be considered a minimum as many cars are traveling at 40mph or more.

2. 75th Ave just north of 44th St looking north:
    1. There are two proposed lots (1 & 2) that have driveways on 75th Ave just north of 44th St. Assuming that 75th will be a 25mph road we see that the stopping sight distance is 155' (again, from chapter 1260 of document M22-01.21) and, from sheet PR-03 the grade just north of 44th on 75th Ave approaches -10% which increases this to 173' (again, from chapter 1260.03(2)). While I am not sure if this is the correct application of the stopping sight distances it does seem that these two driveways will be at risk for accidents. Is there sufficient LOS here?
5. Adding slope to neighbor's property:
   In order to achieve the proposed 200' LOS east on 44th St NE sloped grading is proposed on the property the the east of 75th Ave NE (owned by Greg Williams). This grading will add slope to about 20' of his property on the west and 10' on the south. To achieve ~280' (see 4.1 above) this may even need to be more. This is a slope that he will likely need to maintain forever. As I look at the road and grading plan RG-01 I see that the developer proposes numerous retaining walls throughout the property to maintain level plots - a major benefit. It seems that that courtesy should be extended a neighbor whose property he is affecting. by replacing the proposed slope with an additional retaining wall. I believe that Williams should end up with a level piece of property that is easily maintained.
6. There may be a way to mitigate items 4 and 5 above by not allowing 75th Ave NE to intersect 44th St NE:
    1. This eliminates the LOS issue with 44th St (4.1.1 above).
    2. That proposed portion of 75th Ave NE that proceeds south of the southernmost Road A intersection could be turned into a driveway rather that a street. This eliminates the LOS issue on 75th Ave (4.1.2 above)
    3. If the driveway proposed in 6.2 did not slope as much as the proposed extension of 75the Ave this could minimize any sloping required on the Williams property and perhaps constrain it to just the current easement. This eliminates or minimized the sloping/retaining wall issue (5 above).
7. There are several large cedar trees along the west edge of the O'Brien property (my property) that I would like to be preserved.
   I'm not sure what needs to be done here but I'm sure that the roots of these trees extend onto the proposed development and I'd like to see a plan to make sure they are not damaged (at least too much).
8. I would like to have a fence built along the west edge of my property by the developer.

Regards,
Dennis O'Brien
425.350.1899

From: Danielle Gallacher
To: Emily Morgan
Subject: [External!] PA24-014
Date: Tuesday, May 28, 2024 7:01:51 AM
Attachments: image.png

You don't often get email from dani.hanson4@gmail.com. Learn why this is important

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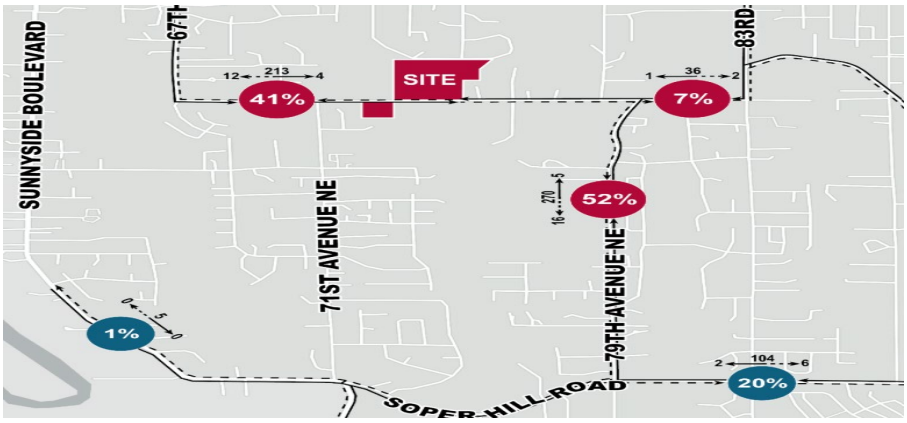
Hi Emily,

My name is Danielle Gallacher and I live off 44th St NE. We received the notice in the mail regarding project PA24-014 and wanted to connect and learn more about how we are supporting the infrastructure to make everyone moving in and the long-term owners can enjoy our homes.

While I personally am sad to see so many properties in a short period of time turn over to incredibly large neighborhoods, I understand that our area is growing, and the Whiskey Ridge Projection has been in place since 2007. I also understand this is a way a city can receive funding from the state to support housing in Washington. While the force of change is necessary, I hope the consideration of the environment and logistics of traffic are being considered.

I am very happy to see that this development will not be able to take a left out at 44th as the hill and low visibility would ultimately end in many traffic accidents. We have at times many drivers going well over the speed limit race down 44th and it was a concern of mine. I was confused why there are no traffic projections for 71st Ave NE. I believe the development will still be able to take a right out of the neighborhood on to 44th and that is how I get to Sunnyside Blvd is via 71st Ave NE. Which also has a new project the Farm PA23-032. Along with another new project, PA23005 the traffic impact seems to be greater in the upcoming years than what is being projected.

I am concerned how the intersection of SoperHill and Sunnyside Blvd will be able to accommodate all these new developments and wonder if there are any new traffic measures being planned for this intersection. Coming North on Sunnyside Blvd in the afternoons can be a long wait as everyone attempts to go through the 4 way stop sign intersection.



