HEARING EXAMINER - TUMWATER BLVD TOWNHOMES BINDING SITE PLAN AND PLANNED UNIT DEVELOPMENT
MEETING AGENDA

Online via Zoom and In Person at
Tumwater City Hall, Sunset Room, 555
Israel Rd. SW, Tumwater, WA 98501

Wednesday, September 24, 2025
5:00 PM

The Tumwater Hearing Examiner is an appointed official of the City, and rules upon land use and zoning matters. Within 10 business days of the conclusion of the hearing, the Examiner shall render a decision, including findings and conclusions. Questions on the operation and procedures of the Hearing Examiner may be directed to the Community Development Department at 360-754-4180.

1. Call to Order
2. Public Hearing
   a. TUM-25-0680 Planned Unit Development and Binding Site Plan TUM-25-0683
3. Adjourn

Meeting Information
Staff and the Hearing Examiner will be attending remotely. The public is welcome to attend in person, by telephone or online via Zoom.

Watch Online
Go to http://www.zoom.us/join and enter the Webinar ID 898 2578 6335 and Passcode 114601

Listen by Telephone
Call (253) 215-8782, listen for the prompts and enter the Webinar ID 898 2578 6335 and Passcode 114601.

The City of Tumwater Hearing Examiner will hear testimony from interested parties in person, via computer audio or by telephone by registering in advance to provide comment.

Public Comment – Register in advance for this webinar:
https://us02web.zoom.us/webinar/register/WN_udXHakzhS2yJxu4KeUnH3Q

After registering, you will receive a confirmation email containing information about joining the webinar.

Written comments may be submitted to City of Tumwater, Community Development Department, 555 Israel Road SW, Tumwater, WA 98501, or by email at abaruch@ci.tumwater.wa.us, and must be received by 12:00 p.m. on September 24, 2025.

Post Meeting
Video of this meeting will be recorded and posted on our City Meeting page: https://tumwater-wa.municodemeetings.com.

Accommodations
The City of Tumwater takes pride in ensuring that people with disabilities are able to take part in, and benefit from, the range of public programs, services, and activities offered by the City. To request an accommodation or alternate format of communication, please contact the City's ADA Coordinator directly, call (360) 754-4129 or email ADACoordinator@ci.tumwater.wa.us. For vision or hearing impaired services, please contact the Washington State Relay Services at 7-1-1 or 1-(800)-833-6384.

TO: City of Tumwater Hearing Examiner

FROM: Alex Baruch, Senior Planner

DATE: September 24, 2025

SUBJECT: TUM-25-0680 Planned Unit Development and Binding Site Plan TUM-25-0683

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1) Recommended Action:
Staff recommends approval of the Preliminary Binding Site Plan and Planned Unit Development subject to the conditions outlined in this staff report.

2) Background:
Applicant requests approval to construct 24 townhomes within a condominium development to include associated infrastructure, open space and landscaping.

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3) Alternatives:
- Approve Case Nos. TUM-25-0680 and TUM-25-0683 with recommended conditions
- Approve Case Nos. TUM-25-0680 and TUM-25-0683 with amended conditions
- Deny Case Nos. TUM TUM-25-0680 and TUM-25-0683
- Remand Case Nos. TUM-25-0680 and TUM-25-0683 to staff for further analysis

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4) Attachments:
Exhibit 1. Staff Report September 24, 2025
Exhibit 2. Vicinity Map
Exhibit 3. Zoning map
Exhibit 4. Preliminary Civil Plans 06-04-2025
Exhibit 5. Public Notice Certification 09-12-2025
Exhibit 6. Notice of Application with Optional MDNS 06-27-2025
Exhibit 6a-c. Notice of Application Comments
Exhibit 7. Mitigated Determination of Non-significance with SEPA Checklist 07-25-2025
Exhibit 8 Public Hearing Notice 09-12-2025
Exhibit 9. Traffic Scoping Memo 06-10-2025
Exhibit 10. Concurrency Ruling 06-11-2025
Exhibit 11. Critical Area Report 06-04-2025
Exhibit 12. Gopher Report 06-04-2025
Exhibit 13. Arborist Report 06-04-2025
Exhibit 14. Drainage Report 06-04-2025
Exhibit 15. Regulated Prairie Absence Report 06-04-2025
Exhibit 16. Preliminary Floor Plan and Elevations 06-04-2025
Exhibit 17. Water and Sewer Availability Letter 06-04-2025
Exhibit 18. Project Narrative 06-04-2025
Exhibit 19. Title Report 06-04-2025

EXHIBIT 1

CITY OF TUMWATER
HEARING EXAMINER STAFF REPORT
Hearing Date: September 24, 2025

Project Name: Tumwater Boulevard Townhome Condominiums

Case Numbers: TUM-25-0680 Planned Unit Development and Binding Site Plan
TUM-25-0683

Owner: Tenino Land Company, LLC
17348 Marsh Rd. SW
Tenino, WA 98589

Project Proponent/ Representative: JSA Civil, LLC
Whitney Dunlap, PE
111 Tumwater Blvd SE Suite B203
Tumwater, WA 98501

Type of Action Requested: The project proponent is requesting approval of a Planned Unit Development (TUM-25-0680) and Preliminary Binding Site Plan (TUM-25-0683) to construct 24 townhomes on a parcel located in the Single-Family Medium Density (SFM) zone district. The SFM zone allows townhomes within a planned unit development.

Project Location: 715 Dennis Street SE and 934 Tumwater Blvd SE. Parcel Numbers: 79300001100 and 79300001200.

Project Permit: The following have been issued for the project:

1. Notice of Application with Optional MDNS was issued on June 27, 2025 (TUM-25-0169) (Exhibit 6)
2. Mitigated Determination of Non-Significance was issued on July 25, 2025 (TUM-25-0682) (Exhibit 7)

Public Notification: Public notification for the September 24, 2025, public hearing was mailed to property owners within 300 feet of the subject property and various agencies, posted on-site and published in *The Olympian* on September 12, 2025, in conformance with Tumwater Municipal Code TMC 14.06 (Exhibits 5 and 8).

Staff Recommendation: Approval, subject to conditions identified at the end of the staff report in Section IV *Recommendation*.

Staff Planner: Alex Baruch, Senior Planner, AICP
Phone: (360) 754-4180
E-Mail: abaruch@ci.tumwater.wa.us

I. BACKGROUND INFORMATION

A. Application and Review Process

A pre-application site plan review was reviewed by the development review committee on May 1, 2025 (TUM-25-0169). The Planned Unit Development (TUM-25-0680) and Preliminary Binding Site Plan (TUM-25-0683) applications were submitted on June 4, 2025, and were deemed complete on June 23, 2025.

Under TMC 2.58.090 and TMC 14.16.040, review authority for the planned unit development and consolidated permit review for the preliminary binding site plan fall under the purview of the Hearing Examiner.

B. Existing Conditions

Currently the property is partially cleared with a portion of the property used as access for a sewer lift station that serves the surrounding area. Wetland and wetland buffers occupy a portion of the property to the north, west and east. It does not appear that the property has been developed in the past. (Exhibit 3).

C. Project Description

The application proposes to construct 24 townhomes on two parcels with a total 10.65 acres. The units are proposed to be condominiums through the binding site plan process. The development will include infrastructure, frontage improvements, parking and open space.

II. REGULATORY FRAMEWORK

The proposal is subject to the following policies and regulations:

A. **Tumwater Comprehensive Plan:** The project site is located in the Bush Prairie Neighborhood as designated by the Land Use Element of the City's Comprehensive Plan. The land use designation for the approximately 10.65-acre site is Single-Family Medium Density with Airport Overlay for a portion of the site (SFM2) (Exhibit 4).

The Comprehensive Plan Neighborhood Appendix, Section 3.4 Bush Prairie Single-family Medium Density states:

"The area along Tumwater Boulevard is currently undeveloped but is adjacent to the Airport approach zones for the Olympia Regional Airport. Uses which tend to induce large gatherings of people, such as churches, theaters, or schools and above-round flammable storage tanks should be prohibited because of potential catastrophic results of a single plane accident. Strong light sources, such as floodlights, glare producing uses such as metal roofs, and smoke/steam sources or open burning, should

also be prohibited because of possible effects on pilot visibility during takeoff and landing. All residential development should be closely evaluated in terms of safety to the home to be constructed, the impact of noise, and the potential impact on Airport operations. New residents should be aware they are within an Airport approach area and new homes should be constructed with additional sound proofing to mitigate noise from aircraft."

The housing chapter (Goal H-7) further identifies the need to ensure that housing is compatible in quality, design, and density with surrounding land uses traffic patterns, public facilities, and environmentally sensitive areas.

Staff Response and Recommended Finding:

The goals stated in the Comprehensive Plan encourage development in line with the surrounding area and the Comprehensive Plan designation. Single-family Residential development is in line with the designation and the surrounding area and would not be in conflict with the airport as the residential development would not produce a strong light source, smoke/steam or open burning. Lighting would be governed by TMC 18.40.035 which regulates the amount of glare allowed at the property line and requires dark sky compliant lighting. TMC 8.16.010 declares open burning as a nuisance and is restricted so as to not cause a health or safety risk.

The proposal includes community open space which is discussed in greater length as a part of the Planned Unit Development section and infrastructure improvements as encouraged by the Comprehensive Plan and required by City Ordinances.

Citywide Design Guidelines have been adopted to ensure compatibility in the surrounding areas.

Staff finds that the project is consistent with the Comprehensive Plan with the proposed conditions.

B. **Tumwater Transportation Plan:** The Transportation Plan includes language speaking to regional consistency and coordination to address both motorized and non-motorized transportation links and corridor. Goals are to establish a street and road network that provides for the safe and efficient movement of goods and people, neighborhood connectivity, to ensure pedestrian connectivity, and concurrency to meet PM peak hour level of service standards.

Staff Response and Recommended Finding: *A Transportation Concurrency Application along with a Traffic Impact Analysis was submitted for review. The Transportation Manager and Transportation and Engineering Director reviewed the transportation scoping memo and trip distribution map and findings were incorporated as a part of the Transportation Concurrency and SEPA Mitigated Determination of Non-Significance.*

The transportation concurrency ruling identified specific mitigation measures to achieve concurrency. Trips are proposed to be sent through the Tumwater Blvd – I-5 Interchange which will also require payment of mitigation fees or construction of the required interchange improvements and construction of a temporary signal prior to issuance of the first building

permit. These findings are reflected in the MDNS issued June 25, 2025 (Exhibit 7).

Staff finds that with the required mitigation proposed in the Transportation Concurrency and MDNS, this project will not adversely affect level of service standards and that the project is consistent with the Tumwater Transportation Plan.

C. **Sustainable Development Plan for Thurston Region:** The Plan indicates that the regional community has set a target to reduce vehicle miles traveled and to preserve sensitive areas, farmland, forest land, prairies and rural lands.

Staff Response and Recommended Finding: *The Plan has a target goal stating that by 2035, 72 percent of all (new and existing) households in our cities, towns, and unincorporated growth areas will be within a half-mile (comparable to a 20-minute walk) of an urban center, corridor, or neighborhood center with access to goods and services to meet some of their daily needs.*

The site is located more than a half-mile from an urban center, however is located within a half-mile of the intersection of Tumwater Blvd and Capitol Blvd which is a major intersection in Tumwater. The Plan also includes a goal of preserving environmentally sensitive lands, farmlands, forest lands, prairies, and rural lands and develop compact urban areas.

The project meets this goal by providing compact development in the urban area and enhancing environmentally sensitive lands as a part of the Planned Unit Development.

Staff finds the project is consistent with the Sustainable Development Plan for Thurston Region.

D. **Thurston Regional Trail Plan:** The City of Tumwater is a participating member of the Thurston Regional Planning Council (TRPC). TRPC adopted the Thurston Regional Trail Plan in December 2007.

The Regional Trails Plan defines a trail network blueprint and a set of guidelines and recommendations for all of Thurston County and its cities, towns and communities. The Goals and Policies section of the Plan serves to link local trail planning efforts within the broader context of planning the regional transportation network. The plan charts a systematic path creating interconnected corridors that improve access to community destinations.

Staff Response and Recommended Finding: *The project site is not affected by the regional trail network outlined in the Thurston Regional Trail Plan.*

Staff finds that approval of the project will not affect implementation of the Thurston Regional Trail Plan.

E. **Hearing Examiner – TMC 2.58.090 and TMC 14.16.040:** The Hearing Examiner has authority to review Planned Unit Developments and consolidated review of other permits.

Staff Response and Recommended Finding: *Planned Unit Developments require a public hearing and decision by the Tumwater Hearing Examiner. Consolidated review for the preliminary binding site plan is required per 14.16.040.B. Final binding site plan approval authority is administrative and will be completed by City of Tumwater staff.*

F. **Public Notice Requirements –TMC Chapter 14.16:** TMC Chapter 14.16 requires the City to provide public notification of certain application types by issuing a Notice of Application with Optional MDNS (TMC 14.16.050) and a Notice of Open Record Hearing (TMC 14.10.050).

Staff Response and Recommended Finding: *A notice of application with optional MDNS for the planned unit development and Preliminary Binding Site Plan were mailed to property owners within 300 feet of the subject property, affected agencies and posted on-site; and published in the Olympian on June 27, 2025. (Exhibits 5 & 6)*

Public comments:
Squaxin Island Tribe and the Department of Archeology and Historic Preservation (DAHP) commented on the application requesting a cultural resource study be completed for the project as the property has a high potential for cultural resources.

Washington State Department of Ecology provided comments regarding water quality, solid waste management and toxic cleanup. These comments will be addressed with the Site Development Grading permit.

The city responded stating that a cultural resources study will be a condition of approval (Condition 7) of the planned unit development and binding site plan. The study will need to be completed and approved prior to any land disturbance on the property.

Public comments received from the Notice of Application are found in Exhibit 6a-c.

Public notice for the September 24, 2025 public hearing was mailed to property owners within 300 feet of the subject property, affected agencies, and those who provided comment, posted on-site, and published in the Olympian on Friday, September 12, 2025, in conformance with TMC 14.06.070 (Exhibits 5 & 8).

G. **State Environmental Policy Act – TMC 16.04:** The City of Tumwater Community Development Department reviewed a SEPA Environmental Checklist and other information submitted by the project proponent and issued a Mitigated Determination of Non-Significance on July 25, 2025.

Staff Response and Recommended Finding: *The City of Tumwater Community Development Department, as lead agency, completed environmental review in accordance with TMC 16.04, RCW 43-21C and WAC 197-11. The City's SEPA threshold determination was mailed to property owners within 300 feet of the subject property, affected agencies and posted on-site; and published in the Olympian. The City's SEPA threshold determination, a Mitigated Determination of Non-significance was issued on July 25, 2025 (Exhibit 7).*

Public comments:

No public comments were received during the MDNS appeal period.

H. **Transportation Concurrency – TMC 15.48**: The project is subject to the requirements of the City's transportation concurrency test outlined in TMC Chapter 15.48.

Staff Response and Recommended Finding: *The applicant submitted a Traffic Scoping Memo for the project. The memo was reviewed by the City's Transportation Manager who has issued a transportation concurrency ruling stating that the project is concurrent in regard to transportation when 1) transportation impact fees are paid and 2) either construction of improvements at the I-5 interchange at Tumwater Blvd or payment of mitigation fees for trips through the Tumwater Boulevard/I-5 Interchange (Exhibits 9 and 10).*

I. **Tree Protection and Replacement Ordinance – TMC 16.08:** TMC Chapter 16.08 regulates the removal and preservation of existing trees on a site to be developed.

Staff Response and Recommended Finding*: A professional forester's report that included a tree inventory, and tree protection plan in compliance with TMC Chapter 16.08 was submitted. The inventory showed a total of 447 trees located on-site. TMC 16.08 requires retention of 20% or 12 trees per acre, whichever is greater. 12 trees per acre would require retaining 126 trees on-site. The foresters report states that 407 trees are proposed to be retained. Approximately 40 trees will need to be removed as a part of development construction. The amount of trees proposed to be retained is over the required amount. Additional trees will be planted as part of the site landscaping and street trees. (Exhibits 2 and 13) Due to the property being adjacent to a Light Industrial zoned property there are higher landscaping requirements adjacent to that zoning designation. The landscape plans proposed to use existing mature vegetation wherever possible to help screen the light industrial use from the new development and will supplement where necessary to achieve the higher landscaping requirements.*

Staff finds that the proposed planned unit development, binding site plan, preliminary landscape plan and preliminary civil plans are consistent with TMC 16.08.

J. **Fish and Wildlife Habitat Protection – TMC 16.32:**

TMC Chapter 16.32 regulations fish and wildlife and species.

Staff Response and Recommended Finding: The parcel has soil preferred by the Mazama Pocket Gopher. A Mazama Pocket Gopher Screening report dated July 2024 concluded that no gopher mounds were found on the property after two screenings were conducted in June 2024 and July 2024. (Exhibit 12).

K. **Wetlands – TMC 16.08:**

A Critical Area Report was submitted for review for this application. (Exhibit 11) Two wetlands were found on the properties.

- Wetland A is located to the north and east of the property and is rated a category II wetland. The standard buffer for a category II wetland is 150 feet. The buffer can be reduced to 110 feet as long as the requirements in 16.28.170(C) are met. A wetland buffer reduction is proposed.
    - Since the wetland score for habitat was over 5 points the width of the buffer can only be reduced if both of the following criteria are met 16.08.170.c.1.(a and b):
        - A relatively undisturbed vegetated corridor at least 100 feet wide is protected between the wetland and any other priority habitats as defined by the Washington State Department of Fish and Wildlife. The corridor must be protected for the entire distance between the wetland and the priority habitat via some type of legal protection such as a conservation easement, and
        - Measures to minimize the impacts of different land uses on wetlands such as examples summarized in Table 16.28.170(5) are applied.

A condition of approval has been added to ensure a conservation easement or some type of legal protection is in place for the 100' buffer and measures to minimize the impacts on wetlands are implemented. Additionally, measures to minimize the impacts of the development on wetlands will need to be incorporated into the development as a part of the site development grading and building permit.

- Wetland B is located to the east and is rated a category III wetland. The standard buffer for a category III wetland is 150 feet with a buffer reduction possible to 110 feet. No reduction is proposed.

Staff Response: The wetland buffer will have signs every 50 feet and will have a continuous split rail fence across the buffer. These items will be shown on the site development grading plans as a part of the development. The requirements in 16.28.170.(c) will be applied to the project during construction and during building permit review. Covenants and restrictions will be added to ensure wetlands are protected. Notes will also be added to the final binding site plan referencing wetland protection requirements.

L. Preliminary Binding Site Plan Design Standards – TMC Title 17:

The subdivision is required to comply with the following standards of design and development as required by TMC 17.12.010.

1) TMC 17.12.020 – Future Subdivision and Access: All land divisions shall be designed to accommodate the future land division of adjoining land by providing adequate future access and utility service. Pedestrian and bicycle access to schools, parks, shorelines, recreation areas, and open space shall be provided by walkway where street access is unsafe or inadequate.