I was also wondering if there have been any past impacts to well systems with the increase in development. Our house as well as 7 other homes rely on the well to support our households. Do we know if anyone in the area has had a negative impact on their well after many neighborhoods were constructed?

Thank you for your time and looking forward to connecting.
Warm Regards,
Danielle
206-465-3883

STAFF RECOMMENDATION

Community Development Department ◆ 501 Delta Avenue ◆ Marysville, WA 98270
Office Hours: Mon - Fri 8:00 AM - 4:30 PM ◆ Phone: (360) 363-8000

PROJECT INFORMATION			
Project Title	Williams Pointe Subdivision	**Date of Report**	August 21, 2024
File Number	PA24-014	**Attachments**	Public Hearing Exhibits 1-38
Administrative Recommendation	Approve the Preliminary Subdivision for the creation of (59) single family lots.		

BACKGROUND SUMMARY									
Applicant	Keystone Land, LLC / Solid Ground Engineering								
Request	The applicant has requested approval of a 59-lot subdivision of approximately 13.09 acres; an existing residence is to be retained on proposed Lot 50. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE.								
SEPA Status	MDNS issued July 31, 2024								
Site Address	7315 44th St NE/7212 44th St NE			**APN**(s)	30053500303600, 30053500303700, 00590700018101, 29050200200400				
Legal Description (abbreviated)	See Title Report (Exhibit 024)			**Section**	35	**Township**	30	**Range**	05E
Comprehensive Plan	SFH	**Zoning**	R-6.5	**Shoreline Environment**	N/A				
Water Supply	**Current**: Marysville	**Proposed**: Marysville		**Sewer Supply**	**Current**: Private (septic)		**Proposed**: Marysville		

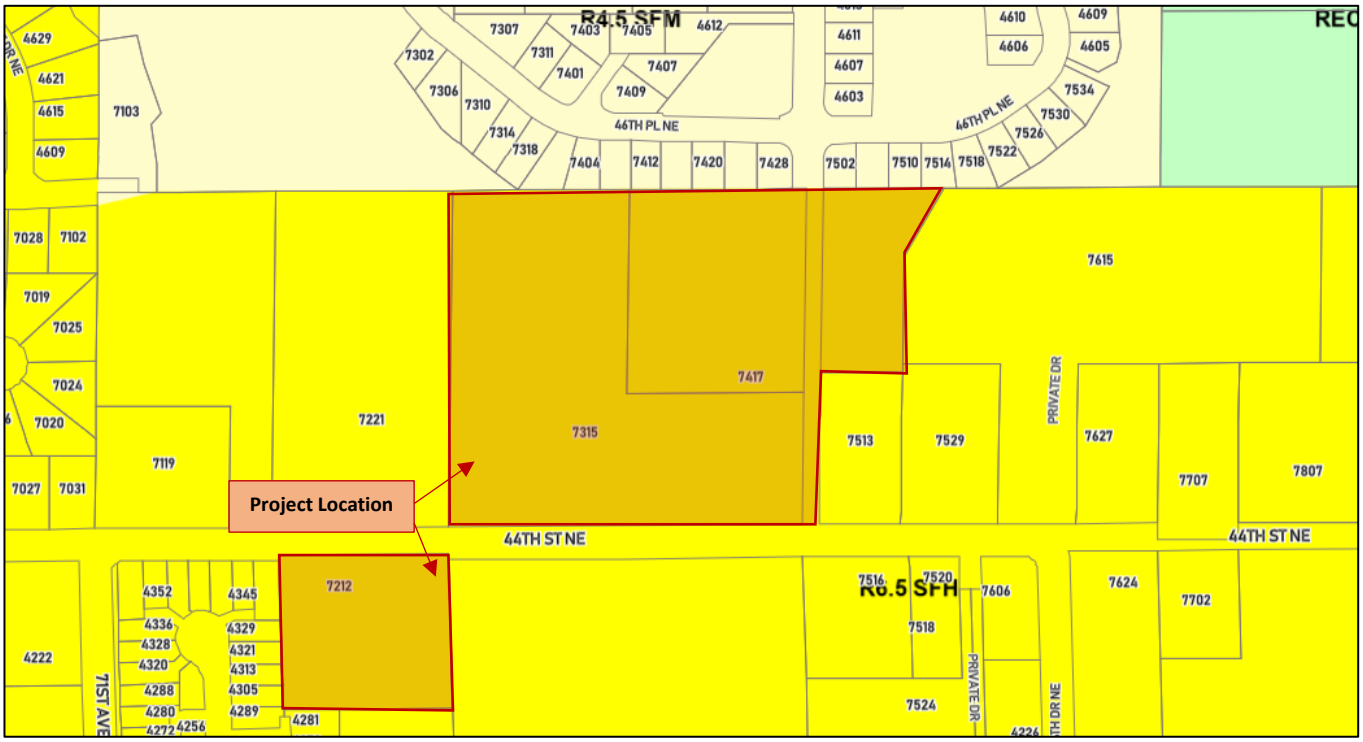
REVIEWING AGENCIES				
Marysville	**Local Agencies**	**State & Federal**	**County**	**Other**
☒ Building ☐ Parks ☐ Police ☒ PW – Dev. Services ☒ PW – Engineering ☒ PW – Operations ☐ PW – Solid Waste ☒ PW – Streets ☒ PW – Traffic Eng. ☒ PW – Water Res. ☒ PW – WWTP	☐ Arlington (city) ☐ Community Transit ☐ Everett (city) ☒ Comcast ☒ Marysville SD #25 ☒ PUD No. 1 ☒ Ziply	☒ US Army Corps of Engineers ☐ BNSF ☒ DAHP ☒ DOE ☐ WDFW ☐ WSDOT ☐ USDFW	☐ Health District ☐ Planning ☒ Public Works - Land Development ☐ Public Works	☐ Olympic Pipeline ☐ Puget Sound Energy ☒ Tulalip Tribes ☒ Stillaguamish Tribe

ACTION				
☐ **Administrative**	☐ **City Council**	☒ **Quasi-Judicial**	☐ **Planning Commission**	
Date of Hearing	August 29, 2024	☐ **Approved**	☐ **Denied**	☐ **Continued**

STAFF			
Name Emily Morgan	**Title** Senior Planner	**Phone** 360.363.8216	**E-mail** emorgan@marysvillewa.gov

SURROUNDING USES			
	Comprehensive Plan	**Zoning**	**Land Use**
North	Single Family Medium Density	R-4.5	Jefferson Hill Subdivision; single family residential
East	Single Family High Density	R-6.5	Single family residential on larger lots
South	Single Family High Density	R-6.5	Single family residential on larger lots
West	Single Family High Density	R-6.5	Single family residential on larger lots; Maplewood Crossing PRD

Vicinity Map



General Commercial
Downtown Commercial
Community Business
Neighborhood Business
Mixed Use
88 - Mixed Use
General Industrial
Light Industrial
R28 Multi-Family High
R18 Multi-Family Medium
R12 Multi-Family Low
R6-18 Multi-Family Low
R8 Single Family High Small Lot
R6.5 Single Family High
R4-8 Single Family High
R4.5 Single Family Medium
Public-Institutional
Recreation
Open

FINDINGS AND CONCLUSIONS

1. **Description of Proposal.** An application was submitted for a Preliminary Subdivision for the construction of 59-lot detached single family residential lots. Lots 1 - 47 are proposed on parcels north of 44th St NE with Lots 48 - 59 located on a parcel south of 44th St NE.

   The subject property contains Category II and Category III wetlands with Category II and Category III wetlands located just off-site. The applicant has the intent of using buffer width averaging to accommodate the proposed development; compensatory mitigation via buffer enhancement is proposed.

   1.1. Major subdivisions require a quasi-judicial decision action; therefore, a public hearing is required per MMC 22G.090.

2. **Project Location.** The proposed development is an assemblage of (4) parcels, located at 7315 44th St NE and 7212 44th St NE and is identified as Assessor's Parcel Numbers (APNs) 30053500303600, 30053500303700, 00590700018101, and 29050200200400

3. **Site Description.** The project site is approximately 13.09 acres in size and currently developed with single-family residences and accessory buildings. An existing residence is to be retained on proposed Lot 50, while other existing structures on the project site are to be removed with development. Most of the site contains tree growth, while the areas near the houses were cleared and contain grass coverage. Site topography of the larger portion of the site north of 44th St NE consists of generally flat slopes descending to the west-southwest. The smaller portion of the site south of 44th St NE slopes gently to the east. There is a large wetland on the western portion of the main project site.

4. **Project History.** A pre-application request (PreA 24-002) was submitted on January 11, 2024 with comments provided to the applicant, dated February 2, 2024.

   4.1. There was a previous application submitted for a similar project at this location (PA22-024) which went null and void due to inactivity by the applicant and the subsequent sale of the site.

5. **Letter of Completeness.** A letter of completeness was issued May 1, 2024 and provided to the applicant in accordance with MMC 22G.010.050.

6. **Public Notice.** Public notice of the development application was provided in accordance with MMC 22G.010.090. No public comments were received for the Notice of Application.

   6.1. The public hearing for the proposed request was advertised in accordance with MMC 22G.010.110, *Notice of public hearing.*

7. **Request for Review.** A Request for Review of the proposed development was sent to the Local, County, State & Federal Agencies and Districts identified on page 1 of this report. The following comments were received; if above-referenced agencies are not listed below, no comments were received:

	Nature of Comment
Public Works, Traffic	• *Requirements and recommendations are addressed in the approved Traffic Concurrency Recommendation, dated July 31, 2024.*
Public Works, Development Services	• *Provided information regarding the required improvements which are to be further reviewed with Civil Plan Review.*