Staff Response and Recommended Finding: *This project is proposing to construct internal roads no future connections are proposed as there are critical areas to the north and east. Sidewalks are proposed throughout the subdivision and to open spaces. Bicycle lanes will be completed as a part of the frontage improvements along Tumwater Blvd.*

With these conditions, staff finds that the preliminary binding site plan is consistent with TMC 17.12.020.

2) TMC 17.12.040 – Minimum Lot Size: Lots or tracts shall conform to the size set forth in the zoning district unless dedicated or restricted by covenant for open space, park, recreational or other community or public use. In subdivisions intended for single family dwelling units or townhouse/row house development, a separate lot or tract shall be provided for each dwelling unit, not including accessory dwelling units. If the land division is submitted in phases/divisions of development, each phase/division submitted for approval shall meet all provisions of this section.

Staff Response and Recommended Finding: *The proposal includes a townhome development that will be recorded as condominium units. The proposed lots shall meet the required minimum lot sizes as required by the underlying zone district. The minimum lot width in the SFM zone district is 50 feet, which each of the six lots meet as shown on the preliminary civil plans. The minimum lot size is 3,200 feet, which each of the six lots meet.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.040.

3) TMC 17.12.060 – Residential Lot Building Sites: Each residential lot in low density residential zones shall have a building site no less than 1,600 square feet in area within which a suitable building can be built and served by utilities and vehicular access unless dedicated or restricted by covenant for open space, park, recreation or other public use. The building site area herein required shall not exceed a 25% cross slope or include any very severe development limitation areas. Such building sites shall be indicated on the face of the preliminary land division.

Staff Response and Recommended Finding: *The smallest lot sized proposed by this development is approximately 10,589 sf. The lots will be served by public water and sewer and will be served by public roads. No building site will exceed a 25% cross slope.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.060.

4) TMC 17.12.070 – Natural Vegetation and Features: Natural vegetation and features such as trees, streams, wetlands, and wildlife habitat shall be preserved to the greatest extent possible and in accordance with the requirements of Title 16 TMC and Chapter 18.47 TMC.

Staff Response and Recommended Finding: *A professional forester's report, tree inventory, and tree protection plan that complies with TMC Chapter 16.08 were submitted, reviewed, and are recommended for approval with the proposed preliminary binding site plan. The wetland*

report is discussed in section K of this report, and the applicant provided a gopher survey.

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.070.

5) TMC 17.12.080 – Clearing and Grading: Proposed clearing and grading should be minimized by the use of shared access driveways and careful location of streets and building sites.

Staff Response and Recommended Finding: *Preliminary site development and grading plans have been reviewed by staff and are consistent with the requirements of this section.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.080.

6) TMC 17.12.090 – Wetlands and Drainage: Wetlands and natural drainage ways shall be subject to review under Chapters 16.28 (Wetlands) and 16.32 (Fish and Wildlife Conservation Areas) of this code.

Staff Response and Recommended Finding: *Please see section K for a discussion on the wetlands and natural drainage ways.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.090.

7) TMC 17.12.100 – Hazards: Where land division and development of land may pose a hazard to the land division and nearby properties because of steep slopes, unstable soils, excessive stormwater runoff or soil erosion, the land divider shall have the burden of presenting the evidence satisfactory to the City of hazard mitigation. In the absence of such evidence, division of such land shall be denied.

Staff Response and Recommended Finding: *A preliminary drainage report, including soils report has been submitted. All stormwater runoff, treatment and release shall meet the minimum standards of the City of Tumwater Drainage Design and Erosion Control Manual. Any retaining walls shall meet the requirements of the Tumwater Municipal Code and most current building code requirements.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.100.

8) TMC 17.12.110 – Streets: The size of streets and their associated rights-of-way shall be as shown on the street standards chart for the class of street, which is appropriate to serve the land division, and anticipated community traffic, existing and potential. In areas where the division is adjacent to an existing street, right-of-way dedications shall be made to the existing street centerline.

Staff Response and Recommended Finding: *The development proposal includes frontage improvements along Tumwater Blvd SE. Construction of the new internal public road is required as a part of this development proposal. The roads shall meet the required width as determined by the Transportation and Engineering Director and Engineering Department at the time of site development grading submittal.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.110.

9) TMC 17.12.120 – Driving Surfaces and Rights-of-Ways: All roads shall be designed and constructed in accordance with the adopted "Development Standards for the City of Tumwater" in effect at the date of acceptance of the preliminary land division.

Staff Response and Recommended Finding: *As part of the site development/grading permit review, all roads shall be constructed pursuant to the specifications outlined in the City of Tumwater Development Guide.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.120 with the proposed conditions.

10) TMC 17.12.130 – Cul-de-sacs: All cul-de-sacs shall be designed in accordance with the adopted "Development Standards for the City of Tumwater" in effect at the date of acceptance of the preliminary land division. Parking is prohibited in the cul-de-sac turnarounds and shall be posted. An improved pathway for pedestrian and bicycle use shall be dedicated to the public to connect cul-de-sac streets to nearby areas where such a pathway is necessary to provide convenient access to schools, parks, public transit stops, shopping centers, other cul-de-sacs or pathways, and other community services, or as otherwise necessary for public convenience and safety. Such pathways shall be designed to maintain the safety of pedestrians and bicyclists and owners of properties adjacent to the pathway.

Staff Response and Recommended Finding: *The cul-de-sac will be required to meet the development regulations at the time of civil plan submittal.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.130.

11) TMC 17.12.140 – Street Signs: Street signs shall be installed by the subdivider as specified by the Community Development Department.

Staff Response and Recommended Finding: *Street signs are required. Signage and placement shall be reviewed and approved as part of site development and grading permit review.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.140.

12) TMC 17.12.150 – Topography: All streets should be designed to conform to the topography of the site, in order to reduce street grades and minimize the need for cuts and fills.

Staff Response and Recommended Finding: *Streets are proposed to be designed to conform to the topography of the site.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.150.

13) TMC 17.12.160 – Maximum street grades: Maximum street grades shall be in accordance with the adopted "Development Standards for the City of Tumwater".

Staff Response and Recommended Finding: *All proposed street grades shall be designed in accordance with the adopted standards. Preliminary grading plan can be found in the preliminary civil plans (Exhibit 2).*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.160.

14) TMC 17.12.170 – Street Names: All streets shall be named or numbered as specified by the City. The land divider is encouraged to submit requested street names to the city for its consideration.

Staff Response and Recommended Finding: *The street names and addresses for the preliminary binding site plan shall be assigned by the City of Tumwater Building Official.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.170.

15) TMC 17.12.180 – Lot Access: Each lot shall have a minimum of 10 feet of unobstructed access to a street, directly or by access easement.

Staff Response and Recommended Finding: *The proposal shows all parcels fronting a public street.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.180.

16) TMC 17.12.190 – Private Streets: Private streets shall be constructed to meet or exceed the design standards established on the street standards chart for the City. Public access to developments or parts of developments containing private streets shall not be limited by the use of gates or other measures.

Staff Response and Recommended Finding: *No private streets are proposed with this development.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.190.

17) TMC 17.12.200 – Underground Utilities: Electrical power, telephone, cable television, fiber optics and other transmission lines shall be installed underground.

Staff Response and Recommended Finding: *In accordance with TMC 17.12.200 and Section 3.14 of the Tumwater Development Guide, all utilities associated with this project shall be underground.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.200.

18) TMC 17.12.210 –Park and open space area standards for divisions of land.

[…]

B. For residential subdivisions in which the majority of the dwelling units will be fourplexes, multifamily dwellings, roominghouses, rowhouses, townhomes, or triplexes, a minimum of fifteen percent of the gross site area shall be set aside for park and open space area.

[…]

E. For the purpose of calculation of the park and open space area, the park and open space area shall be separate and distinct from required yards, setbacks, and landscaped areas.

[…]

L. Maintenance of park and open space areas shall be provided for as described in TMC Chapter 17.22.

Staff Response and Recommended Finding: *The preliminary binding site plan encompasses approximately 10.77 acres and requires 1.62 acres of open space. The proposal includes a total of 1.62 acres of open space with a combination of active and passive open space. This includes a walking path on the edge of the reduced wetland buffer, basketball court, playground, benches and disc golf basket along with grassy areas. The site development grading plan shall include details about all amenities proposed as a part of the active and passive open space.*

Staff finds that the preliminary binding site plan is consistent with TMC 17.12.210.

M. Land Division

1. Preliminary Land Division TMC 17.14 and RCW 58.17: TMC 17.14 and RCW 58.17 regulate the submission, review criteria, and consideration of proposed divisions of land.

Staff Response and Recommended Finding: *The project proponent completed the pre-submission process described in TMC 17.14.020.*

The application submission requirements listed in TMC 17.14.030 have been met.

TMC 17.14.040 and RCW 58.17.035 require the Hearing Examiner to inquire into the public use and interest proposed to be served by the establishment of the proposed land division and any public dedications associated with a project.

Criteria to be considered include if appropriate provisions are made for, but not limited to, the public health, safety and general welfare, for open spaces, drainage ways, streets or roads, alleys, other public ways, other grounds, transit stops, potable water supplies, sanitary wastes, parks and recreation playgrounds, schools and school grounds, fire protection and other public

facilities, and shall consider all other relevant facts, including the physical characteristics of the site, and determine whether the public interest will be served by the land division and dedication. Further, consideration shall be given to sidewalks and other planning features that assure safe walking conditions for students who only walk to and from school.

Staff concludes that adequate provisions will be made for public health, safety, and general welfare as follows:

1. The proposal includes both passive and active open spaces *(Exhibit 2).*

2. *A storm drainage system complying with the City of Tumwater's 2022 Drainage Design and Erosion Control Manual will be constructed for the site. A preliminary storm drainage report was submitted to support the preliminary design and will be approved as a part of the Site Development/Grading Permit (Exhibit 14).*

3. *Construction of frontage improvements and road extensions will occur during the first portion of development. Traffic impact fees and mitigation fees for the identified level of service failure at the Tumwater Boulevard/I-5 interchange are due at building permit issuance (Exhibits 2 and 7).*

4. *The City of Tumwater Water Resources and Sustainability Department has issued a water and sewer availability ruling indicating that the City has the ability to serve the preliminary binding site plan with water and sewer connections (Exhibit 17).*

5. *The site is within the Tumwater School District and will pay school impact fees at building permit issuance.*

6. *City of Tumwater Fire Department facilities are adequate to service the proposed project.*

7. *No portion of the property is located within the shoreline of the state or known flood hazard areas.*

N. Tumwater Zoning Code – TMC Title 18:

1. Single-Family Medium Density Zone District TMC 18.12 – Permitted Uses and Development Standards

Staff Response and Recommended Finding: *The project site is located in the Single-Family Medium Density (SFM) zone district (Exhibit 4).*

18.12.020 lists townhomes as a permitted use within an approved planned unit development. The development standards allow a minimum of six dwelling units per acre with a maximum of eight dwelling units per acre by-right. Density calculations for the development show that the proposed dwelling units for this development are below eight dwelling units per acre.

The minimum lot size in the SFM zone district is 3,200 sf.

Maximum lot coverage is 70 percent of the total area of each lot. At the time of building permit submittal the applicant shall provide a site plan providing this calculation for each lot.

Maximum structure height is 35' and required setbacks are: front: 10', side: 5' and rear: 20'. The side setback is proposed to be reduced to 0' through a planned unit development.

Staff finds that the preliminary plat and site plan are consistent with the permitted uses and development standards in the Single-Family Medium Density (SFM) Zone.

2. Aquifer Protection Overlay (AQP) zone district - TMC 18.39 – Restricted Land Uses

Staff Response and Recommended Finding: *The intent of the aquifer protection (AQP) overlay zone district is to identify, classify, and protect vulnerable and/or critical aquifer recharge areas within the city and urban growth area. Protection is to be accomplished by controlling the use and handling of hazardous substances.*

The uses proposed with the preliminary binding site plan are not restricted land uses in the aquifer protection (AQP) overlay zone district.

3. Planned Unit Development – 18.36:

Planned unit developments provide flexibility in regard to the site design, placement of buildings, use of required open spaces, setbacks, lot sizes and dimensions, and otherwise better utilize the potential of sites characterized by special features, such as geography, topography, size or shape.

According to TMC 18.36.110, the Hearing Examiner's decision to approve or deny the development shall be based on at least, but not limited to, the following criteria:

- *a. Substantial conformance to the Tumwater comprehensive plan;*
  - *Staff analysis discussed in section II.A*
- *b. Conformance to the Tumwater Municipal Code and Tumwater development guide;*
  - *Staff analysis discussed in section II.E-N*
- *c. The quantifiable public benefits required by TMC 18.36.010;*
  - *Staff analysis: The applicant has provided a narrative outlining the proposed public benefits for this project. (Exhibit 18). Two points of public benefit are required due to the development proposing 20 units or more..*
    - *The first point of public benefit proposed is enhanced useable parks and open space.*
    - *The second point proposed is to go significantly beyond the minimum requirements for critical area protections to preserve, enhance or rehabilitate critical areas and buffers.*
- *d. The public health, safety, and general welfare;*
  - *Staff analysis discussed in section II.M*
- *e. The adequacy of the size of the proposed planned unit development to accommodate the contemplated developments;*

- *Staff analysis: The proposed development has provided the appropriate preliminary civil documentation to demonstrate the ability to accommodate all elements of the proposed design.*

f. Adequate access to the project site for all users of the project including the public, if applicable;

- *Staff analysis: A new public road will provide access via a new road and additional sidewalk for community members to use which are adequate to serve the proposed development.*

g. Appropriate access for public safety such as fire protection and police services; and

- *Staff analysis: The preliminary civil plans have been reviewed by the building and fire official with no concern for fire protection.*

h. Adequate mitigation measures for impacts associated with the physical characteristics of the site such as groundwater, stormwater, floodplains, critical areas, steep slopes, and critical habitat.

- *Staff analysis discussed in section II.J and K.*

Staff Analysis and Recommended Finding: *Planned unit developments are permitted in the SFM zone district. Approval of the planned unit development shall modify and supersede the regulations of the underlying zone district as outlined in the code. The minimum project size shall be over one acre.*

Through the site plan review process city staff and the applicant have negotiated the different elements of public benefit proposed with this project. While the acreage of proposed open space is equal to the amount required, the amount of components included within the open space went above and beyond the base amount required.

Additionally, the critical area enhancement proposes to enhance the prairie and wetland habitat in the vicinity of Wetland A by removing Himalayan blackberry and scotch broom (invasive plants), planting native plants in their place and adding three wood duck boxes, three bat boxes and two martin houses to enhance the wildlife habitat at the site is above and beyond what the ordinance would require for a development proposal.

The development proposal meets the requirements within 18.36 and therefore staff recommends approval of the planned unit development with conditions listed in this report.

4. Airport Overlay – 18.32:

The intent of the Airport Overlay Zone District is to protect the viability of the Olympia Regional Airport as a significant resource to the community by encouraging compatible land uses and densities and reducing hazards that may endanger the lives and property of the public and aviation users.

The proposed development includes a portion of the property within zone three of the airport overlay. Site development must comply with TMC 18.32.080.A residential standards. The applicant has provided an analysis of the criteria in Exhibit 18 page 3.

The criteria include:

1. The land division is approved as a clustered development with the residential lots located as far away from the runway centerline as possible;
    - *Staff analysis: Critical areas encumber the site to the north and east. The developable portion of the site is being developed to the maximum extent possible to comply with requirement in as condensed of a development allowed by the zone district.*
2. An open space area is provided on the project site. The purpose of this open space area is to provide sites that are suitable for the emergency landing of aircraft. The required minimum size of this open space area is one-half acre or ten percent of the gross site area, whichever is greater. This open space area may be used to fulfill other applicable open space/park requirements for residential developments; provided, that active recreation facilities and above-ground stormwater ponds and infiltration facilities shall not be located in this open space area. This open space area should be contiguous to other open space areas within or adjacent to the project site and may include wetlands and their buffers and other critical areas.
    - *Staff analysis: Due to most of the property being taken up by critical areas the only area on the site that provides a contiguous open space would be the wetland and wetland buffers. This area could be used in a last-ditch effort for emergency landing purposes.*

Staff Analysis and Recommended Finding: *Staff finds that the development proposal meets the requirements of 18.32.080.A.*

III. RECOMMENDATION

Pursuant to TMC 2.58.110, staff recommends approval of the Preliminary Binding Site Plan and Planned Unit Development described herein with the following conditions:

1. Wetland Sensitive Resource Tract:
    a. Protection of Sensitive Area Tracts/Easements. The city shall require, as a condition of any permit issued pursuant to this section, that the sensitive area tract or tracts created pursuant to this section be protected by one of the following methods:
        i. The permit holder shall convey an irrevocable offer to dedicate to the city of Tumwater or other public or nonprofit entity specified by the city an easement for the protection of native vegetation within a wetland and/or its buffer; or
        ii. The permit holder shall establish and record a permanent and irrevocable deed restriction on the property title of all lots containing a sensitive area tract or tracts created as a condition of this permit. Such deed restriction(s) shall prohibit, as long as wetland function exists, the development, alteration, or disturbance of vegetation within the sensitive area except for purposes of habitat enhancement as part of an enhancement project which has received prior written approval from the city of Tumwater, and any other agency with jurisdiction over such activity.

b. The location of the outer extent of the wetland buffer and the areas to be disturbed pursuant to an approved permit shall be marked in the field, and such field marking shall be approved by the city prior to the commencement of permitted activities. Such field markings shall be maintained throughout the duration of the project.
c. The site development grading plans for the project shall include a wetland buffer fence along the edge of the wetland buffer to be installed prior to site development grading final inspection approval. It shall consist of a four foot tall wood split rail fence or alternative approved by the Community Development Director. Wetland buffer signs shall be installed every 50'.

2. The most current design guidelines shall apply to the proposed structures at the time of building permit application.

3. Parks and Open Space:
    a. The site development grading plan shall include an open space sheet showing the total amount of open space meeting or exceeding the amount shown on the preliminary site development grading plans. The open space sheet shall include details of proposed equipment/infrastructure meeting the requirements in 17.12.210.G and design guidelines. The open space information can be combined on the landscape plan sheets if desired. The equipment/infrastructure shown on the approved plans shall be installed prior to site development grading final inspection approval or as allowed through alternative arrangements approved by the Community Development Director.

4. Consolidated postal drop-off facilities shall be provided for the site. The location must be coordinated and approved by the U.S. Postal Service with location shown on the civil engineering plans.

5. Two off-street parking spaces are required for each townhome. Driveways and off-street parking spaces must be hard surfaced (asphalt, concrete or turnstone). No parking will be allowed in a cul-de-sac turnaround and shall be posted accordingly.

6. A landscape and irrigation plan meeting the requirements of TMC 18.47 shall be submitted as part of site development grading submittal.

7. The project proponent shall complete a cultural resource study for the property which shall be reviewed and approved by the Department of Archeological and Historic Preservation (DAHP), Squaxin Island Tribe and Nisqually Indian Tribe prior to any permit approval for land disturbance for this project. After the study has been approved, the applicant shall follow the findings in the study along with the procedures in the City of Tumwater Standard Inadvertent Archaeological and Historic Resources Discovery Plan. If any archaeological or cultural resources are uncovered during construction, the project proponent shall stop work in the area of discovery and follow the procedures in TMC 18.40.065 Inadvertent Discovery of Archaeological and Cultural Resources.