	• *The project is vested under the 2019 Stormwater Management Manual for Western Washington. Formal drainage review will be conducted during Civil Plan Review.* • *Capital facility fees would be required to be paid prior to issuance of the building permit.*
Marysville Fire District	• *Some lots will require 13D sprinkler systems due to access and distance from ROW.* • *Fire hydrants shall be provided along the new and existing roadways at approved locations, at all intersections and with maximum spacing of 600 ft. apart. The location of fire hydrants requires fire marshal approval on civil construction plans.* • *"NO PARKING - FIRE LANE" signs are required on both sides of all roads that are 26 feet wide or less. The signage shall be identified on the approved Civil Plans.*
Building Department	*Provided requirements for the building permit submittal.*
Snohomish County Public Works	*Snohomish County Public Works concurs with the distribution and the conclusion that this development will not impact any county capital improvement projects or county road with three or more directional peak hour trips. Therefore, no mitigation and no offer are required of this development to the county under the county/city interlocal agreement.*
Public Works, Surface Water	*Provided stormwater review guidance and informed of the need for the development to be compliant with the 2019 Stormwater Management Manual for Western Washington.*
Public Works, Operations	*Provided water connection standards and requirements.*
Snohomish County PUD	• *Snohomish County PUD has adequate system capacity to serve the proposed development, but upgrades may be needed. Securing of easements for the necessary utilities would be required, if applicable.* • *The PUD requires a minimum 14 ft. clearance from any structure to accommodate workers, scaffolding, and ladders. Minimum worker safety clearance from 115kC transmission wires is 20 ft.*
Tulalip Tribes	*There were concerns over discrepancies in wetland reports that had been conducted for this site as the category rating for Wetland A became less restrictive. However, after the applicant submitted a supplemental report explaining for the category rating change, the Tribe was satisfied with the reasoning.*

8. **Public Comments.** The following comments have been received to date and are included as Exhibit 38:

8.1. Todd Conway provided concern over increased traffic due to the road extension along with how long construction will take.

8.2. Dennis O'Brien provided comments relating to increased traffic, street parking, details regarding the sewer extension, sight distance issues coming/going out of development, and tree retention.

8.3. Danielle Gallacher voiced concern on the increased traffic as a result of this development, along with safety concerns for traffic entering onto 44th St NE due to historical vehicle speeds.

The applicant addressed these concerns in the Resubmittal Letter (Exhibit 022). Further, staff finds that as conditioned, these concerns will be mitigated.

9. **State Environmental Policy Act Review.** A State Environmental Policy Act (SEPA) Mitigated Determination of Non-Significance (MDNS) was issued on July 31, 2024. The appeal period expired August 14, 2024; no appeals were filed.

   9.1. Comments were received August 14, 2024, from the WA Department of Ecology regarding potential impoundment of water on site.

   Correspondence between the applicant and the WA Department of Ecology have determined that this site is not anticipated to exceed the threshold of water impoundment requiring a permit (Exhibit 036 and 037).

10. **Critical Areas.** Based on the updated Critical Area Study and Buffer Mitigation Plan (Exhibit 028), prepared by Wetland Resources, Inc., dated July 26, 2024, the project site contains Category II and Category III wetlands. On the portion of the project located south of 44th St NE, there are (2) off site wetlands that would be impacted by this development. The off site wetlands are described as Wetland C, a Category II wetland and Wetland D, a Category III wetland. Per MMC 22E.010.100, the Category II wetlands (Wetland A and C) requires a 100 ft. buffer and the Category III wetlands (Wetland B and D) requires a 75 ft. buffer.

    To accommodate the proposed development, the applicant is proposing buffer width averaging within the outer portions of the buffers of Wetlands A, B, and C per MMC 22E.010.100(5). An existing mobile home, gravel driveway, and maintained yard within the buffer of Wetlands A and B will be removed and restored with native plantings. As allowed per MMC 22E.010.100(10), a stormwater dispersion trench is to be installed within the outer portion of the Wetland A buffer. Further, to service this development, a sewer line extension, stemming from south of 44th St NE is required. Said extension would occur over a parcel owned by the City of Marysville, which includes Wetlands C and D; therefore, sewer easements along with buffer reductions are needed to complete the sewer line extension.

    To mitigate for the direct and indirect impacts of this development, the applicant is proposing a net buffer area increase of 2,080 sq. ft. (2,105 sq. ft. reduced with 4,185 sq. ft. added). Being as the buffer reduction for the sewer line extension are off site and located within a narrow sewer easement, buffer addition adjacent to Wetland C could not be provided; therefore, buffer addition is proposed for the on-site Wetland A.

11. **Access and Circulation.** Access to northern portion of the development is proposed through the extension and connection of 75th Ave NE along with the construction of a new internal roadways off the 75th Ave NE extension. Access to the southern portion of the development would be through the construction of a new internal road and cul-de-sac. Said internal roads are to be 50 ft. of right of way and constructed to EDDS SP 3-202-002, which requires 28 ft. of pavement with 5 ft. sidewalks and 5 ft. landscape strips along both sides.

12. **Traffic Impacts.** A traffic impact analysis (TIA) was prepared by Kimley Horn, dated April 2024. According to the TIA, the proposed development would generate approximately 537 Average Daily Trips (ADT), 40 AM peak hour trips (AMPHT), and 56 PM peak hour trips (PMPHT). There are 59-single family lots proposed to be constructed. Credit is given to the (3) existing single-family units, this includes the residence to be retained; therefore, credit would be given to Lots 1- 2 and the development would result in 57 new units.

The City's Traffic Engineering Manager reviewed the TIA, and issued a written concurrency recommendation dated July 31, 2024 (Exhibit 031), informing the developer of the project's impacts and mitigation obligation pursuant to MMC 22D.030, *Traffic Impact Fees and Mitigation*. Pursuant to MMC 22D.030.070(1)(d), an applicant is required to make a written proposal for mitigation of traffic impacts based on the concurrency recommendation. The applicant accepted the requirements outlined in the traffic concurrency recommendation on July 31, 2024 (Exhibit 032).

13. **Utilities.** Per MMC 14.03.250, utilities are to be extended along the street frontages of the proposed project. Extensions of sewer and water mains as well as a storm drain system for the roadway extension will be required. The following utilities will be provided to the site:

- ***Storm Drainage:*** According to the Preliminary Drainage Report, prepared by Solid Ground Engineering, dated April 2024 (Exhibit 007), the project is designed to comply with the Department of Ecology 2019 Stormwater Management Manual for Western Washington. All new impervious and pervious surfaces would be collected and treated/detained on site via detention ponds located in Tract 996 and 998.
- ***Water:*** The applicant is proposing to tie into the existing 8-inch ductile iron water main within 44th St NE and extend the line through the new internal plat road and the extension of 75th Ave NE.
- ***Sewer:*** The applicant is proposing to tie into the existing 6-inch PVC main through the City of Marysville site, running north/south, then turn east/west up 44th St NE to serve the project site north of 44th St NE.

14. **Park Impacts.** Pursuant to MMC 22D.020, the applicant shall mitigate City of Marysville parks impacts through payment of the park impact fee in effect at the time of building permit application.

15. **School Impacts.** Pursuant to MMC 22D.040, the applicant shall mitigate Marysville School District No. 25 impacts through the payment of the school impact fee in effect at the time of building permit application.

16. **Application Review.** MMC 22G.010.140(3) requires the City to determine whether or not the project is consistent with the following items described in the applicable plans and regulations:

16.1. *Type of land use permitted at the site, including uses that may be allowed under certain circumstances, such as planned residential development and conditional uses, if the criteria for their approval have been satisfied.*

Staff Comment: The proposed subdivision is for the creation of single family residential lots. Per MMC 22C.010.060, single family detached units are permitted outright in the High Density Single Family (R-6.5) zone; therefore, the proposed development would comply with this provision.

16.2. *Density of residential development in urban growth areas.*

Staff Comment: The base density allowed in the R-6.5 zone is 6.5 dwelling units per acre. Per MMC 22C.010.080(2) and MMC 22C.010.090(1)(b), the maximum net density is the same as the base density, in this case, 6.5 dwelling units per acre.

Per the site plan of record (Exhibit 030), the applicant calculated that the net project area as 10.47 acres (456,000 sq. ft.) per the definition of "Net Project Area" of MMC 22A.020.150.

BASE DENSITY – 6.5 DU/Acre	10.47 acres x 6.5 DU/Acre = **68 units/lots**
TOTAL UNITS PROPOSED	**59 UNITS**

16.3. *Availability and adequacy of public facilities identified in the Comprehensive Plan.*

Staff Comment: The Comprehensive Plan designation for the subject property is High Density Single Family. The proposed development and subsequent use of the property would be consistent with the pertinent development policies outlined in the Marysville Comprehensive Plan and is located within the East Sunnyside Neighborhood Planning Area 4.

Planning Area 4 demonstrates that adequate water and sewer is available to this development and is located within the Marysville School District.

The following development policies outlined in the Comprehensive Plan that are specifically pertinent to the overall subdivision request, and were used to establish appropriate conditions, are as follows:

- **LAND USE ELEMENT – Policies:** LU-3, LU-5, LU-6, LU-20, LU-21, LU-23, LU-28, LU-29, LU-30, LU-31, LU-33, LU-34, LU-38, LU-42
- **HOUSING ELEMENT – Policies:** HO-18, HO-19, HO-22, HO-25, HO-30, HO-32, HO-37
- **ENVIRONMENTAL ELEMENT – Policies:** EN-20, EN-21, EN-26, EN-27, 28, EN-29, EN-30, EN-32, EN-40, EN-41
- **TRANSPORTATION ELEMENT – Policies:** T-3, T-7, T-8, T-25, T-26, T-27, T-29, T-30, T-40, T-41, T-46, T-47, T-48
- **UTILITIES ELEMENT – Policies**: UT-1, UT-3, UT-8, UT-9, UT-10, UT-14
- **PUBLIC FACILITIES & SERVICES ELEMENT – Policies:**
  - **Police, Fire, Library:** PS-1, PS-10, PS-11
  - **Schools:** SC-6
  - **Water, Sewer, Storm Drainage, Solid Waste:** PF-1, PF-2, PF-7, PF-9, PF-10, PF-19, PF-20, PF-23, PF-26, PF-28

Staff finds that the proposed development, as conditioned, is consistent with the City of Marysville Comprehensive Plan.

16.4. *Development Standards*

Staff Comment: The project site is currently zoned R-6.5. The R-6.5 zone allows single-family residences at base density of 6.5 dwelling units per acre.