8. Conditions listed in the Mitigated Determination of Non-Significance dated July 25, 2025, are hereby referenced and incorporated. If the applicant decides to pay mitigation fees for the Tumwater Blvd – I-5 intersection, the fee shall be paid prior to issuance of the initial building permit.

9. The following condition will be required to be noted on the Final Binding Site Plan: All landscaped areas in public rights-of-way shall be maintained by the Condo Association, owner(s) and his/her successor(s) and may be reduced or eliminated if deemed necessary for or detrimental to City road purposes.

10. Impact fees for traffic, parks and schools will be assessed to each dwelling unit in the binding site plan as Building Permits are issued. The impact fees will be in accordance with the most current fee resolution adopted by the City at the time complete Building Permit applications are submitted.

11. Two points of public benefit are required for approval of the Planned Unit Development. Verification that two points of public benefit have been met shall be completed prior to issuance of the first building permit for the project.

12. A Site Development/grading permit will be required for this site. The permit application shall be accompanied by the application checklist and digital plans and specifications, and supporting data consisting of a soils engineering report and engineering geology report prepared and signed by a licensed soils engineer. Inspection of the grading shall be provided by the civil engineer and Geotechnical engineer. In addition, special inspectors approved by the building official shall perform inspections of fill placement, compaction testing, and blasting. All special inspections are to be performed by WABO registered labs and inspectors who have expertise in grading and earthwork.

13. Separate building permits are required for retaining walls or rockeries over four feet in height, measured from the bottom of the footing to the top of the wall or walls supporting a surcharge. A licensed structural engineer shall design the rockeries or retaining walls. In addition to the engineers' design full time inspection by a WABO Special Inspector is required. Proposed rockeries shall be shown on the engineering and grading plans.

14. When the grading work is complete and ready for final inspection the civil engineer of record is responsible for providing a final inspection report which will include the geotechnical engineers and special inspector's reports. In addition, as-built drawings for the site will be submitted in a PDF format. IBC Appendix J.

15. The owner will need to submit the name of the WABO registered firm who will conduct the special inspections, to the Building Official, prior to issuance of the site development/grading permits

16. No vertical or combustible construction will be allowed on the site until the fire hydrants and paved roads are installed, tested and approved by the City of Tumwater. Note: testing will also include verification of fire flow by the fire department.

17. The required fire flow for this project is derived from Appendix B of the International Fire Code. Type VB Townhouse buildings of this size are required to have a fire flow of 1000 gallons per minute at 20 psi.

18. Fire hydrants and paved access roads shall be installed, tested for fire flow by the Fire Department and made serviceable by the Transportation and Engineering Department prior to any building permits being issued. IFC 503.2.3

19. The buildings are proposed to be R3 Townhouse single family occupancies and of type V-B construction. IBC Chapter 3. The walls are required to be of 2- hour fire-rated construction.

20. Addresses for this binding site plan will be assigned before final binding site plan approval by the Building & Fire Official. Street/private lanes shall have names provided by this time.

21. The applicant shall be responsible for providing the City with all costs associated with the installation of water, sewer, street, and storm drainage systems that are dedicated to the City of Tumwater.

22. All designs/construction shall comply with the City of Tumwater's Development Guide and WSDOT standards.

23. The site plan shall show all existing and proposed utilities and easements including streetlights, street trees, water, sewer, storm, gas, cable, power, telephone, signage, and striping. Provide street sections showing dimensions of existing and proposed improvements. Include the line sizes on the water and sewer mains and services. All rockeries proposed shall also be shown on the site plan.

24. All street construction, main installation, and storm drainage work requires engineered plans certified by a professional engineer.

25. The applicant is responsible for all plan check, inspection and connection fees.

26. Any private or public utility relocation is the responsibility of the applicant.

27. The applicant shall be responsible for the maintenance and timely repair of all public improvements for a period of 30 months following final certification by the City and shall submit a surety for maintenance equal in value to fifteen (15) percent of the total value of the required public improvements certified by the Transportation and Engineering Director. Please refer to Chapter 3 of the Development Guide for further clarification.

28. Provide all easements and bills-of-sale documents with the engineered plans.

29. All legal descriptions must be accompanied with an appropriate drawing that the City Surveyor can use to verify the legal description. All engineering drawings will be on 24"

x 36" paper sheets.

30. The owner or owner's representative is also responsible for furnishing the City with electronic files, compatible with release 2019 or newer Auto-CAD format. Provide individual drawings independent of x-refs. Include all non-standard font files and plot files. Also, please furnish PDF files printed from the Auto-CAD files 300 DPI or greater. A stormwater maintenance agreement, utility maintenance agreement, easements and bills-of-sale will also be required.

31. Site plan modifications may occur as a result of the engineering review process. For engineering issues, the approved engineering plans take precedence over the approved site plan.

32. Please note on the plans that the PLS responsible for the surveying of the project must obtain a permit from DNR before any monuments are disturbed.

33. The City vertical and horizontal control datum is NGVD 29 and NAD 83(HARN) / Washington South U.S. Survey Feet respectively.

34. Testing shall be required at the developer or contractor's expense. The testing shall be ordered by the developer or contractor, and the chosen testing lab shall be approved by the City Construction inspector. Testing shall be done on all materials and construction as specified in the WSDOT/APWA Standard Specifications and with frequency as specified in the current City of Tumwater Development Guide.

35. Frontage improvements are required per Tumwater Municipal Code 12.12.010. These improvements include separated sidewalks, curb and gutter, street patch, street lighting, bike lanes, street trees/landscaping, and any storm drainage necessary to take care of the impervious area in the right-of-way. The applicant is responsible to the centerline of the right-of-way. Dedication of additional right-of-way to contain the improvements is required.

    a. Tumwater Blvd is a future three lane section. The project shall complete pavement widening to ensure 23' of pavement from CL of existing right-of-way to face of curb (12' vehicle lane, 11' widened shoulder), concrete curb and gutter, 6' planter, street trees, street lighting, 6' sidewalk, and any dedication necessary to contain the improvements. Street lighting on Tumwater Blvd shall have a 35' mounting height with 8' arms. Street lighting will be provided at every intersection and then every 150'. The structural section of the road shall be 0.50' HMA, 0.20' CSTC, 1.50' CSBC.
    b. The internal roads meeting the local access standard shall provide 32' of pavement, concrete curb and gutter, 6' planters with street trees and streetlights, 6' sidewalks. The structural section of the internal roads shall be 0.33' HMA, 0.20' CSTC, 0.80' CSBC. Streetlight spacing shall be 120' and at every intersection, streetlights shall be 25' poles with 6' arms.
    c. The road shall terminate in a cul-de-sac with a radius not less than 35' from center to face of curb.

36. All access to the property will be consistent with City standards and policies.

37. The project will rechannelization the portion of Tumwater Blvd across its frontage to provide a center turn lane and two vehicle lanes to the maximum extent feasible.

38. All access to the property will be consistent with City standards and policies.

39. The project will rechannelization the portion of Tumwater Blvd across its frontage to provide a center turn lane and two vehicle lanes to the maximum extent feasible.

40. A drainage design and erosion control plan will be required according to City's 2022 Drainage Design and Erosion Control Manual.

41. The project will address stormwater runoff for on-site and off-site improvements.

42. Maintenance of the on-site stormwater system will be the responsibility of the property owner and a maintenance agreement will be recorded against the property.

43. Test pits conducted for stormwater design will comply with the 2022 Drainage Design and Erosion Control Manual for location and frequency. Test pits will be conducted between December and April to accommodate for seasonal high groundwater.

44. The project shall complete a stormwater scoping meeting with City engineering staff.

45. Sewer is available on Tumwater Blvd, the project shall connect to the City sewer and extend services to all newly created lots.

46. Any sewer main extension will require a minimum of an 8" system. The main size will depend on the requirements for this project. The system shall be designed per the City of Tumwater Development Guide and current Sewer Comprehensive Plan. Max spacing between manhole shall be 300 feet and at every intersection.

47. One 6" lateral should be extended to serve two units with a 6" cleanout at the common property line/corner. This cleanout will be the City owned portion of the lateral.

48. The project shall coordinate with the City on alterations to the existing lift station access. One concrete driveway 30' in width shall be provided for access, additional pavement work will be necessary to provide a hammerhead-style turnaround and eliminate the additional existing pavement that is no longer necessary. Removable bollards shall be installed off the back of future walk to restrict access. A water meter service line and setter shall be extended to the lift station from the new water main in Tumwater Blvd.

49. The project must meet minimum fire flow requirements.

50. Back flow prevention is required on all fire services and irrigation services and in accordance with the AWWA Cross Connection Control Manual. A reduced pressure backflow assembly is required on all commercial domestic services per WAC 246-290-490.

51. Off-site water main extension is required, water main in Tumwater Blvd shall be a 16" diameter main per the Water Comprehensive plan.

52. All other water main extensions will require a minimum of an 8" system. Water shall be extended to all newly created lots. The main size will depend on the fire flow requirements for this project. The system shall be designed per the City of Tumwater Development Guide and current Water Comprehensive Plan. Hydrants will be set per the Building Department.

53. Water meters need to be placed in the public right-of-way or clustered on site within an easement.

Submitted on Behalf Of the City of Tumwater Community Development Department by/ Staff Contact:

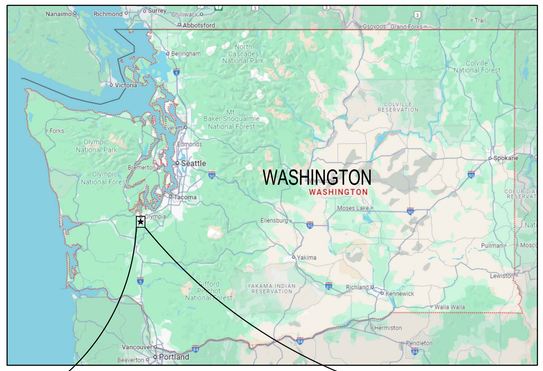
Alex Baruch, Senior Planner, AICP
Phone: (360) 754-4180
E-mail: abaruch@ci.tumwater.wa.us

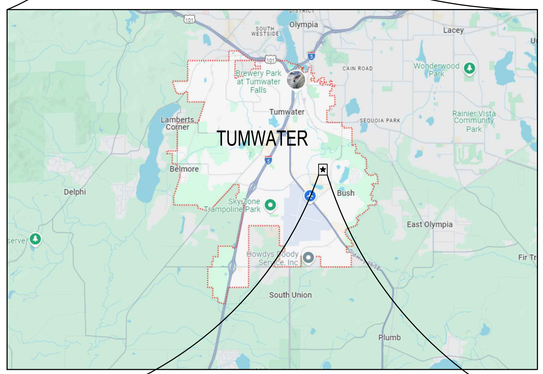
Report Issue Date: September 17, 2025

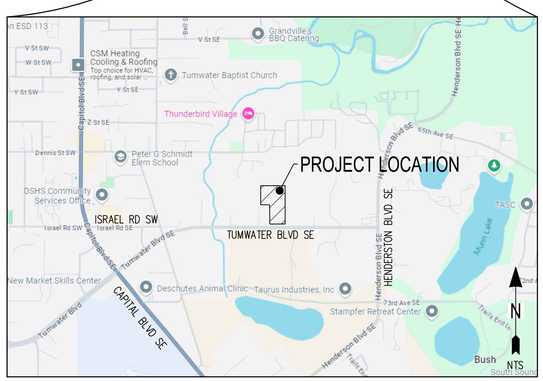
List of Exhibits:

Exhibit 1. Staff Report September 24, 2025
Exhibit 2. Vicinity Map
Exhibit 3. Zoning map
Exhibit 4. Preliminary Civil Plans 06-04-2025
Exhibit 5. Public Notice Certification 09-12-2025
Exhibit 6. Notice of Application with Optional MDNS 06-27-2025
Exhibit 6a-c. Notice of Application Comments
Exhibit 7. Mitigated Determination of Non-significance with SEPA Checklist 07-25-2025
Exhibit 8 Public Hearing Notice 09-12-2025
Exhibit 9. Traffic Scoping Memo 06-10-2025
Exhibit 10. Concurrency Ruling 06-11-2025
Exhibit 11. Critical Area Report 06-04-2025
Exhibit 12. Gopher Report 06-04-2025
Exhibit 13. Arborist Report 06-04-2025
Exhibit 14. Drainage Report 06-04-2025
Exhibit 15. Regulated Prairie Absence Report 06-04-2025
Exhibit 16. Preliminary Floor Plan and Elevations 06-04-2025
Exhibit 17. Water and Sewer Availability Letter 06-04-2025
Exhibit 18. Project Narrative 06-04-2025
Exhibit 19. Title Report 06-04-2025

TUMWATER BOULEVARD TOWNHOME CONDOMINIUMS
SITE PLAN REVIEW
TUMWATER, WASHINGTON







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COMCAST
PHONE: 800.934.6489
CENTURYLINK
PHONE: 886.963.6665

REFUSE
LEMAY PACIFIC DISPOSAL
PHONES: 360.923.0111

SITE INFORMATION
ADDRESS: 715 DENNIS ST SE
934 TUMWATER BLVD SE
PARCEL: 79300001100 & 79300001200
ACRES: ±10.77
ZONING: SINGLE FAMILY MEDIUM DENSITY RESIDENTIAL (SFM & SFM2) WITH AIRPORT OVERLAY

LEGAL DESCRIPTION
SEE ALTA/NSPS LAND TITLE SURVEY

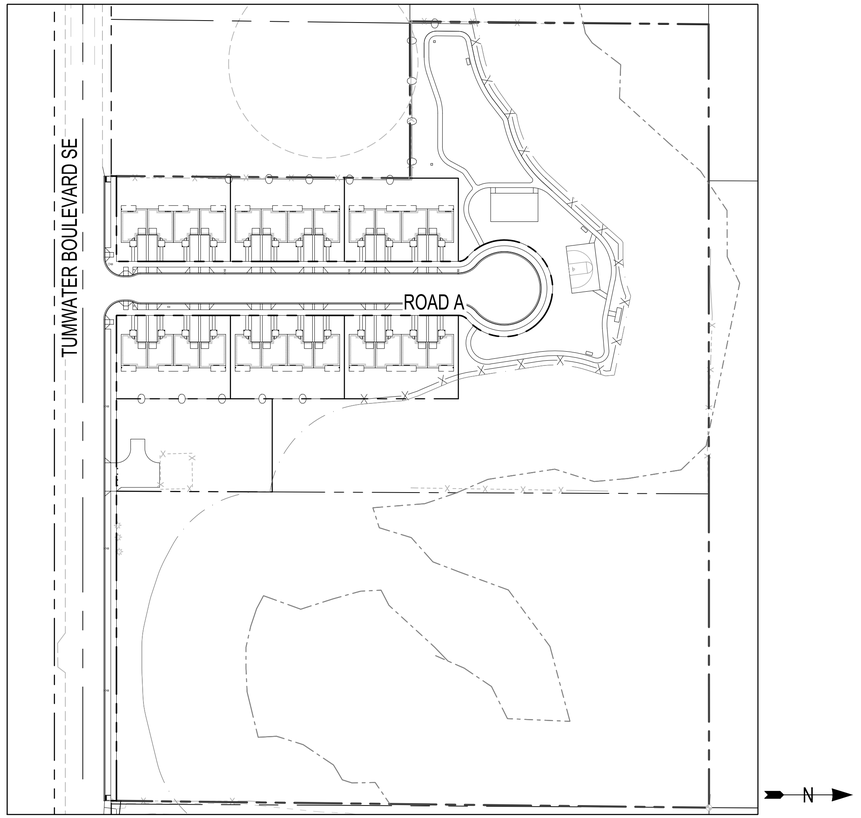
HORIZONTAL DATUM
HELD CENTER OF SECTION (TC POINT 6475) POSITION AS BASE POINT FOR THURSTON COUNTY DATUM. SCALED GPS OBSERVATIONS ABOUT THIS POINT FOR GROUND SCALE. CSF FOR PROJECT IS 0.999935457. PROJECT IS ON GROUND SCALE AND WSPC, S2, NAD 83/91.

VERTICAL DATUM
VERTICAL DATUM IS NGVD 29 BASED ON TIES TO THURSTON COUNTY MONUMENTS OLY–AIR ELEV 189.20 AND NGS–Q–531 ELEV 186.51.

TOWNSHIP, RANGE, AND SECTION
A PORTION OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 2, TOWNSHIP 17 NORTH, RANGE 2 WEST, WILLAMETTE MERIDIAN

SHEET INDEX

SHEET	TITLE
CV–01	COVER SHEET
SV–01	ALTA/NSPS LAND TITLE SURVEY
SV–02	ALTA/NSPS LAND TITLE SURVEY
SV–03	ALTA/NSPS LAND TITLE SURVEY
PL–01	PRELIMINARY PLAT MAP
SP–01	PRELIMINARY SITE PLAN
XS–01	PRELIMINARY ROAD SECTIONS
CG–01	PRELIMINARY GRADING PLAN
SD–01	PRELIMINARY STORMWATER PLAN
WT–01	PRELIMINARY WATER PLAN
SS–01	PRELIMINARY SEWER PLAN
FR–01	PRELIMINARY FRONTAGE IMPROVEMENTS
FR–02	PRELIMINARY FRONTAGE GRADING & STORM
LS–01	OVERALL LANDSCAPE PLAN
LS–02	SOUTH LANDSCAPE PLAN
LS–03	NORTH LANDSCAPE PLAN
LS–04	LANDSCAPE DETAILS
IR–01	OVERALL IRRIGATION PLAN
IR–02	SOUTH IRRIGATION PLAN
IR–03	NORTH IRRIGATION PLAN
IR–04	IRRIGATION DETAILS
IR–05	IRRIGATION DETAILS



OVERALL SITE PLAN
1" = 80'

GEOTECHNICAL & WABO INSPECTION NOTE:
THE CITY OF TUMWATER REQUIRES THAT THE FIRM PROVIDING THE SOILS REPORT, INSIGHT GEOLOGIC, CONDUCT THE SITE INSPECTIONS AS DEFINED IN THE REPORT. THE CITY ALSO REQUIRES THAT IN ADDITION TO THE SOILS ENGINEERING FIRM, A WABO REGISTERED SPECIAL INSPECTOR WITH EXPERIENCE WITH SOIL GRADING BE EMPLOYED, BY THE OWNER, TO CONDUCT COMPACTION TESTING FOR THE BUILDING PADS AND THE REQUIRED FIRE LANES. THE SPECIAL INSPECTOR SHALL NOT BE THE GEOTECHNICAL FIRM, THE CIVIL ENGINEER OF RECORD OR AN EMPLOYEE OF THE CONTRACTOR. ALL GRADING WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE SOILS REPORT PREPARED BY INSIGHT GEOLOGIC. COMPACTION TESTING OF THE SOILS UNDER THE FIRE LANES AND THE BUILDING FOUNDATIONS AND UTILITY TRENCHES SHALL BE VERIFIED BY INSIGHT GEOLOGIC AND THE WABO SPECIAL INSPECTOR.

INADVERTENT DISCOVERY NOTE:
WHEN AN UNANTICIPATED DISCOVERY OF PROTECTED CULTURAL MATERIAL (E.G., BONES, SHELLS, STONE TOOLS, BEADS, CERAMICS, OLD BOTTLES, HEARTHS, ETC.) OR HUMAN REMAINS ARE DISCOVERED, THE PROPERTY OWNER OR CONTRACTOR WILL IMMEDIATELY STOP ALL WORK, COMPLETELY SECURE THE LOCATION, AND CONTACT THE WASHINGTON STATE DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION AND OTHER CONTACTS AS IDENTIFIED IN THE CITY OF TUMWATER STANDARD INADVERTENT ARCHAEOLOGICAL AND HISTORIC RESOURCES DISCOVERY PLAN. THE INDIVIDUAL OR REPRESENTATIVE WHOM THE PERMIT WAS ISSUED TO MUST SEND WRITTEN NOTIFICATION OF THE INADVERTENT DISCOVERY TO THE CITY OF TUMWATER DEPARTMENT OF COMMUNITY DEVELOPMENT.

SURVEY MONUMENT NOTE
THE PROFESSIONAL LAND SURVEYOR RESPONSIBLE FOR THE SURVEYING OF THE PROJECT MUST OBTAIN A PERMIT FROM DNR BEFORE ANY MONUMENTS ARE DISTURBED.

DEWATERING NOTE
THE CONTRACTOR SHALL UTILIZE APPROPRIATE DEWATERING SYSTEMS AND TECHNIQUES TO MAINTAIN THE EXCAVATED AREA SUFFICIENTLY DRY FROM GROUNDWATER AND/OR SURFACE RUNOFF SO AS NOT TO ADVERSELY AFFECT CONSTRUCTION PROCEDURES OR CAUSE EXCESSIVE DISTURBANCE OF UNDERLYING NATURAL GROUND. THE CONTRACTOR SHALL REPAIR ANY DAMAGE RESULTING FROM THE FAILURE OF THE DEWATERING OPERATIONS OR FROM A FAILURE TO MAINTAIN ALL THE AREAS OF WORK IN A SUITABLE DRY CONDITION. UNLESS OTHERWISE SPECIFIED, CONTINUE DEWATERING UNINTERRUPTED UNTIL THE STRUCTURES, PIPES, AND APPURTENANCES TO BE BUILT HAVE BEEN PROPERLY INSTALLED, BACKFILLED, AND COMPACTED. WHERE SUBGRADE MATERIALS ARE UNABLE TO MEET THE SUBGRADE DENSITY REQUIREMENTS DUE TO IMPROPER DEWATERING TECHNIQUES, REMOVE AND REPLACE THE MATERIALS AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL NOTE
THE CONTRACTOR SHALL PROVIDE ALL FLAGGERS, SIGNS, AND OTHER TRAFFIC CONTROL DEVICES AS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL CONSTRUCTION SIGNS, WARNING SIGNS, DETOUR SIGNS, AND OTHER TRAFFIC CONTROL DEVICES NECESSARY TO WARN AND PROTECT THE PUBLIC AT ALL TIMES FROM INJURY OR DAMAGE AS A RESULT OF THE CONTRACTOR'S OPERATIONS THAT MAY OCCUR IN HIGHWAYS, ROADS, OR STREETS. NO WORK SHALL BE DONE ON OR ADJACENT TO THE ROADWAY UNTIL ALL NECESSARY SIGNS AND TRAFFIC CONTROL DEVICES ARE IN–PLACE. THE CONTRACTOR SHALL NOT CLOSE DOWN THROUGH TRAFFIC ON CITY/COUNTY/STATE ROADS. ACCESS FOR BOTH VEHICULAR AND PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT WHERE THE CONTRACTOR OBTAINS PERMISSION TO TEMPORARILY CLOSE A SIDEWALK. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO CITY OF TUMWATER FOR REVIEW AND APPROVAL PRIOR TO STARTING ANY WORK IN THE RIGHT–OF–WAY.

CALL BEFORE YOU DIG
THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

VERTICAL DATUM
NGVD 29

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES

OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501

STAMP
WHITNEY E. DUNLAP
STATE OF WASHINGTON
22774
REGISTERED
PROFESSIONAL ENGINEER
5/19/2025

TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
COVER SHEET

SHEET
CV–01

May 19, 2025 1:53:38pm – User.WhitneyDunlap
N:\2 – PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD – MULTIFAMILY\ACAD\100.006 CV–01.DWG

ALTA/NSPS LAND TITLE SURVEY
A PORTION OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 2, TOWNSHIP 17 NORTH, RANGE 2 WEST, WILLAMETTE MERIDIAN

LEGEND (UTILITIES)

- CABLE MARKER POST
- CABLE RISER/ PEDESTAL
- CABLE VAULT/MANHOLE
- CULVERT
- LUMINAIRE WITH ARM
- LUMINAIRE
- LANDSCAPE/YARD LIGHT
- NATURAL GAS MARKER POST
- NATURAL GAS METER
- PROPANE TANK
- NATURAL GAS VALVE
- POWER CONDUIT
- GUY ANCHOR
- GUY POLE
- POWER JUNCTION BOX
- POWER MARKER POST
- POWER METER
- POWER POLE
- PP WITH DROP LINE
- PP WITH DROP AND LIGHT
- PP WITH DROP, LIGHT AND TRANSFORMER
- PP WITH DROP AND TRANSFORMER
- PP WITH LIGHT AND TRANSFORMER
- PP WITH LIGHT
- PP WITH TRANSFORMER
- POWER TRANSFORMER
- POWER VAULT/ MANHOLE
- SIGNAL POLE ARM
- SS CLEANOUT
- SS MANHOLE
- SS MARKER POST
- SEPTIC TANK
- STORM CATCH BASIN
- STORM MANHOLE
- STORM CLEANOUT
- STORM ROOF DRAIN
- STORM YARD DRAIN
- STORM MARKER POST
- TELEPHONE CABINET
- TELEPHONE JUNCTION BOX
- TELEPHONE RISER
- TELEPHONE MARKER POST
- TELEPHONE POLE
- TELEPHONE VAULT/MANHOLE
- WATER AIR RELEASE VALVE
- WATER BLOW OFF
- FIRE DEPARTMENT CONNECTION
- HOSE BIB
- IRRIGATION CONTROL VALVE
- WATER MARKER POST
- WATER METER
- WATER POST INDICATOR VALVE
- SPRINKLER HEAD
- WATER VALVE
- WATER FIRE HYDRANT
- WATER VAULT/MANHOLE
- WELL

LEGEND (SURFACE FEATURES)

- DECIDUOUS TREE
- CONIFER TREE
- MAPLE TREE
- DOUGLAS-FIR TREE
- STUMP
- SHRUB
- BIKE RACK
- MAIL BOX
- WHEEL STOP
- STREET SIGN (AS DESCRIBED)
- ALUMINUM CAP
- AERIAL PANEL
- BRASS CAP
- CONCRETE MONUMENT
- HUB AND TACK
- IRON PIPE
- LEAD AND TACK
- MAG NAIL
- MONUMENT IN CASE
- PK NAIL
- REBAR AND CAP
- SCRIBE
- STONE

HATCHING

- GRAVEL
- ASPHALT
- CONCRETE

LINE TYPES

- WOOD FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- GROUND TOE
- GROUND TOP
- GROUND BREAK
- STORM LINE
- SANITARY SEWER LINE
- BURIED TELEPHONE
- OVERHEAD TELEPHONE
- BURIED POWER
- OVERHEAD POWER
- WATER LINE
- IRRIGATION LINE
- RECLAIMED WATER
- NATURAL GAS LINE
- BURIED CABLE TV LINE
- BURIED FIBER OPTIC LINE
- SANITARY FORCED MAIN
- WETLAND LINE
- RACK LINE
- DITCH LINE
- MAJOR CONTOUR
- MINOR CONTOUR

(X) SCHEDULE B TITLE EXCEPTIONS

10. PUBLIC AND/OR PRIVATE EASEMENTS, IF ANY, IN EXISTENCE, OVER, UNDER, ALONG AND ACROSS THAT PORTION OF THE REAL ESTATE UNDER SEARCH LYING WITHIN VACATED STREET OR ALLEYWAY.
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 SHORT SUBDIVISION NO. SS-1856:
    RECORDING NO: 8306200008
12. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: PUGET SOUND POWER & LIGHT COMPANY
    PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION LINE
    RECORDING DATE: OCTOBER 23, 1984
    RECORDING NO.: 8410230052
    AFFECTS: PORTION OF LOT 1 OF SS-1856
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, MARITALSTATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERALLAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS SET FORTH ON LARGE LOT SUBDIVISION NO. LL-0605:
    RECORDING NO: 9205080108
14. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: CITY OF TUWMATER
    PURPOSE: SLOPES FOR CUTS AND FILLS
    RECORDING DATE: AUGUST 17, 1993
    RECORDING NO.: 9308170286
    AFFECTS: PORTION OF LOT 3 OF LL-0605
15. RIGHT TO MAKE NECESSARY SLOPES FOR CUTS OR FILLS UPON PROPERTY HEREIN DESCRIBED AS GRANTED OR RESERVED IN DEED
    IN FAVOR OF: CITY OF TUMWATER
    RECORDING DATE: JANUARY 18, 1994
    RECORDING NO.: 9401180245
    AFFECTS: PORTION OF LOT 12
16. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: PUGET SOUND POWER & LIGHT COMPANY
    PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION LINE
    RECORDING DATE: OCTOBER 4, 1994
    RECORDING NO.: 9410040217
    AFFECTS: PORTION OF LOT 1 OF SS-1856
17. MATTERS DISCLOSED BY SURVEY RECORDED UNDER AUDITOR'S FILE NO. 3035544, AS FOLLOWS: FENCE LINE ALONG THE WEST BOUNDARY OF LOTS 1 AND 2 OF SS-1856 DO NOT CONFORM TO THE PROPERTY LINE AS SHOWN.
18. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: CITY OF TUMWATER
    PURPOSE: WATER MAIN
    RECORDING DATE: MAY 13, 2008
    RECORDING NO.: 4010031
    AFFECTS: PORTION OF LOT 2 OF LL-0605
19. AGREEMENT FOR WATER MAIN EXTENSION AND LATECOMERS FEES WITH THE CITY OF TUWMATER, AND THE TERMS AND CONDITIONS THEREOF:
    AMOUNT: $89,160.71
    RECORDING DATE: NOVEMBER 18, 2011
    RECORDING NO.: 4238612
    AFFECTS: LOT 2 OF LL-0605
20. AGREEMENT FOR SANITARY SEWER EXTENSION AND LATECOMERS FEES WITH THE CITY OF TUWMATER, AND THE TERMS AND CONDITIONS THEREOF:
    AMOUNT 7930001100: $114,549.13
    AMOUNT 7930001200: $98,803.27
    AMOUNT 7930001400: $76,912.68
    RECORDING DATE: NOVEMBER 18, 2011
    RECORDING NO.: 4238613

(EXCEPTIONS PER CHICAGO TITLE COMMITMENT NUMBER 170016114 WITH EFFECTIVE DATE OF FEBRUARY 3, 2017)

LEGAL DESCRIPTION

LOTS 1 AND 2 OF SHORT SUBDIVSION NO. SS-1856, AS RECORDED JUNE 20, 1983 UNDER AUDITOR'S FILE NO. 8306200008; EXCEPT THAT PORTION OF SAID LOT 1 CONVEYED TO THURSTON COUNTY FOR RIGHT OF WAY BY DEED RECORDED FEBRUARY 8, 1994 UNDER AUDITOR'S FILE NO. 9402080333. IN THURSTON COUNTY, WASHINGTON
AND
LOTS 2 AND 3 OF LARGE LOT SUBDIVISION NO. LL-0605, AS RECORDED MAY 8, 1992 UNDER AUDITOR'S FILE NO. 9205080108. IN THURSTON COUNTY, WASHINGTON
AND
LOT 12 OF THOMPSON'S ADDITION TO BRIGHTON PARK, AS RECORDED IN VOLUME 7 OF PLATS, PAGE 29 1/2; TOGETHER WITH THE WESTERLY 30 FEET OF VACATED THOMPSON STREET ADJOINING ON THE EAST, WHICH UPON VACATED ATTACHED TO SAID PREMISES BY OPERATION OF LAW PURSUANT TO RESOLUTION NO. 5872 ADOPTED JUNE 6, 1978; EXCEPT ANY MOBILE OR MANUFACTURED HOME LOCATED THEREON.
IN THURSTON COUNTY, WASHINGTON

SURVEY NOTES

1. INSTRUMENT USED: SOKKIA SRX 3 TOTAL STATION AND TOPCON GR5 GPS.
2. THIS SURVEY MEETS OR EXCEEDS THE STANDARDS OF WAC 332-130-090
3. SURVEY COMPLETED JULY 2017
4. ALL MONUMENTS SHOWN AS FOUND VISITED JULY 2017.
5. THERE ARE NO DESIGNATED PARKING SPACES ON THE SITE.
6. CITY OF TUMWATER SEWER LIFT STATION EXIST ON TRACT 12.
7. HOUSES ON ALL LOTS ARE VERY DILAPIDATED.
8. WETLANDS FLAGGED BY OTHERS.

DATUM

HELD CENTER OF SECTION (TC POINT 6475) POSITION AS BASE POINT FOR THURSTON COUNTY DATUM. SCALED GPS OBSERVATIONS ABOUT THIS POINT FOR GROUND SCALE. CSF FOR PROJECT IS 0.999935457. PROJECT IS ON GROUND SCALE AND STATE PLANE GRID BEARINGS.

VERTICAL IS NGVD 29 BASED ON TIES TO THURSTON COUNTY MONUMENTS OLY-AIR ELEV 189.20 AND NGS-Q-531 ELEV 186.51

(X) EASEMENTS NOT INCLUDED IN TITLE REPORT

21. SEWER LIFT STATION EASEMENT AND INGRESS AND EGRESS EASEMENT, AND TERMS AND CONDITIONS THEREOF:
    GRANTED TO: CITY OF TUMWATER
    PURPOSE: SEWER LIFT STATION
    RECORDING DATE:JUNE 14, 2007
    RECORDING NO.: 3935011 AND 3935010

CERTIFICATION

TO: SAPPHIRE RE PROPERTY HOLDINGS, LLC , CHICAGO TITLE INSURANCE COMPANY OF WASHINGTON :
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 4, 5, 7A, 8, 9, 11, 13 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON JUNE, 2017.

DATE OF PLAT OR MAP: JULY 12, 2017

BLAIR PRIGGE, PLS 29278

SHEET INDEX

SV-0	NOTES, LEGAL DESCRIPTION, TITLE EXCEPTIONS AND DATUM
SV-1	OVERALL BOUNDARY AND EASEMENTS
SV-2	TOPOGRAPHY - SOUTHWEST
SV-3	TOPOGRAPHY - NORTHWEST
SV-4	TOPOGRAPHY - EAST SIDE

DATE	7/12/2017
SCALE	1" = 80'
M2C PROJECT NO.:	17-591
DRAWN	BEP
CHECKED	BEP
APPROVED	BEP

BLAIR E. PRIGGE — STATE OF WASHINGTON — 29278 — REGISTERED PROFESSIONAL LAND SURVEYOR

MTN 2 COAST, LLC
1506 FAIRVIEW ST SE
OLYMPIA, WA 98501
360.239.1497

PROJECT NAME: ALTA/NSPS LAND TITLE SURVEY - TUMWATER BLVD

CLIENT NAME: SCJ ALLIANCE

SHEET NAME: SV-1

SHEET NO. 1 OF 5

DENNIS STREET

THUNDERBIRD VILLAGE RESIDENTS ASSOC
TPN 12702130500
ADDRESS: 706 DENNIS ST SE

DENNIS STREET

328.35
N88°08'37"W

660.60
N88°08'37"W

ACCORDING TO TITLE COMPANY VACATED DENNIS ST WAS NOT TRANSFERRED IN DEED. OWNERSHIP UNCERTAIN

ACCORDING TO TITLE COMPANY VACATED DENNIS ST WAS NOT TRANSFERRED IN DEED. OWNERSHIP UNCERTAIN

THUNDERBIRD VILLAGE RESIDENTS ASSOC
TPN 12702130500
ADDRESS: 706 DENNIS ST SE

OLD HOUSE
24.5'X 55.9'

N02°15'07"E
165.00

HELD EAST LINE OF SILVER RIDGE PLAT

65.45
N88°08'13"W

N02°08'10"E
465.87

SILVER RIDGE
VOLUME 27, PAGE
42 PLATS

LOT 21
TPN 74290002100
ADDRESS: 793 SILVER RIDGE WAY SE

LOT 23
TPN 74290002300
ADDRESS: 790 SILVER RIDGE WAY SE

OLD WELL HOUSE
8.0'X 8.0'

TRACT A
SILVER RIDGE
VOLUME 27, PAGE
42 PLATS

TPN 74290000000
ADDRESS: 6730
SILVER RIDGE DR SE

TPN 79300000300
ADDRESS: 715 DENNIS ST SE
19.435 ACRES

TRACT 2 LLS-06605

TPN 79300000101
ADDRESS: UNKNOWN

N02°04'08"E
631.48

M2C

0' 80' 160'

SCALE 1" = 80'

MONUMENT NOTES

1. FOUND 1/2" REBAR AND CAP, GLIDDEN 5329. 2.3' WEST OF CALC'D POSITION.
2. FOUND 1" OD IRON PIPE, 3.5' WEST OF CALC'D POSITION.
3. FOUND 1/2" REBAR AND CAP, LS 5154, 2.9' WEST OF CALC'D POSITION.
4. FOUND 1/2" REBAR AND CAP, LS 5154, 4.8' WEST OF CALC'D POSITION.
5. FOUND SURFACE BRASS CAP, PLAT MONUMENT

S88°07'02"E
165.26

S88°07'02"E
330.49

S88°07'02"E
331.32

S88°07'02"E
333.66

S88°07'02"E
329.09

TPN 79300000094
ADDRESS: 804
TUMWATER BLVD SE

315.40
S02°07'19"W

TRACT 3
LLS-06605

TPN 79300001100
ADDRESS: 715 DENNIS ST SE
5.981 ACRES

TPN 79300001200
ADDRESS: 934 TUMWATER BLVD SE
4.792 ACRES

LOT 2 SS-2771
AFN 3035544

LOT 1 SS-2771
AFN 3035544

OLD HOUSE
25.7'X 58.3'

OUT HOUSE

LOT 2 SS-1856

TPN 79300001401
ADDRESS: 1046 TUMWATER BLVD SE
1.744 ACRES

S88°07'02"E
328.64

TPN 79300001400
ADDRESS: 1030 TUMWATER BLVD SE
2.894 ACRES

TPN 79300001500
ADDRESS: 6911 HENDERSON BLVD SE

N01°57'29"E
623.25

N02°04'08"E
586.00

LOT 1 SS-1856

SS-0300
AFN 973660

S88°06'15"E
165.18

TPN 79300001000
ADDRESS: 816
TUMWATER BLVD SE

N02°08'10"E
315.44

TPN 79300001302
ADDRESS: 1008
TUMWATER BLVD SE

631.19
S02°15'51"W

TPN 79300001300
ADDRESS: 1010
TUMWATER BLVD SE

SHED AND WELL HOUSE

OLD HOUSE
48.0'X 57.0'