Due to the presence of critical areas, the applicant is utilizing MMC 22E.010.360 which allows the transfer of density attributable to the critical area and associated buffer to another noncritical portion of the same site. The bulk and dimensional standards of the next highest zoning may be utilized to accommodate the transfer of density; therefore, the portion of the development north of 44th St NE may be designed to meet the dimensional standards of the R-8 zone as outlined in MMC 22C.010.080. The portion of the development south of 44th St NE would still be subject to the dimensional standards of the R-6.5 zone given that there are no wetlands present on that parcel.

The proposed development and subsequent use of the property would comply with the intent of the R-6.5 and R-8 zone, and as conditioned herein, complies with all of the applicable design and development standards outlined in Title 22, *Unified Development Code*.

As conditioned, the proposed development makes appropriate provisions for the public use and interest, health, safety and general welfare.

17. **Hearing Examiner – Required Findings.** MMC 22G.010.170(3) requires that the Hearing Examiner not approve a proposed development without first making the following findings and conclusions:

17.1. *The development is consistent with the comprehensive plan and meets the requirements and intent of the Marysville Municipal Code.*

Staff Comment: The Comprehensive Plan designation for the subject property is High Density Single Family. The proposed development and subsequent use of the property would be consistent with the pertinent development policies outlined in the Marysville Comprehensive Plan and the intent of the Marysville Municipal Code, as conditioned herein.

17.2. *The development makes adequate provisions for open space, environmentally sensitive areas, drainage, streets and other public ways, transit stops, water supply, sanitary wastes, public utilities and infrastructure, parks and recreation facilities, playgrounds, sites for schools and school grounds.*

Staff Comment: Based on a review of the preliminary plat map and application materials, the development makes adequate provisions for open space, environmentally sensitive areas, drainage, streets and other public ways, transit stops, water supply, sanitary wastes, public utilities and infrastructure, parks and recreation facilities, playgrounds, sites for schools and school grounds.

17.3. *The development is beneficial to the public health, safety and welfare and is in the public interest.*

Staff Comment: Per Finding 16, the proposed subdivision would be beneficial to the public health, safety and welfare and would be in the public interest as the subdivision has been designed in accordance with applicable Marysville Municipal Code requirements.

17.4. *The development does not lower the level of service of transportation and/or neighborhood park facilities below the minimum standards established within the comprehensive plan. If the development results in a level of service lower than those set forth in the comprehensive plan, the development may be approved if improvements or strategies to raise the level of service above the minimum standard are made concurrent with the development. For the purpose of this section, "concurrent with the development" is defined as the required improvements or strategies in place at the time of occupancy, or a financial commitment is in place to complete the improvements or strategies within six years of approval of the development.*

Staff Comment: As conditioned, the development would not lower the level of service of transportation and/or neighborhood park facilities below the minimum standards established within the comprehensive plan.

17.5. *The area, location and features of land proposed for dedication are a direct result of the development proposal, are reasonably needed to mitigate the effects of the development, and are proportional to the impacts created by the development.*

Staff Comment: As conditioned, the area, location and features of land proposed for dedication are a direct result of the development proposal, are reasonably needed to

mitigate the effects of the development, and are proportional to the impacts created by the development.

18. **Preliminary Subdivision Review, Public Hearing – Elements Considered.** MMC 22G.090.130 requires the hearing examiner provide a basis for approval or disapproval of a proposed subdivision, as follows:

18.1. ***Public Use and Interest.*** *Evaluation of the proposed subdivision to determine whether the public use and interest are served by permitting the proposed subdivision.*

Staff Comment: After evaluation of the application materials and other supporting documentation available to the City, staff concludes that, as conditioned, the public use and interest are served by the proposed subdivision.

18.2. ***Public Health, Safety and General Welfare****. Evaluation of the proposed subdivision to determine whether the public health, safety and general welfare have been served.*

Staff Comment: After evaluation of the application materials and other supporting documentation available to the City, staff concludes that, as conditioned, the public health, safety and general welfare have been served and that the subdivision is consistent with the requirements of RCW 58.17.110.

18.3. ***Comprehensive Plan.*** *Evaluation of all elements of the comprehensive plan and its consistency with the proposed subdivision.*

Staff Comment: The proposed subdivision and development of the parcel relate to all elements of the Comprehensive Plan. Compliance with the various elements of the Comprehensive Plan is specifically demonstrated in Finding 16.3.

18.4. ***Existing Zoning****. Evaluation of existing zoning and its compliance with the proposed subdivision and MMC 22G.090, Article V, Land Division Requirements.*

Staff Comment: The existing zoning and its compliance with the proposed subdivision and Article V of this chapter, Land Division Requirements has been evaluated. Compliance with specific zoning regulations is demonstrated in Finding 16.2.

18.5. ***Natural Environment.*** *Evaluation of the impacts and provision for mitigation of all impacts on all elements of the natural environment including topography, vegetation, soils, geology and all environmental issues as defined in the State Environmental Policy Act, Chapter 197-11 WAC, and MMC 22G.090, Article V , Land Division Requirements.*

Staff Comment: As required by the issued MDNS, the applicant must mitigate for impacts as a result of this development. Further, staff reviewed impacts on all elements of the natural environment including topography, vegetation, soils, geology, and all environmental issues, and determined compliance with MMC 22G.090, Article V, Land Division Requirements, as conditioned herein.