S71°23'31"E
10.70

N01°54'32"E
10.00

200.00

N67°40'52"E
74.28

N02°04'08"E
45.48

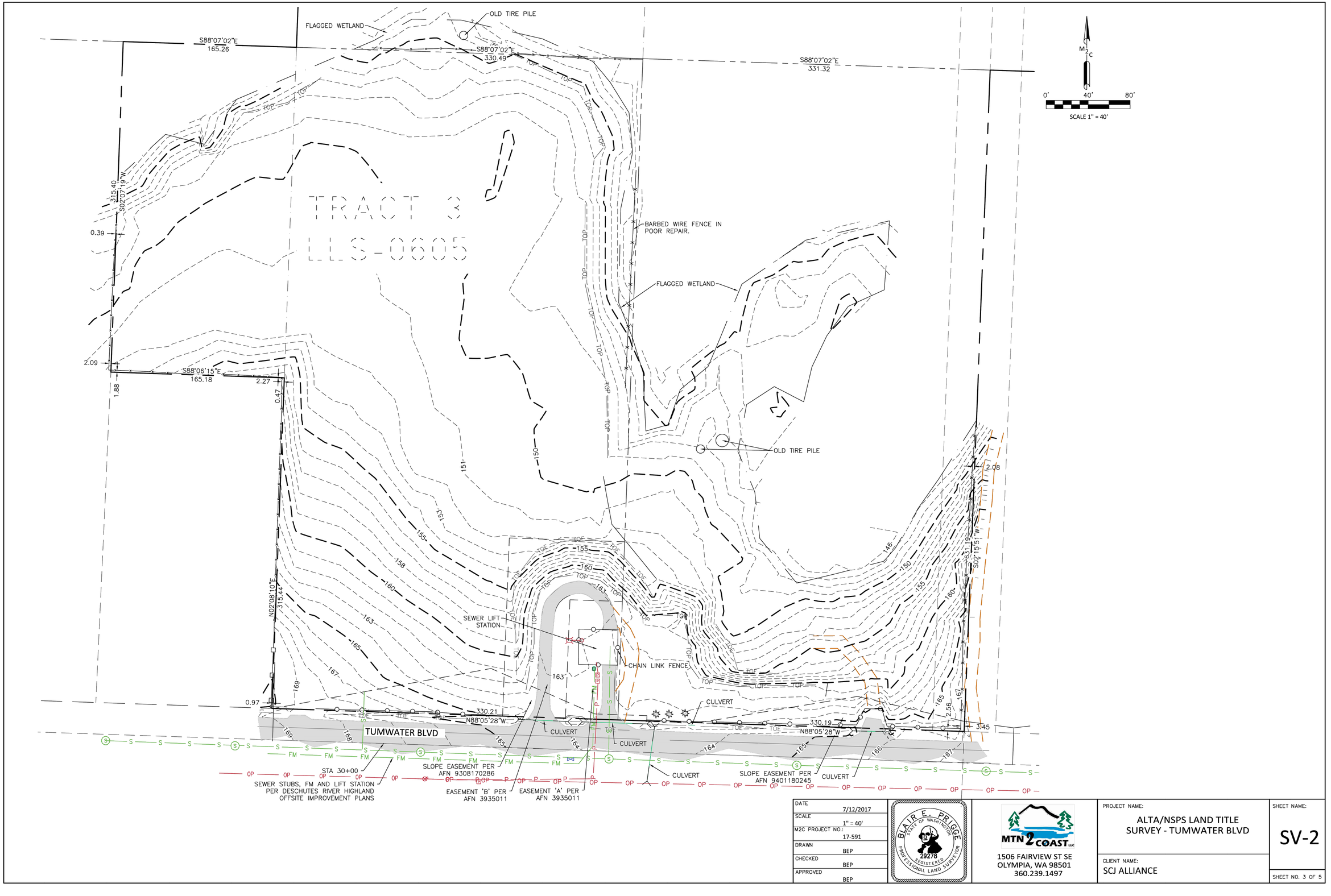
330.21
N88°05'28"W

330.19
N88°05'28"W

N88°05'28"W
50.00

TUMWATER BLVD

OP OP OP



DATE	7/12/2017
SCALE	1" = 40'
M2C PROJECT NO.:	17-591
DRAWN	BEP
CHECKED	BEP
APPROVED	BEP

BLAIR E. PRIGGE
STATE OF WASHINGTON
29278
REGISTERED
PROFESSIONAL LAND SURVEYOR

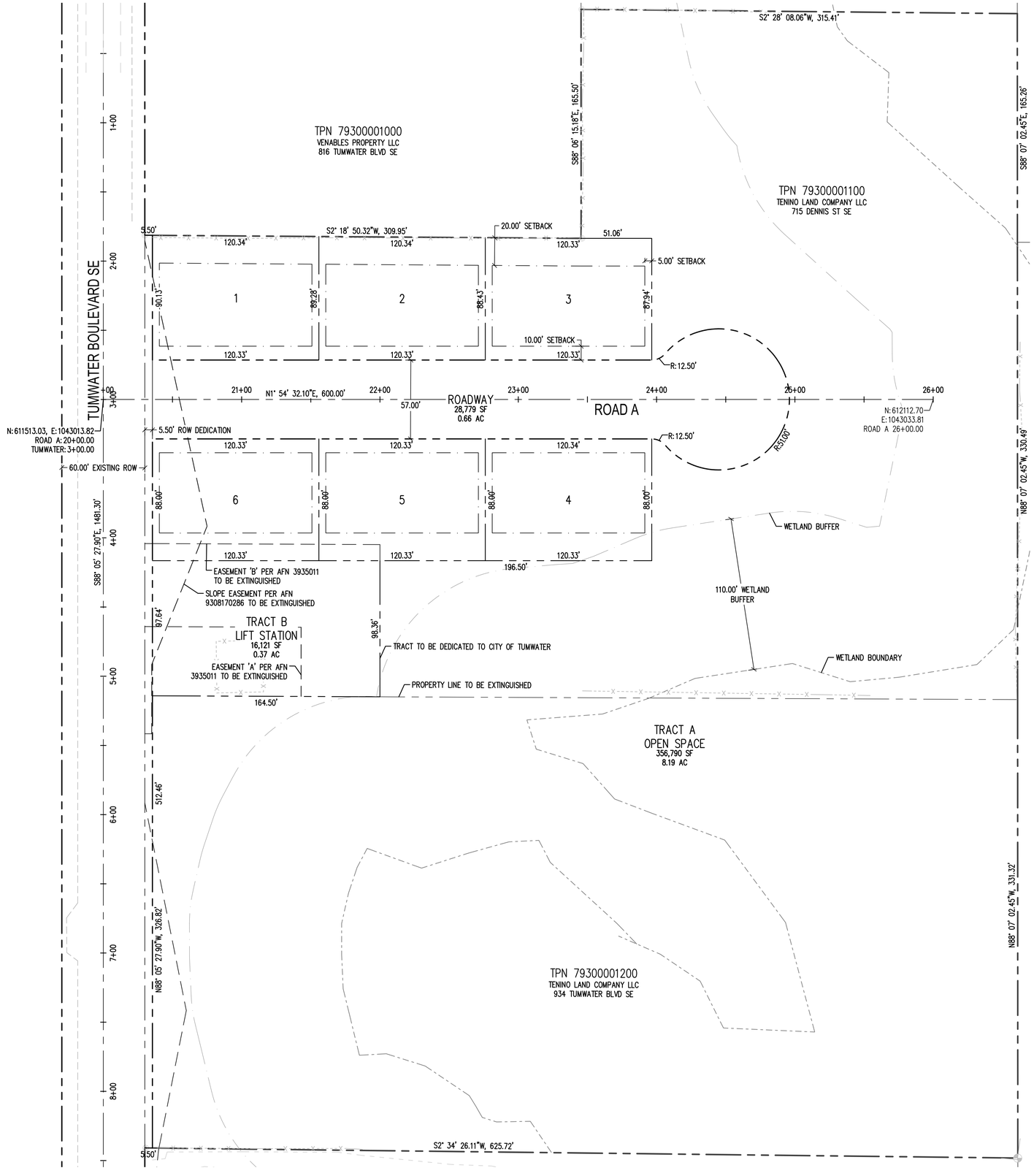
MTN 2 COAST, LLC
1506 FAIRVIEW ST SE
OLYMPIA, WA 98501
360.239.1497

PROJECT NAME:
ALTA/NSPS LAND TITLE SURVEY - TUMWATER BLVD

CLIENT NAME:
SCJ ALLIANCE

SHEET NAME:
SV-2

SHEET NO. 3 OF 5



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0 40 80

SCALE IN FEET

LEGEND

- PROPERTY LINE
- LOT LINE
- SETBACK LINE
- EASEMENT LINE
- EXISTING CHANNELIZATION
- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER

PARCEL AREA TABLE

PARCEL #	AREA (SF)
1	10794
2	10692
3	10599
4	10589
5	10589
6	10589

REVISIONS

PROJECT NO.
100.006

DRAWN
S. JANIK

CHECKED
W. DUNLAP

SUBMITTAL DATES

OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501

STAMP

WHITNEY E. DUNLAP
STATE OF WASHINGTON
23774
REGISTERED
PROFESSIONAL ENGINEER

5/19/2025

TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY PLAT MAP

SHEET
PL-01

May 19, 2025 1:54:43pm – User: WhitneyDunlap
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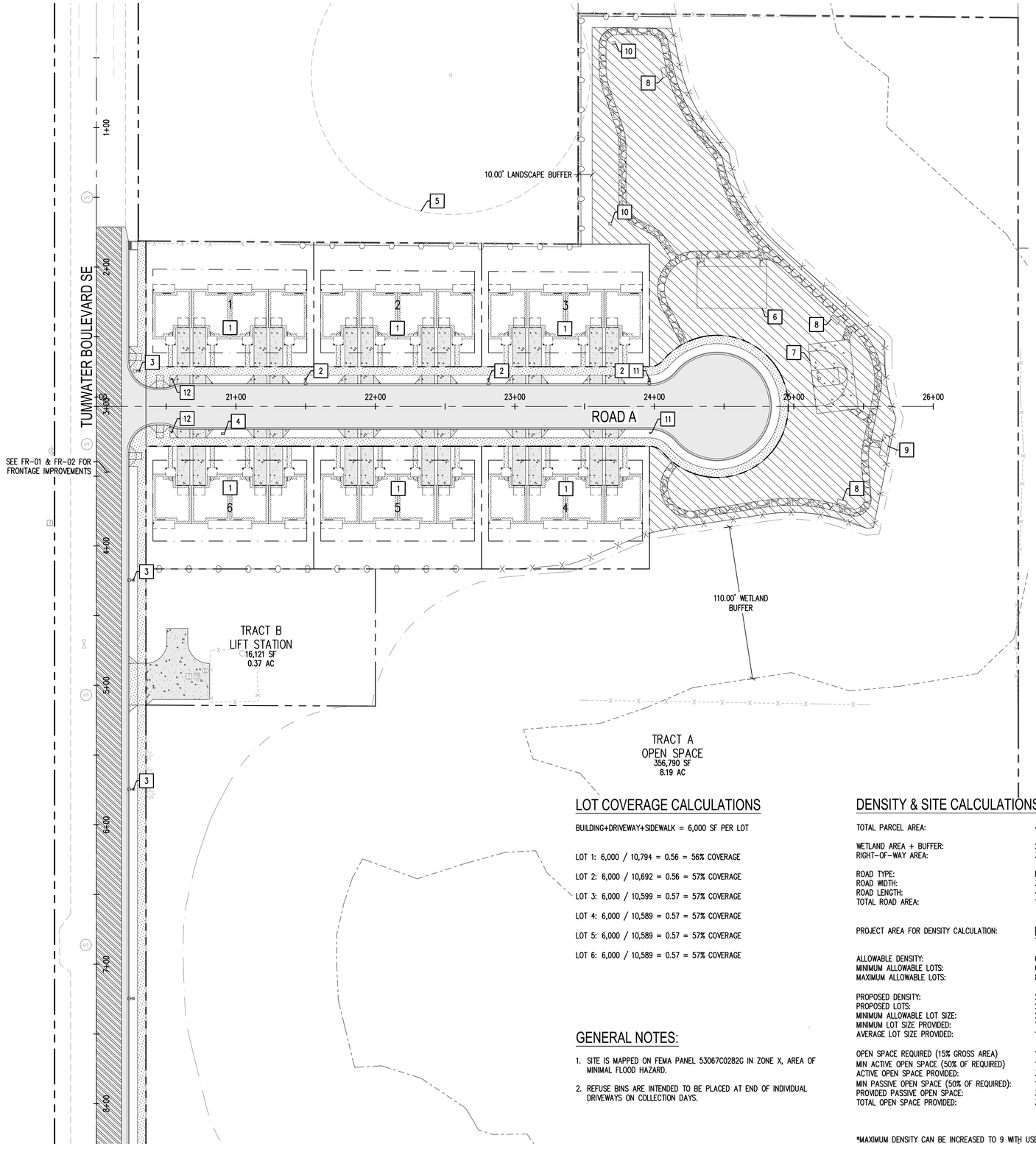


LOT COVERAGE CALCULATIONS

BUILDING+DRIVEWAY+SIDEWALK = 6,000 SF PER LOT

LOT 1: 6,000 / 10,794 = 0.56 = 56% COVERAGE

LOT 2: 6,000 / 10,692 = 0.56 = 57% COVERAGE

LOT 3: 6,000 / 10,599 = 0.57 = 57% COVERAGE

LOT 4: 6,000 / 10,589 = 0.57 = 57% COVERAGE

LOT 5: 6,000 / 10,589 = 0.57 = 57% COVERAGE

LOT 6: 6,000 / 10,589 = 0.57 = 57% COVERAGE

GENERAL NOTES:

1. SITE IS MAPPED ON FEMA PANEL 53067C0282G IN ZONE X, AREA OF MINIMAL FLOOD HAZARD.
2. REFUSE BINS ARE INTENDED TO BE PLACED AT END OF INDIVIDUAL DRIVEWAYS ON COLLECTION DAYS.

DENSITY & SITE CALCULATIONS

TOTAL PARCEL AREA:	469,168 SF	10.77 AC
WETLAND AREA + BUFFER:	287,616 SF	6.60 AC
RIGHT-OF-WAY AREA:	32,405 SF	0.74 AC
ROAD TYPE:	PUBLIC – LOCAL RESIDENTIAL	
ROAD WIDTH:	32 FT	
ROAD LENGTH:	450 FT	
TOTAL ROAD AREA:	14,400 SF	
PROJECT AREA FOR DENSITY CALCULATION:	[SITE AREA] – [CRITICAL AREA] – [ROW] 10.77 – 6.60 – 0.74 = 3.43 AC	
ALLOWABLE DENSITY:	6–8 UNITS PER AC*	
MINIMUM ALLOWABLE LOTS:	6 UNITS PER AC X 3.43 AC = 21 LOTS	
MAXIMUM ALLOWABLE LOTS:	8 UNITS PER AC X 3.43 AC = 27 LOTS	
PROPOSED DENSITY:	24 UNITS / 3.43 AC = 7 LOTS PER AC	
PROPOSED LOTS:	24 CONDOMINIUM TOWNHOMES	
MINIMUM ALLOWABLE LOT SIZE:	2,400 SF	
MINIMUM LOT SIZE PROVIDED:	10,589 SF	
AVERAGE LOT SIZE PROVIDED:	10,642 SF	
OPEN SPACE REQUIRED (15% GROSS AREA)	10.77 AC X 0.15 =	1.62 AC
MIN ACTIVE OPEN SPACE (50% OF REQUIRED)	1.62 AC X 0.50 =	0.81 AC
ACTIVE OPEN SPACE PROVIDED:	36,380 SF	0.84 AC
MIN PASSIVE OPEN SPACE (50% OF REQUIRED):	1.62 AC X 0.50 =	0.81 AC
PROVIDED PASSIVE OPEN SPACE:	334,100 SF	7.67 AC
TOTAL OPEN SPACE PROVIDED:	370,480 SF	8.51 AC

*MAXIMUM DENSITY CAN BE INCREASED TO 9 WITH USE OF DEVELOPMENT CREDITS

N

0 40 80

SCALE IN FEET

LEGEND

- PROPERTY LINE
- LOT LINE
- SETBACK LINE
- EASEMENT LINE
- EXISTING CHANNELIZATION
- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER
- 42" CEDAR SPLIT RAIL WETLAND FENCING PLACE WETLAND BUFFER SIGN EVERY 50'
- 72" CEDAR FENCING
- PROPOSED STREET LIGHT
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- CEMENT CONCRETE SIDEWALK
- CEMENT CONCRETE DRIVEWAYS
- ASPHALT PAVEMENT
- GRIND & OVERLAY
- CEMENT CONCRETE AS NOTED
- DECOMPOSED GRANITE PATHWAY
- ACTIVE OPEN SPACE SEE LANDSCAPE PLANS FOR USE OF AREA

[X] CONSTRUCTION NOTES

1. PROPOSED 4 UNIT, 2–STORY TOWNHOME BUILDING
2. INTERNAL STREET LIGHTING LIGHTS SHALL BE AT A MOUNTING HEIGHT OF 25' WITH AN ARM LENGTH OF 6'. MAXIMUM SPACING 120 FEET ON CENTER
3. TUMWATER BLVD STREET LIGHTING LIGHTS SHALL BE AT A MOUNTING HEIGHT OF 35' WITH AN ARM LENGTH OF 8'. MAXIMUM SPACING 150 FEET ON CENTER
4. MAILBOX CLUSTER
5. 100' WELLHEAD PROTECTION RADIUS
6. PLAYGROUND, CONCRETE PERIMETER WITH WOOD CHIP BASE
7. HALF COURT BASKETBALL
8. BENCH
9. WETLAND VIEWING PLATFORM WITH INFORMATIONAL SIGNAGE
10. DISC GOLF BASKET TARGET
11. "NO PARKING IN CUL–DE–SAC" SIGN
12. "NO PARKING HERE TO CORNER" SIGN

PROJECT INFORMATION

APPLICANT	TENINO LAND COMPANY, TODD HANSEN
ENGINEER	JSA CIVIL, WHITNEY DUNLAP
PARCEL NUMBER	79300001100 & 79300001200
PROPOSED USE	SINGLE FAMILY RESIDENTIAL – TOWNHOME CONDOS
SIZE OF EACH UNIT	± 1,452 SF
FLOOR AREA RATIO	RANGE FROM 0.50 TO 0.60
BUILDING HEIGHT	± 30' (35' MAX ALLOWABLE)
NUMBER OF PARKING SPACES	1 GARAGE SPACE + 1 DRIVEWAY SPACE PER LOT = 48 PARKING SPACES FOR DEVELOPMENT
IMPERVIOUS SURFACE PER LOT	SEE CALCULATIONS THIS SHEET, MAX 70% ALLOWABLE
ZONING	SINGLE FAMILY MEDIUM DENSITY (SFM & SFM2) WITH AIRPORT OVERLAY
WATER	CITY OF TUMWATER
SEWER	CITY OF TUMWATER
SETBACKS	FRONT 10' SIDE 5' (0' FOR CONNECTED UNITS) REAR 20'