Drainage. *Evaluation of all drainage impacts and provisions made for mitigation of all drainage impacts as defined in the city's drainage codes, and MMC 22G.090, Article V, Land Division Requirements.*

Staff Comment: All drainage impacts have been evaluated, and adequate provisions have been made to mitigate for all drainage impacts as defined in the City's drainage codes, and MMC 22G.090, Article V, Land Division Requirements.

18.6. ***Open Space.*** *Evaluation of all impacts and provision for open space as defined in MMC 22G.090, Article V, Land Division Requirements.*

Staff Comment: As a condition of final subdivision, the applicant must submit copies of restrictions and covenants for the maintenance of the common open space areas pursuant to MMC 22G.090.240.

Further, no division or redivision of land shall be approved unless appropriate provisions are made for, but not limited to, the public health, safety and general welfare, relating to open space, drainage ways, streets, alleys, other public ways, water supplies, sanitary wastes, parks, school facilities and other standards as may be required by this title.

18.7. ***Public Systems Capacity****. Evaluation of all impacts and provisions made for mitigation of impacts on public systems including parks, schools, and community facilities as defined in MMC 22G.090, Article V, Land Division Requirements.*

Staff Comment: The applicant is required to pay mitigation fees for each new dwelling unit in accordance with MMC 22D.020 and MMC 22D.040 in order to mitigate potential impacts on parks, schools, and community facilities.

18.8. ***Public Services****. Evaluation of all impacts and provisions made for mitigation of impacts on public services including streets, all public utilities, and fire and police protection as defined in MMC 22G.090, Article V, Land Division Requirements.*

Staff Comment: The proposed subdivision would construct streets providing appropriate access and circulation to all proposed new lots. Public utilities are to be extended to serve all new units in accordance with City standards. Appropriate improvements for fire safety in accordance with the city's fire code would be provided. Capital improvement fees are required to be collected for water, sewer, and stormwater.

18.9. ***Floodplain.*** *Identification of subdivisions proposed in the floodplain and compliance with requirements of this chapter and MMC 22E.020, Floodplain Management.*

Staff Comment: The project is not located within an identified floodplain; therefore, this provision would not apply.

RECOMMENDATION

Based on the foregoing findings and conclusions, review of the application materials and other supporting documentation available to the Community Development Department, and the City's regulatory authority to implement the policies, standards, and regulations of the Marysville Comprehensive Plan and Marysville Municipal Code, the Community Development Department respectfully recommends that the Hearing Examiner ***APPROVE*** the proposed Preliminary Subdivision, subject to the following conditions:

1. The preliminary configuration (Exhibit 030) shall be the approved plat configuration. The final subdivision shall be processed in strict compliance with the provisions of Article III Final Subdivision Review and Article V Land Division Requirements of MMC 22G.090.

2. The final plat shall be approved and recorded within 5 years of the date of preliminary approval. A 2-year extension may be granted in accordance with MMC 22G.090.170.

3. Prior to final subdivision approval, the applicant shall submit to the City for its approval, covenants, deed restrictions, homeowners' association bylaws, and other documents providing for preservation and maintenance of all common open space, parking areas, walkways, landscaping, signs, lights, roads, and community facilities consistent with MMC 22G.090.240. All common areas and facilities shall be continuously maintained at a minimum standard at least equal to that required by the City and shall be approved by the City at the time of initial occupancy. Said restrictive covenants shall also include provisions to address parking enforcement and a statement from a private attorney as to the adequacy of the covenants to fulfill the requirement of the subdivision.

4. Lots 16 and 17 will require residential fire sprinklers due to distance from right of way.

   4.1. Future homes to be constructed may require residential sprinkler installation, including: if homes are three or more stories tall, if fire flow from hydrants does not meet fire code requirements, if any part of homes is further than 200 ft. from the public road right of way with no hydrant provided on-site, or to mitigate access deficiencies.

5. Any lots under 5,000 sq. ft. must demonstrate compliance with MMC 22C.010.310, Small lot single family dwelling development standards, prior to building permit issuance.

6. Per MMC 22G.090.580, a 6 ft. sight obscuring fence shall be required if: during grading plan review, the existing grade will be increased by a 2 ft. or greater vertical grade change and the grade increase causes the new lots to be at a higher elevation than the abutting property.

7. Per MMC 22G.090.570(2), the applicant shall demonstrate tree retention of the significant trees and provide a recommendation from a certified arborist for the trees evaluated to be retained. If said recommendation determines that it is not feasible or desirable to retain significant trees, then a planting plan to provide effective replacement of the removed significant trees shall be required.

8. All ground disturbing activities shall be in strict compliance with the approved site plan and as outlined in the approved Critical Area Study and Buffer Mitigation Plan, prepared by Wetland Resources, Inc, dated July 26, 2024 (Exhibit 028), or as amended and approved by Community Development.