REVISIONS

PROJECT NO.
100.006

DRAWN
S. JANIK

CHECKED
W. DUNLAP

SUBMITTAL DATES

OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501

STAMP
WHITNEY E. DUNLAP
STATE OF WASHINGTON
22774
REGISTERED
PROFESSIONAL ENGINEER
5/19/2025

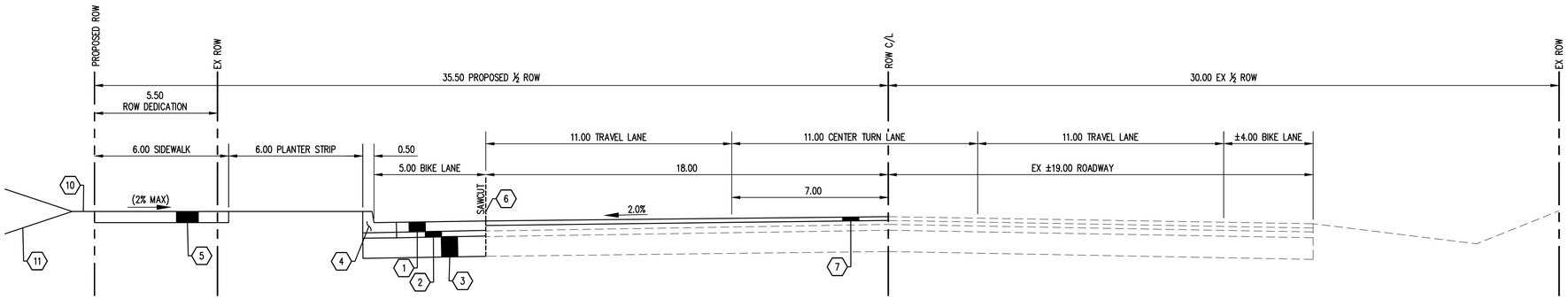
TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY SITE PLAN

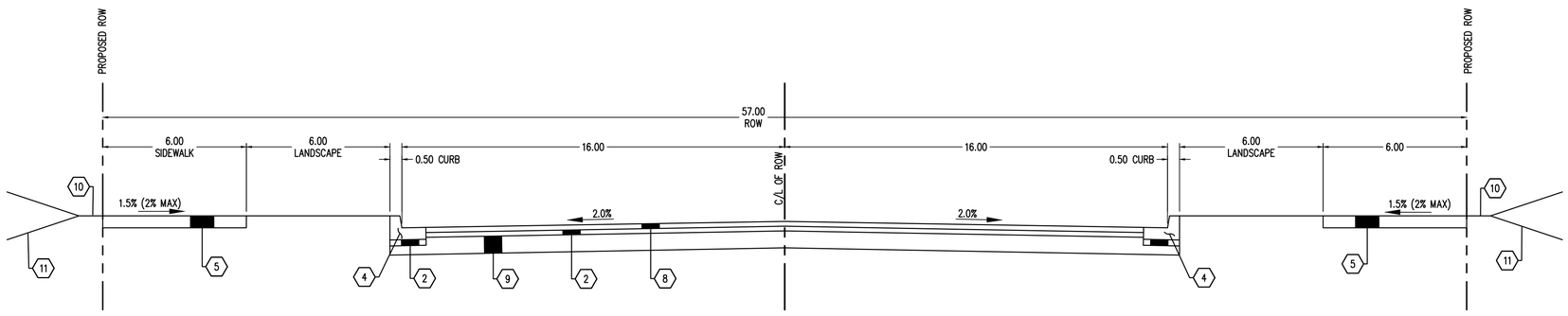
SHEET
SP-01

May 19, 2025 1:55:17pm – User: WhitneyDunlap
N:\2 – PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD – MULTIFAMILY\ACAD\100.006 SP-01.DWG



TUMWATER BLVD WIDENING (ARTERIAL)

NTS



ROAD A (LOCAL ACCESS)

NTS

CONSTRUCTION NOTES

1. 0.50' COMPACTED DEPTH HMA
2. 0.20' COMPACTED DEPTH CSTC
3. 1.50' COMPACTED DEPTH CSBC
4. CEMENT CONCRETE CURB & GUTTER
5. CEMENT CONCRETE SIDEWALK
6. SAWCUT A CLEAN VERTICAL EDGE
7. 0.17' GRIND AND OVERLAY EXISTING ASPHALT AS SHOWN ON PLAN
8. 0.30' COMPACTED DEPTH HMA
9. 0.80' COMPACTED CSBC
10. 1.0' BENCH BEHIND SIDEWALK
11. MAXIMUM 3(H) TO 1(V) CATCH SLOPE

CALL BEFORE YOU DIG

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VERTICAL DATUM
NGVD 29

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES

OTB DATE
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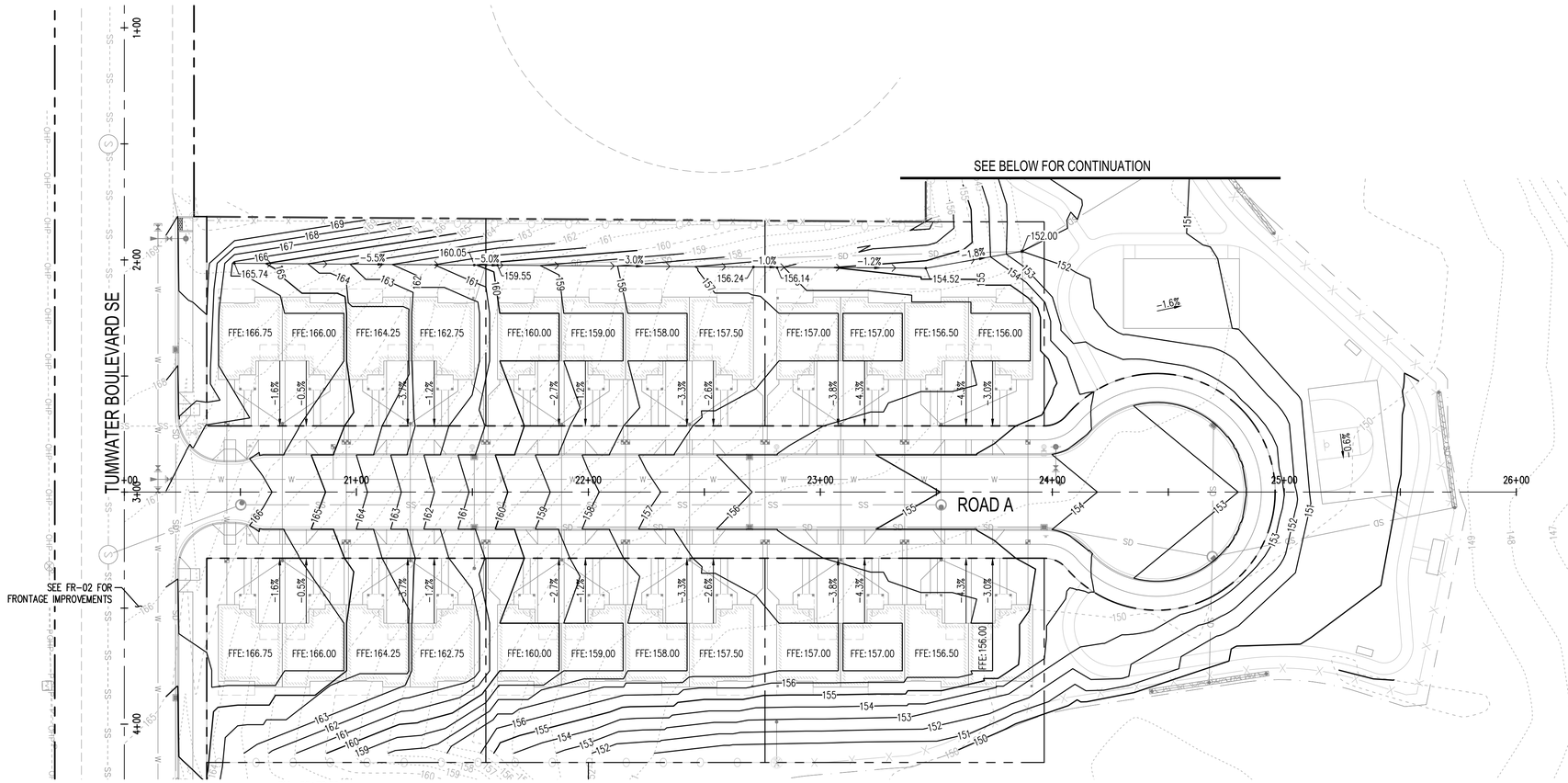
TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY ROAD SECTIONS

SHEET
XS-01

May 19, 2025, 1:55:39pm - User: WhitneyDunlap
N:\2 - PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD - MULTIFAMILY\ACAD\100.006 XS-01.DWG



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VERTICAL DATUM
NGVD 29

N

0 30 60
SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- GRADE BREAK
- EXISTING CHANNELIZATION
- EXISTING STORM LINE
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- STORM LINE
- CATCH BASIN
- SLOPE ARROW
- SPOT ELEVATION

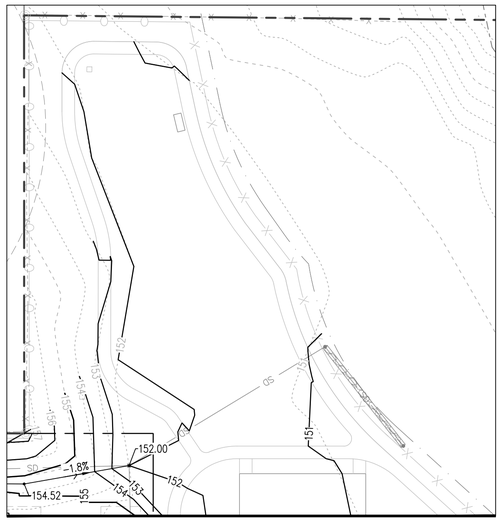
GENERAL NOTES

1. SPOT ELEVATIONS REPRESENT FINISHED GRADE AT FLOW LINE UNLESS OTHERWISE NOTED
2. CATCH SLOPES TO EXISTING GRADE SHALL NOT EXCEED 3:1
3. CONTRACTOR SHALL NOT ALLOW WATER TO POND AT SUBGRADE OR BASE MATERIAL ADJACENT TO CURB INLETS AND CATCH BASINS PRIOR TO PLACEMENT OF PAVEMENT. TEMPORARY PROVISIONS SUCH AS DEWATERING AND INSTALLATION OF SUBDRAINS SHALL BE TAKEN TO KEEP THE SUBGRADE DRY DURING CONSTRUCTION.
4. ACRONYMS FOR SPOT ELEVATIONS:
   - BW: BOTTOM OF WALL
   - HP: HIGH POINT
   - LP: LOW POINT
   - MATCH EX: MATCH EXISTING GRADE
   - TBC: TOP BACK OF CURB
   - TW: TOP OF WALL
   - SW: SIDEWALK

GRADING QUANTITIES

CUT: 1,000 CY
FILL: 10,000 CY

NOTE: QUANTITIES ARE APPROXIMATE FOR PERMITTING PURPOSES ONLY



REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES

OTB DATE
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JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501

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WHITNEY E. DUNLAP
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PRELIMINARY
5/19/2025

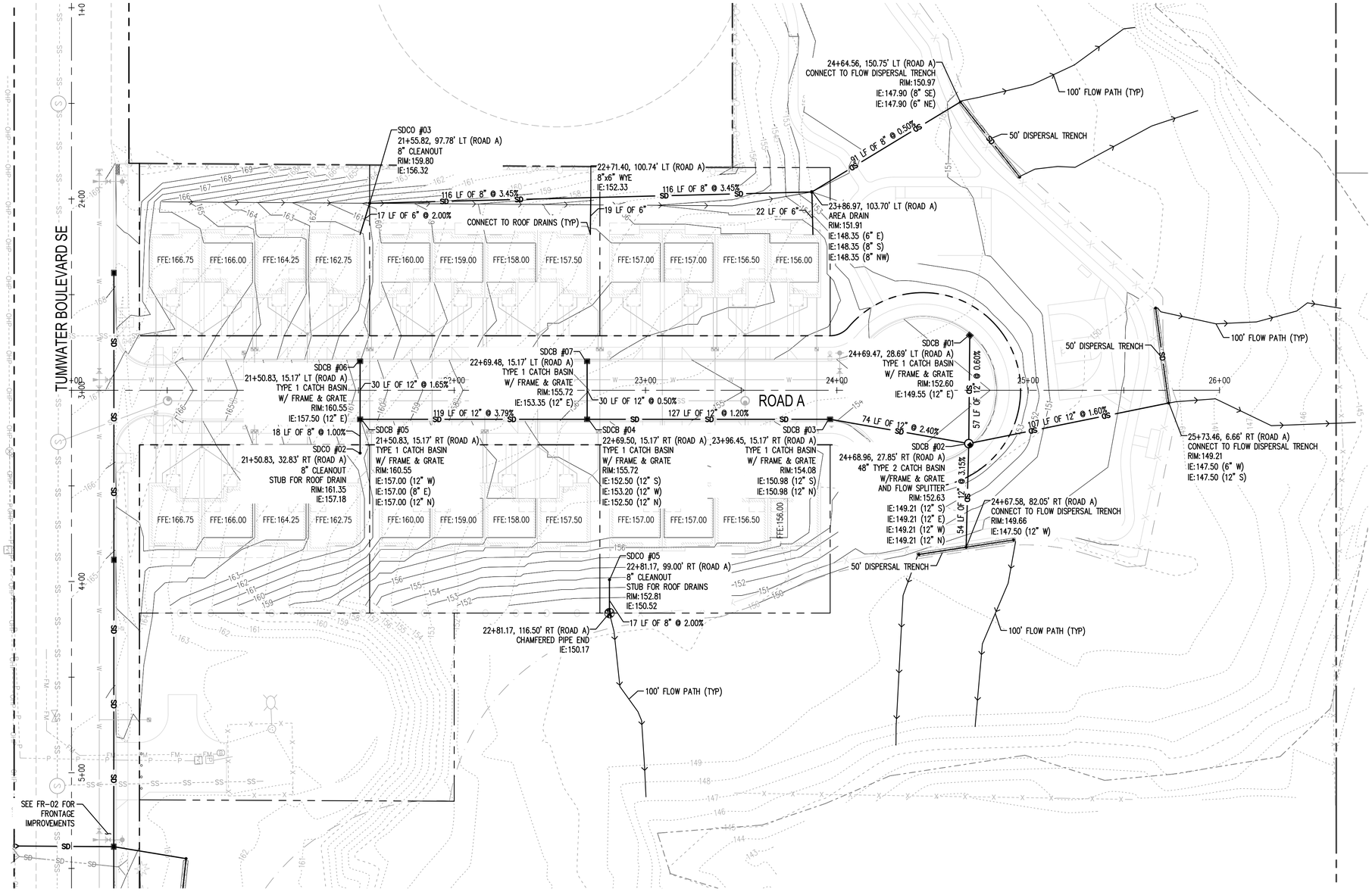
TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY GRADING PLAN

SHEET
CG-01

May 19, 2025 1:56:23pm - User: WhitneyDunlap
N:\2 - PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD - MULTIFAMILY\ACAD\100.006 CG-01.DWG



N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING CHANNELIZATION
- EXISTING STORM LINE
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- WATER LINE
- WATER SERVICE LINE
- SEWER LINE
- ADS N-12 STORM LINE UNLESS OTHERWISE NOTED
- CATCH BASIN
- STORM CLEANOUT
- AREA DRAIN
- RIP RAP
- FLOW DISPERSAL TRENCH

CALL BEFORE YOU DIG

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VERTICAL DATUM
NGVD 29

May 19, 2025 1:57:05pm – User: WhitneyDunlap
N:\2 - PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD - MULTIFAMILY\ACAD\100.006 SD-01.DWG

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES
OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
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TUMWATER, WA 98501

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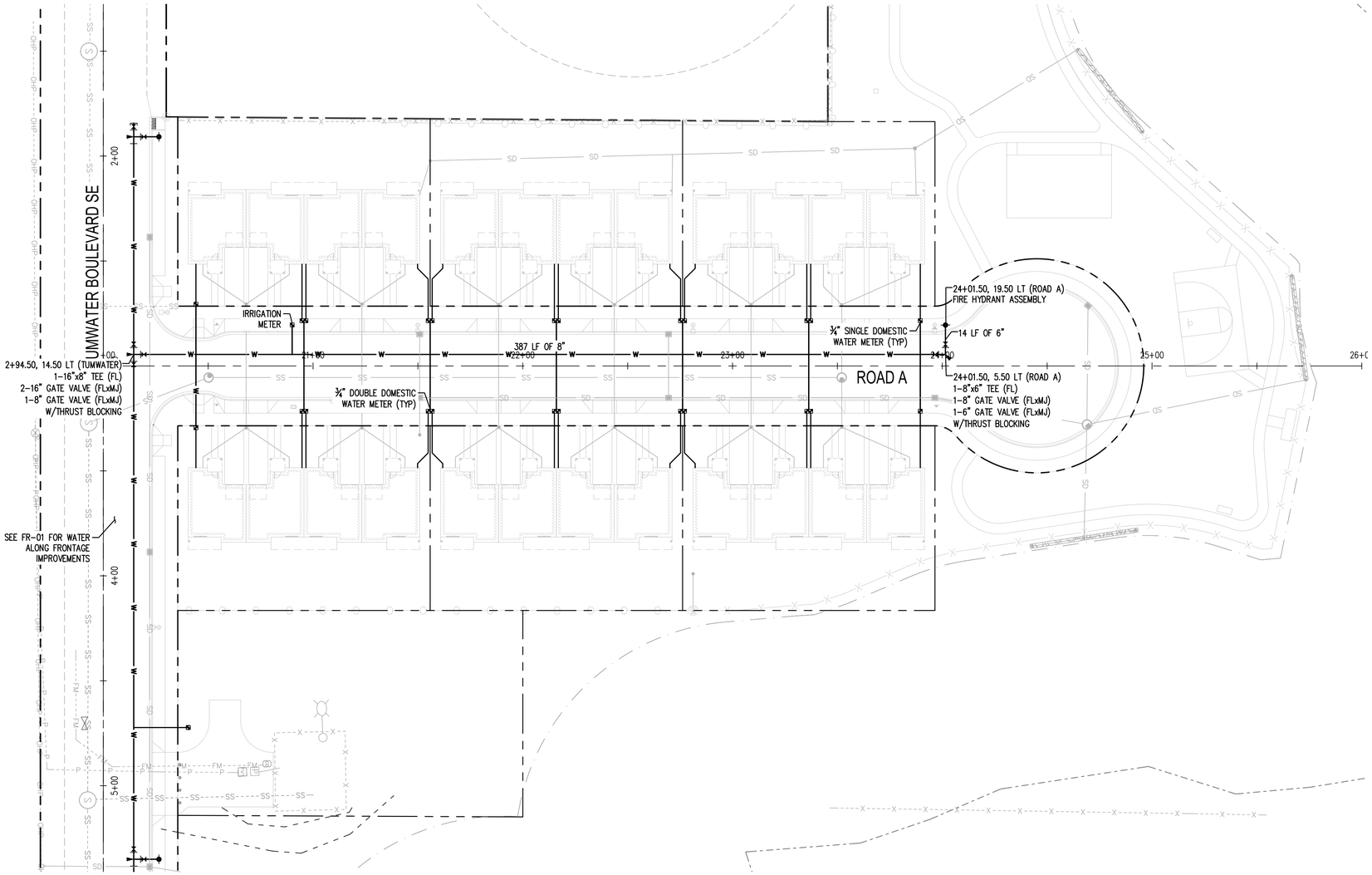
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY
STORMWATER PLAN