9. Prior to recording of the final plat, all mitigation measures as proposed in the approved Buffer Mitigation Plan, shall be implemented with final approval by Community Development. Security for performance and/ or maintenance of the required mitigation and monitoring shall be in strict compliance with MMC 22E.010.160.

10. The onsite wetland and buffer area that will be retained must be placed in a separate Native Growth Protection Area (NGPA) tract. The boundary of the tract shall be delineated by the installation of City approved fencing and signage.

11. Prior to issuing any ground disturbing activity permits, the applicant is required to obtain all necessary permits and approvals from Federal, State and local agencies for the proposed critical areas impacts.

12. Prior to any ground disturbing activities, all wetland buffer areas shall be temporarily fenced between the construction activity and the buffer area with highly visible and durable protective barrier(s). Said barriers shall be retained during construction to prevent access and sedimentation from disturbed areas from entering the wetland or its buffer.

13. A final landscape plan shall be required to be approved, prior to civil construction plan approval, and designed to comply with the applicable provisions outlined in MMC 22C.120, *Landscaping and Screening* and MMC 22G.090.570

    13.1. All required landscaping shall be bonded prior to final plat approval per MMC 22C.120.060.

14. Pursuant to MMC 22D.030.070(6)(a)(ii), the traffic concurrency determination and the project's impacts and mitigation obligations shall expire upon expiration of the subdivision. The project is subject to the (3) traffic mitigation obligations as required by the Traffic Concurrency Recommendation, dated July 31, 2024. Said obligations are as follows:

    14.1. The applicant shall be required to construct frontage improvements along 44th Street NE, 75th Avenue NE, and the new internal plat roads, prior to the recording the final subdivision. Roadway improvements, channelization, site access and lighting plans shall be required to be reviewed and approved by the City Engineer, prior to construction plan approval.

    - 44th Street NE shall be built compliant with SP 3-201-004.
    - 75th Avenue NE and the internal plat roads shall be built compliant with SP 3-202-002.

    14.2. The applicant shall be required to dedicate public right-of-way in order to accommodate the required frontage improvements, in accordance with MMC 12.02A.110(1)(c), *Dedication of Road right-of-way – Required setbacks*. Right-of-way widths and required dedication shall be determined by the City Engineer.

    14.3. In order to mitigate impacts upon the future capacity of the road system, the applicant shall be required to submit payment to the City of Marysville, on a proportionate share cost of the future capacity improvements as set forth in MMC 22D.030.070(3), for the development. **Traffic impact fees shall be vested at a rate of $6,300.00, per PMPHT, totaling $359,100.**

15. The applicant shall submit payment to the City of Marysville for park impacts caused by the development in accordance with MMC 22D.020, *Parks, Recreation, Open Space and Trail Impact Fees and Mitigation*. Park mitigation fees will be based on the fee schedules in effect at the time an individual building permit application is accepted by the City and will be required to be paid prior to building permit issuance unless deferred until a time preceding final building inspections being granted.

16. The applicant shall submit payment to Marysville School District for school impacts caused by the development in accordance with MMC 22D.040, *School Impact Fees and Mitigation.* School mitigation fees will be based on the fee schedules in effect at the time an individual building permit application is accepted by the City and will be required to be paid prior to building permit issuance unless deferred until a time preceding final building inspections being granted.

17. Credit for impact fees shall be given to compensate for the existing single family residences to be removed during development. Therefore, impact fees credits shall be given to Lots 1-2.

18. All necessary power lines, telephones wires, television cables, fire alarm systems and other communication wires, cables or shall be placed in underground location either by direct burial or by means of conduit or duct. All such underground installations or systems shall be approved by the appropriate utility company and shall adhere to all governing applicable regulations including, but not limited to, the applicable City and State regulations and specific requirements of the appropriate utility pursuant to MMC 22G.090.710(1).

Prepared by: Emily **Reviewed by:** Chris

EXHIBITS

The following Exhibits can be accessed electronically via the link provided in the exhibit header below:

PA24-014 – Williams Pointe Subdivision

01) Land Use Application
02) Project Narrative
03) Title Report/Legal Description
04) Environmental Checklist
05) Traffic Impact Analysis
06) Snohomish County Traffic Offer
07) Drainage Report
08) Critical Areas Report – Retaining wall impacts
09) Buffer Mitigation Planning Plan
010) Landscape Plan
011) Plat Map
012) Preliminary Civil Plans
013) Letter of Completeness
014) Notice of Application
015) Request for Review
016) Geotechnical Report
017) Affidavit of Publication
018) Affidavit of Posting
019) Technical Review Comments #1
020) Accepted Snohomish County Traffic Offer
021) Correspondence with DOE
022) Resubmittal Letter #1
023) Preliminary Civil Plans, Revision 1
024) Title Report/Legal Description, Revision 1
025) Wetland Memo
026) Technical Review Comments #2
027) Resubmittal Letter #2
028) Updated Critical Areas Report
029) Preliminary Civil Plans, Revision 2
030) Site Plan of Record
031) Concurrency Recommendation
032) Concurrency Acceptance
033) SEPA MDNS
034) Notice of MDNS
035) Notice of Public Hearing
036) SEPA Comments from DOE
037) DOE/Applicant Correspondence
038) Public Comments