SHEET
SD-01



N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CHANNELIZATION
- EXISTING WATER LINE
- EXISTING WATER METER
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- STORM LINE
- SEWER LINE
- W — ANSI/AWWA PVC C900 DR 18 WATER LINE UNLESS OTHERWISE NOTED
- WS — HDPE WATER SERVICE LINE UNLESS OTHERWISE NOTED
- WATER FITTINGS W/ THRUST BLOCKING
- WATER METER
- FIRE HYDRANT

CALL BEFORE YOU DIG

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VERTICAL DATUM
NGVD 29

REVISIONS

PROJECT NO.
100.006

DRAWN
S. JANIK

CHECKED
W. DUNLAP

SUBMITTAL DATES

OTB DATE
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JSA CIVIL
Engineering | Planning | Management
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TUMWATER, WA 98501

STAMP

WHITNEY E. DUNLAP
STATE OF WASHINGTON
22774
REGISTERED
PROFESSIONAL ENGINEER

5/19/2025

TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY WATER PLAN

SHEET
WT-01

May 19, 2025 1:57:41pm – User: WhitneyDunlap
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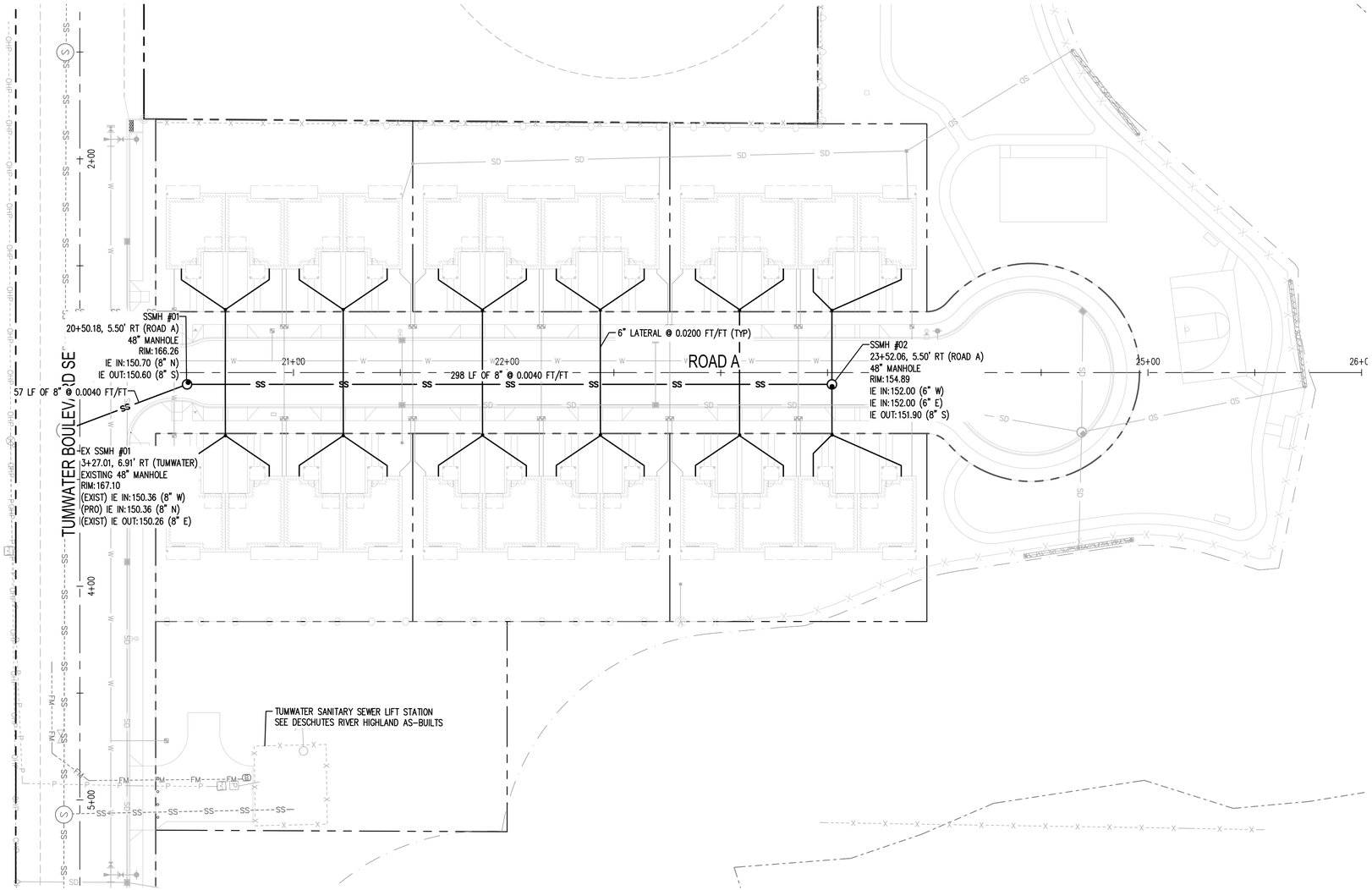

N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CHANNELIZATION
- EXISTING SEWER LINE
- EXISTING FORCE MAIN LINE
- EXISTING SEWER CLEANOUT
- EXISTING SEWER MANHOLE
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- STORM LINE
- WATER LINE
- WATER SERVICE LINE
- ASTM D 3034 SDR 35 PVC SEWER LINE UNLESS OTHERWISE NOTED
- SEWER MANHOLE
- SEWER CLEANOUT

CALL BEFORE YOU DIG

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VERTICAL DATUM
NGVD 29

REVISIONS

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JSA CIVIL
Engineering | Planning | Management
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TUMWATER, WA 98501

STAMP

WHITNEY E. DUNLAP
STATE OF WASHINGTON
23277
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PROFESSIONAL ENGINEER
PRELIMINARY

5/19/2025

TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY
SEWER PLAN

SHEET
SS-01

May 19, 2025 1:58:16pm – User: WhitneyDunlap
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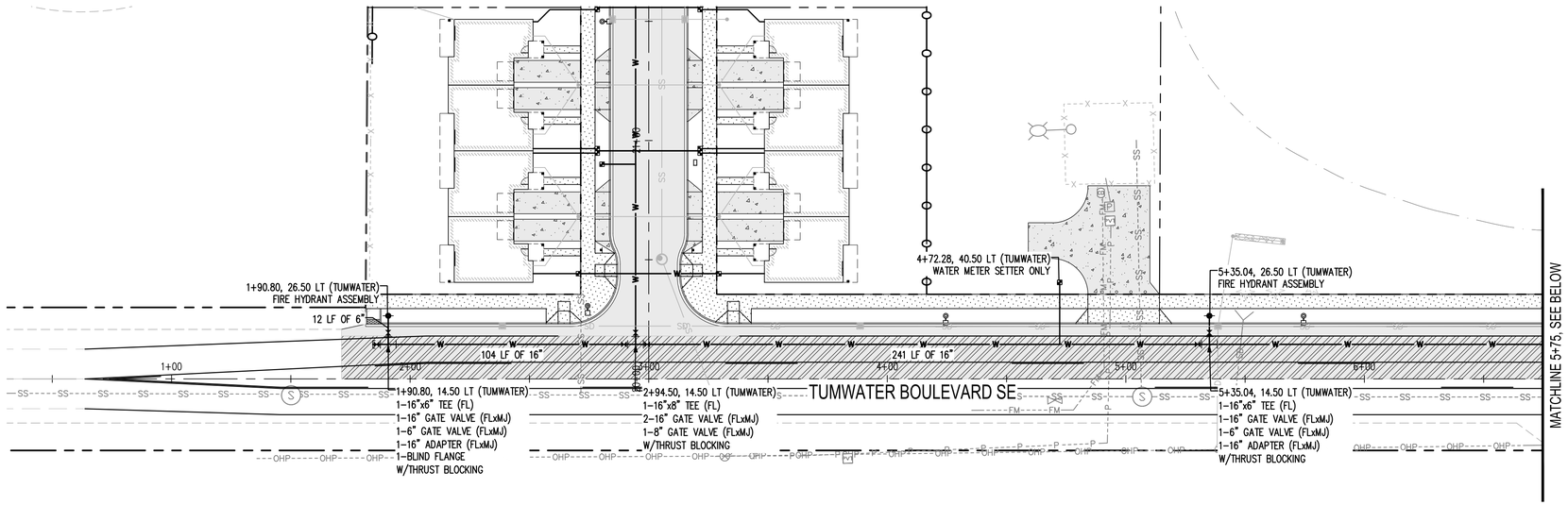

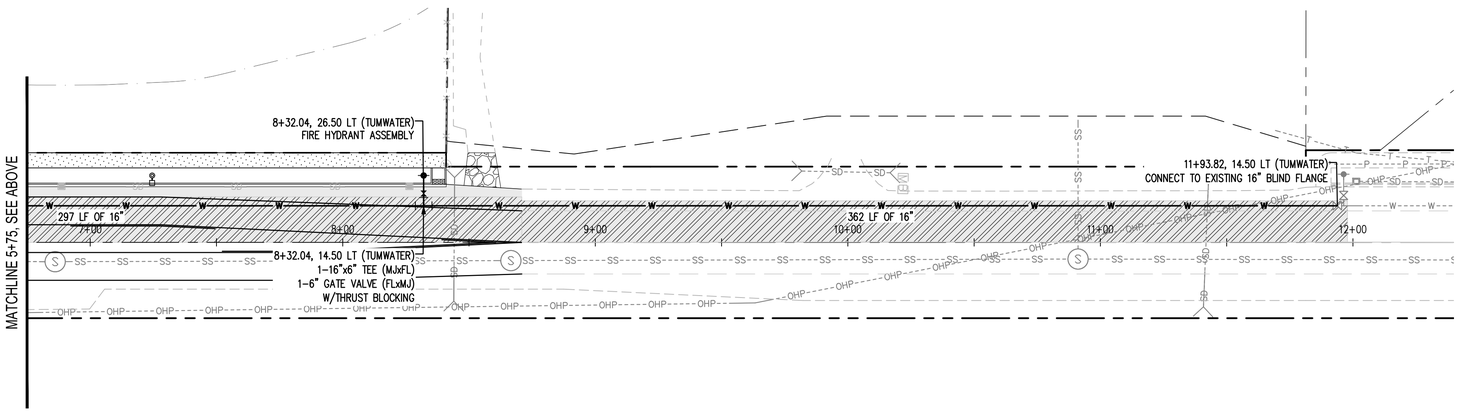

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VERTICAL DATUM
NGVD 29

N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT LINE
- EXISTING CHANNELIZATION
- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- CEMENT CONCRETE SIDEWALK
- CEMENT CONCRETE DRIVEWAYS
- ASPHALT PAVEMENT
- GRIND & OVERLAY
- SD — STORM LINE
- SS — SEWER LINE
- W — ANSI/AWWA PVC C900 DR 18 WATER LINE UNLESS OTHERWISE NOTED
- WS — HDPE WATER SERVICE LINE UNLESS OTHERWISE NOTED
- WATER FITTINGS W/THRUST BLOCKING
- WATER METER
- FIRE HYDRANT

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES
OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
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5/19/2025

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TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
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TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY
FRONTAGE
IMPROVEMENTS

SHEET
FR-01

May 19, 2025, 1:58:54pm - User: WhitneyDunlap
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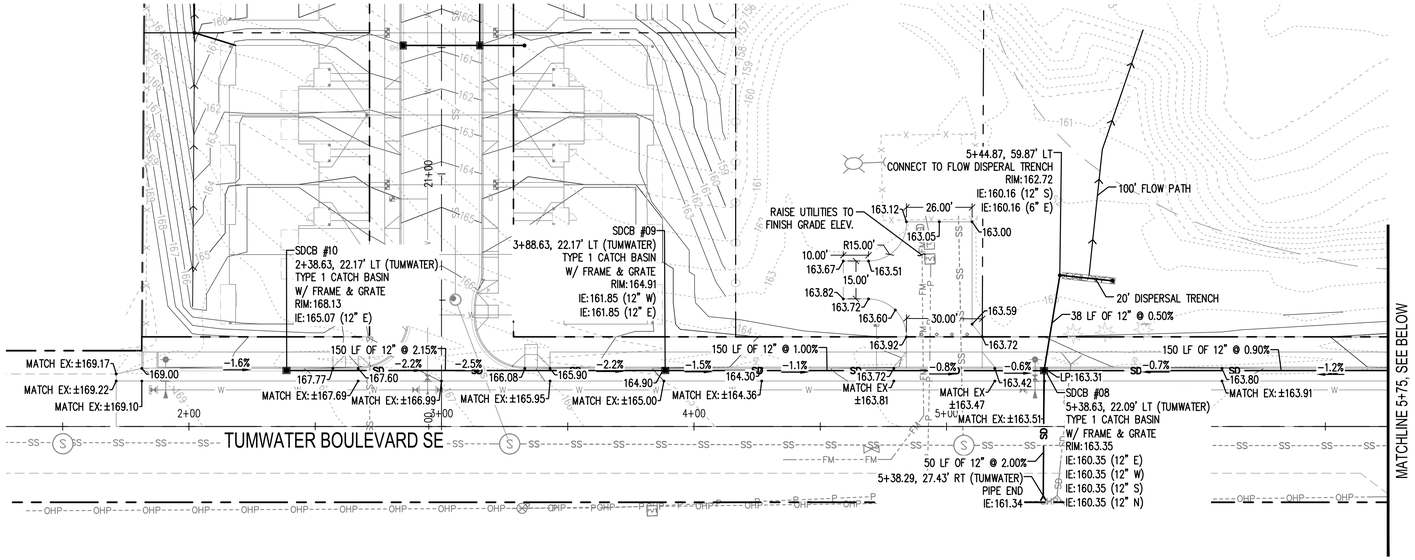

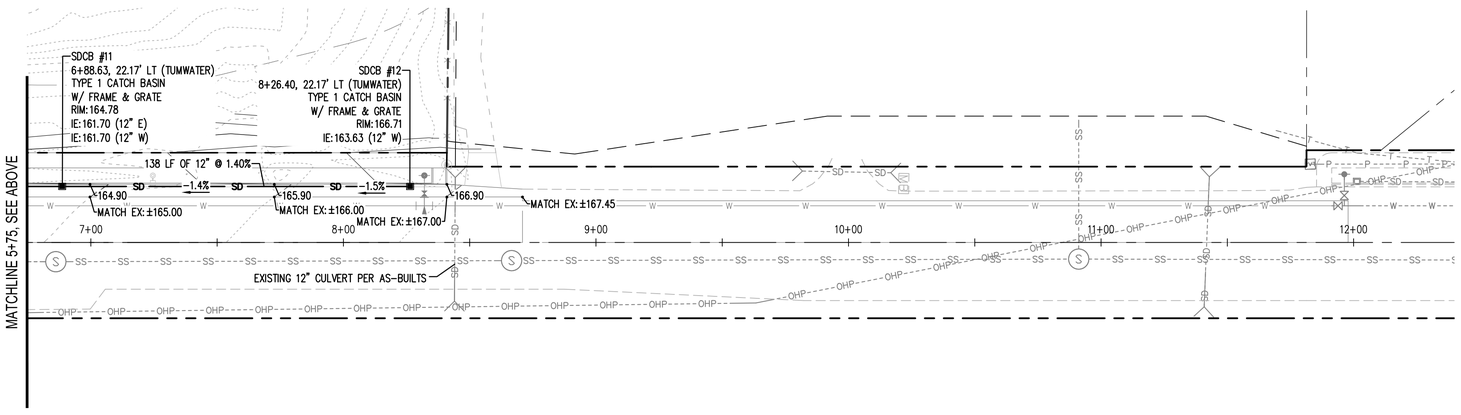

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VERTICAL DATUM
NGVD 29

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0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- LOT LINE
- EASEMENT LINE
- EXISTING CHANNELIZATION
- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- SS — SEWER LINE
- W — WATER LINE
- SD — ADS N-12 STORM LINE UNLESS OTHERWISE NOTED
- CATCH BASIN
- RIP RAP PAD

REVISIONS

PROJECT NO.
100.006

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W. DUNLAP

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OTB DATE
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17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY
FRONTAGE GRADING
& STORM

SHEET
FR-02

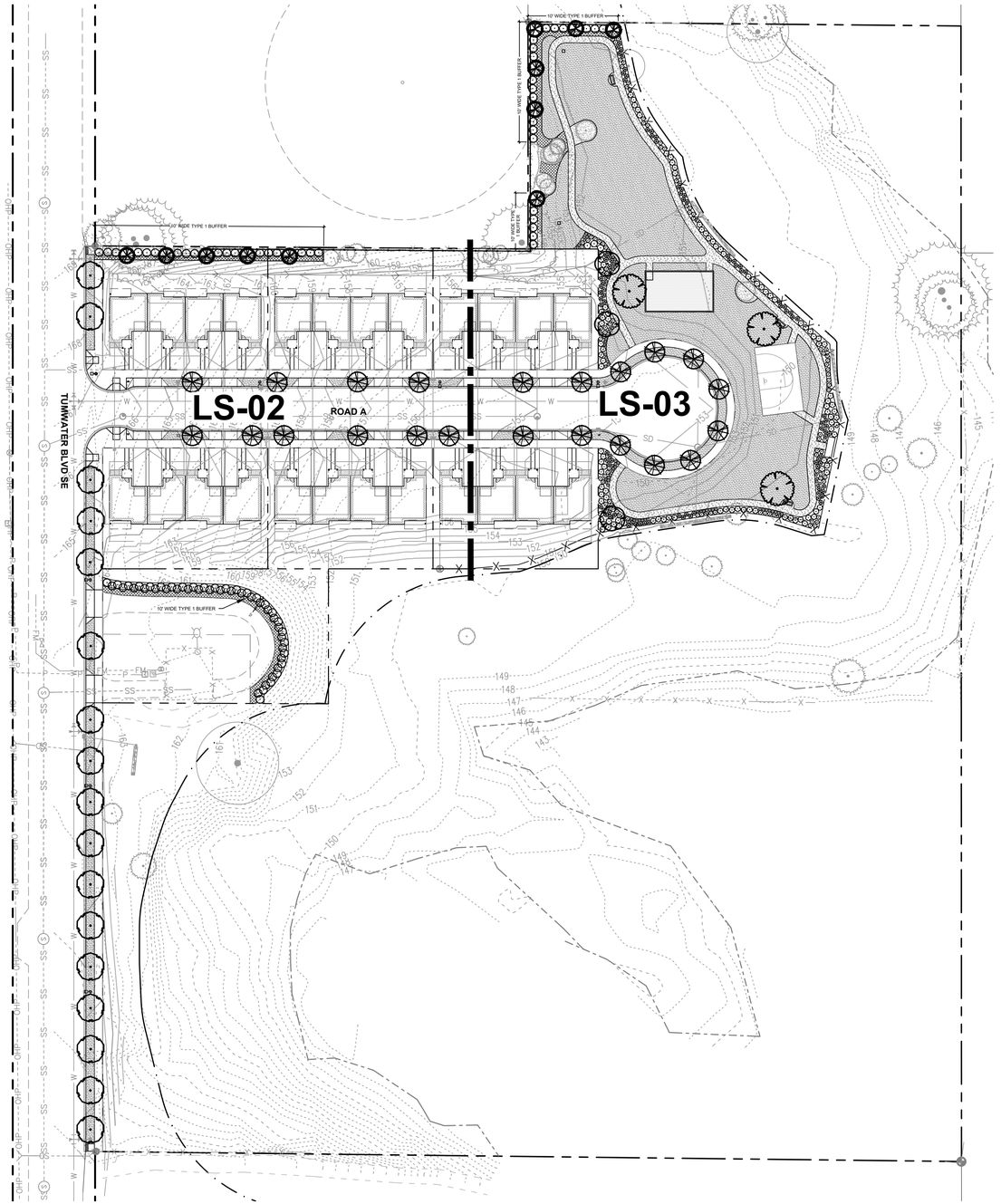
May 19, 2025 1:59:42pm - User: WhitneyDunlap
N:\2 - PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD - MULTIFAMILY\ACAD\100.006 FR-02.DWG

PLANT SCHEDULE (ALL SHEETS)

SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	DESC.
TREES				
	3	ACER RUBRUM 'FRANKSRED' RED SUNSET MAPLE	2" CAL.	12`-14` HT., B&B OR CONT.
	11	CALOCEDRUS DECURRENS INCENSE CEDAR	--	6`-8` HT., B&B OR CONT.
	3	CORNUS X `RUTDAN` CELESTIAL DOGWOOD	2" CAL.	10`-12` HT., B&B OR CONT.
	17	FRAXINUS PENNSYLVANICA 'SUMMIT' SUMMIT GREEN ASH	2" CAL.	12`-14` HT., B&B OR CONT.
	22	QUERCUS ROBUR 'FASTIGIATA' SKYROCKET ENGLISH OAK	2" CAL.	12`-14` HT., B&B OR CONT.
SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING
SHRUBS				
	73	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	1 GAL	2` O.C.
	105	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE	3 GAL	4` O.C.
	89	MYRICA CALIFORNICA PACIFIC WAX MYRTLE	B&B/ CONT., 6` MIN. HT.	AS SHOWN
	95	POLYSTICHUM MUNITUM WESTERN SWORD FERN	3 GAL	3` O.C.
	3	RIBES SANGUINEUM 'KING EDWARD VII' RED FLOWERING CURRANT	5 GAL	5` O.C.
	92	SPIRAEA BETULIFOLIA `TOR` TOR BIRCHLEAF SPIREA	3 GAL	3` O.C.
GROUND COVERS				
	273	MAHONIA REPENS CREEPING MAHONIA	1 GAL	3` O.C.

REFERENCE NOTES SCHEDULE (ALL SHEETS)

SYMBOL	CODE	DESCRIPTION	DETAIL
	1	HYDROSEED LAWN, TYP.	
	2	LAWN EDGE, TYP.	4/LS-04
	3	6' HT. SCREEN FENCE, TYP. SEE ARCHITECTURAL PLANS.	11/LS-04
	4	GRAVEL PATH, TYP.	5/LS-04
	5	BENCH - PLAZA CITY 71-1/4" STEEL BACKLESS BENCH, SURFACE-MOUNT (PZ-0400-72), COLOR PITCH, AS AVAILABLE FROM TOURNESOL SITE FURNISHINGS, PH. 800.542. 2282 OR APPROVED EQUAL.	
	6	MULCH TO DRIPLINE OF TREE TO REMAIN	
	7	CONCRETE CURB AT PLAY AREA	6/LS-04
	8	PLAY AREA RAMP	7/LS-04
	9	SOF'FALL ENGINEERED WOOD FIBER SURFACING. PLAYGROUND EQUIPMENT BY OWNER. INSTALL FALL SURFACING TO DEPTHS AS REQUIRED BY PLAYGROUND EQUIPMENT MANUFACTURER.	
	10	WHEN INDIVIDUAL LOTS ARE DEVELOPED, THE CONTRACTOR SHALL INSTALL A LANDSCAPE BED, AT LEAST 20 SF., IN FRONT OF EACH PEDESTRIAN ENTRY. EACH LANDSCAPE BED SHALL HAVE NO DIMENSION LESS THAN 4', AND BE PLANTED WITH A MIX OF SHRUBS AND GROUNDCOVERS CONFORMING TO THE REQUIREMENTS OF TMC 18.47., TYPICAL.	



	REVISIONS	DATE	BY
1	REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2	REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 300, LACEY, WA 98516
P: (360) 352-1465
SCJALLIANCE.COM

SHEET TITLE: OVERALL LANDSCAPE PLAN

PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

SEAL:

DESIGNER:	N. DORKINA
DRAWN BY:	N. DORKINA
APPROVED BY:	T. GRANTHAM
DATE:	DECEMBER 24, 2024
JOB NO:	24-000722
DRAWING FILE NO:	_24-000722 X-LS
DRAWING NO:	LS-01
SHEET NO:	1 OF 9

May 19, 2025, 11:29:33am – User: natalia.dorkina
N:\PROJECTS\5275 JSA CIVIL, LLC\24-000722 TUMWATER TOWNHOMES\CAD_24-000722 X-LS.DWG

PLANT SCHEDULE LS-02

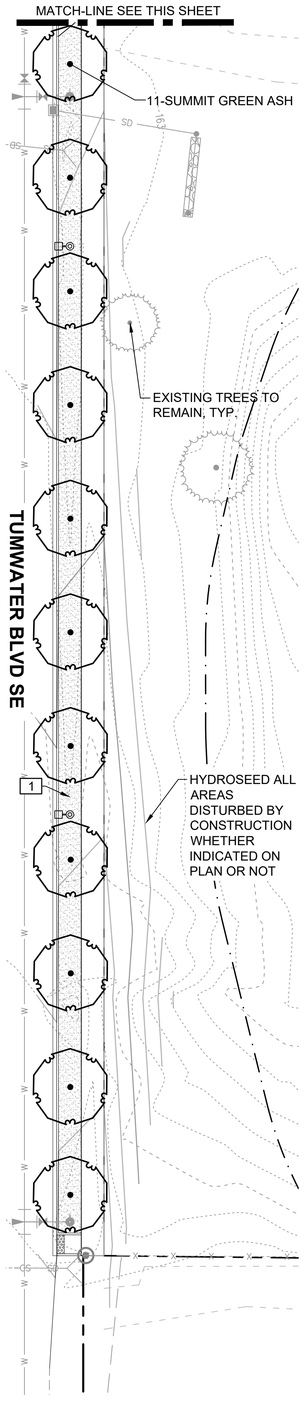
SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	DESC.
TREES				
	5	CALOCEDRUS DECURRENS INCENSE CEDAR	--	6`-8` HT., B&B OR CONT.
	17	FRAXINUS PENNSYLVANICA 'SUMMIT' SUMMIT GREEN ASH	2" CAL.	12`-14` HT., B&B OR CONT.
	10	QUERCUS ROBUR 'FASTIGIATA' SKYROCKET ENGLISH OAK	2" CAL.	12`-14` HT., B&B OR CONT.
SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING
SHRUBS				
	69	MYRICA CALIFORNICA PACIFIC WAX MYRTLE	B&B/ CONT., 6` MIN. HT.	AS SHOWN
GROUND COVERS				
	172	MAHONIA REPENS CREEPING MAHONIA	1 GAL	3` O.C.

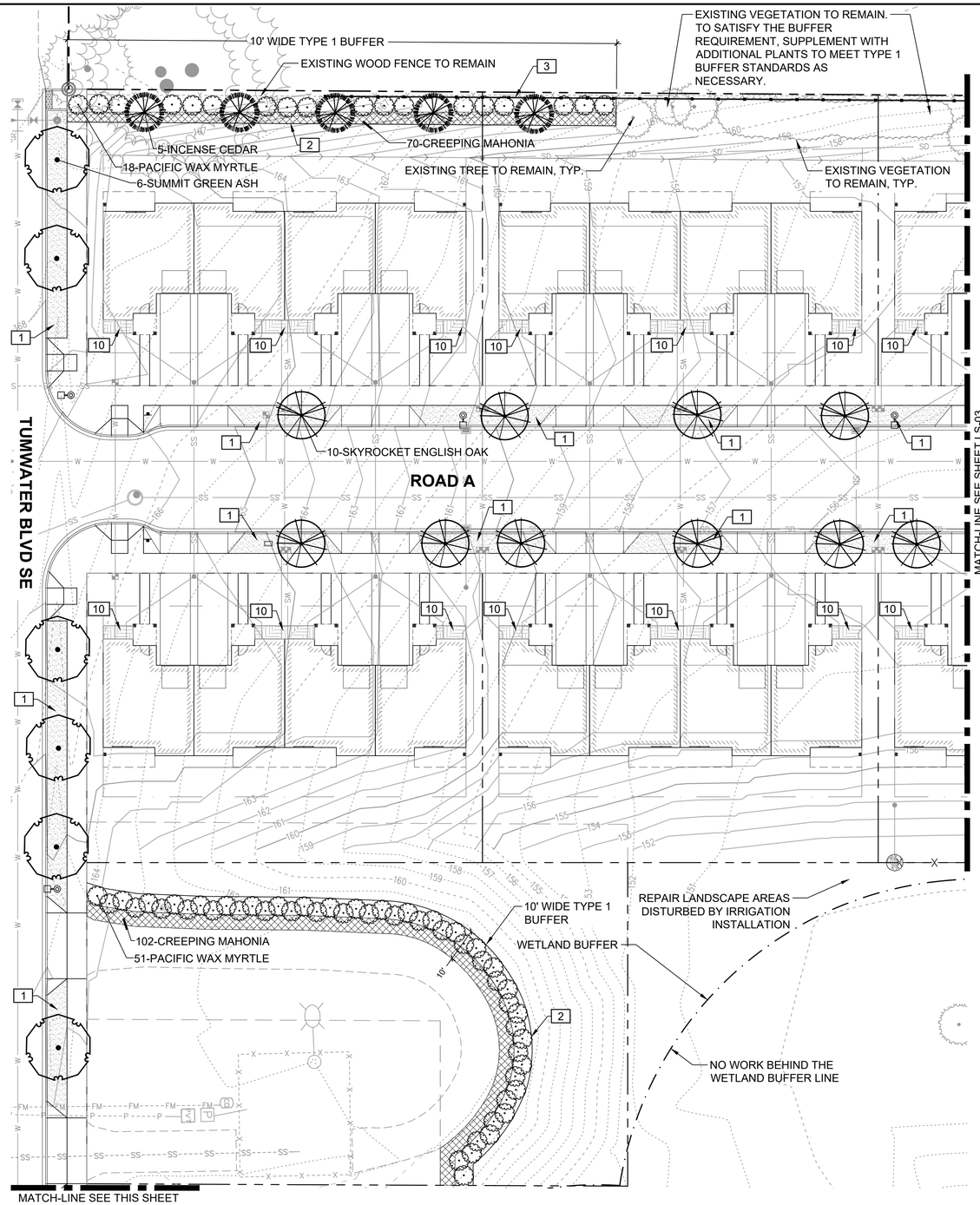
REFERENCE NOTES SCHEDULE LS-02

SYMBOL	CODE	DESCRIPTION	DETAIL
	1	HYDROSEED LAWN, TYP.	
	2	LAWN EDGE, TYP.	4/LS-04
	3	6' HT. SCREEN FENCE, TYP. SEE ARCHITECTURAL PLANS.	11/LS-04
	10	WHEN INDIVIDUAL LOTS ARE DEVELOPED, THE CONTRACTOR SHALL INSTALL A LANDSCAPE BED, AT LEAST 20 SF., IN FRONT OF EACH PEDESTRIAN ENTRY. EACH LANDSCAPE BED SHALL HAVE NO DIMENSION LESS THAN 4', AND BE PLANTED WITH A MIX OF SHRUBS AND GROUNDCOVERS CONFORMING TO THE REQUIREMENTS OF TMC 18.47., TYPICAL.	

SHEET NOTES (ALL SHEETS)

1. REFER TO DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. NO PLANT SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL OF LANDSCAPE ARCHITECT/OWNER.
3. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT/OWNER.
4. PLANT LIST QUANTITIES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES IN LIST WITH ACTUAL PLAN CALL-OUTS, AND INSTALLING PLANTINGS PER THE LANDSCAPE PLAN. GROUNDCOVER QUANTITIES SHALL BE ADJUSTED AS REQUIRED FOR FIELD CONDITIONS AT THE SPECIFIED SPACING.
5. ALL PLANTS MUST BE APPROVED BY LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
6. LANDSCAPING ON INDIVIDUAL LOTS SHALL BE COMPLETED BY OTHERS AFTER BUILDING CONSTRUCTION.





0 20 40 60 feet

SCALE: 1" = 20'

NORTH

REVISIONS	DATE	BY
1 REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2 REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 300, LACEY, WA 98516
P: (360) 352-2465
SCJALLIANCE.COM

SHEET TITLE: SOUTH LANDSCAPE PLAN

PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

SEAL:

STATE OF WASHINGTON
TRENT L. GRANTHAM
LA 963 EXP. 07/22/2026
LANDSCAPE ARCHITECT

DESIGNER:	N. DORKINA
DRAWN BY:	N. DORKINA
APPROVED BY:	T. GRANTHAM
DATE:	DECEMBER 24, 2024
JOB NO:	24-000722
DRAWING FILE NO:	_24-000722 X-LS
DRAWING NO:	LS-02
SHEET NO:	2 OF 9

May 19, 2025 11:29:38am – User: natalia.dorkina
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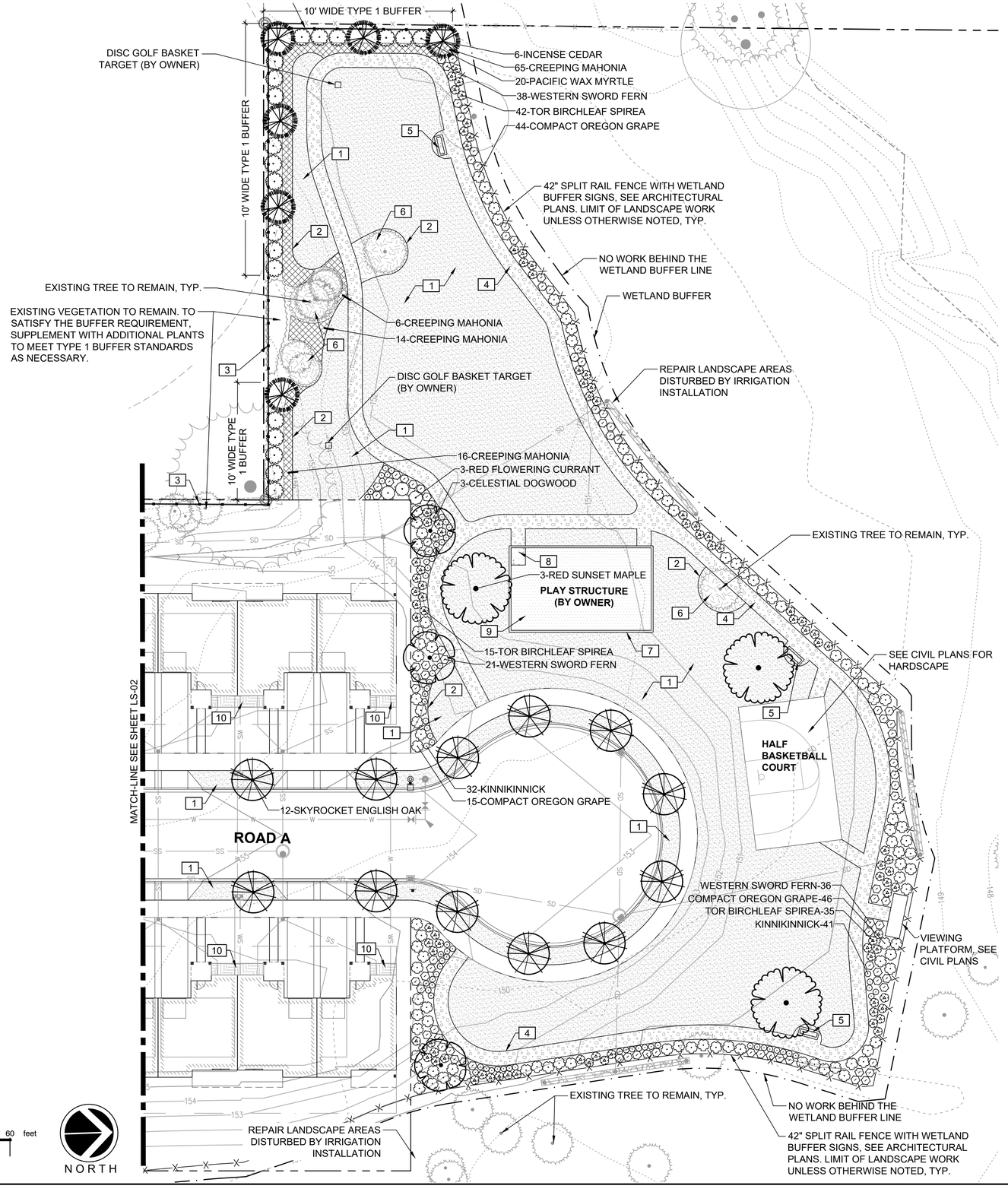
PLANT SCHEDULE LS-03

SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	DESC.
TREES				
	3	ACER RUBRUM 'FRANKSRED' RED SUNSET MAPLE	2" CAL.	12`-14` HT., B&B OR CONT.
	6	CALOCEDRUS DECURRENS INCENSE CEDAR	--	6`-8` HT., B&B OR CONT.
	3	CORNUS X `RUTDAN` CELESTIAL DOGWOOD	2" CAL.	10`-12` HT., B&B OR CONT.
	12	QUERCUS ROBUR 'FASTIGIATA' SKYROCKET ENGLISH OAK	2" CAL.	12`-14` HT., B&B OR CONT.
SYMBOL	QTY	BOTANICAL / COMMON NAME	SIZE	SPACING
SHRUBS				
	73	ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK	1 GAL	2` O.C.
	105	MAHONIA AQUIFOLIUM 'COMPACTA' COMPACT OREGON GRAPE	3 GAL	4` O.C.
	20	MYRICA CALIFORNICA PACIFIC WAX MYRTLE	B&B/ CONT., 6` MIN. HT.	AS SHOWN
	95	POLYSTICHUM MUNITUM WESTERN SWORD FERN	3 GAL	3` O.C.
	3	RIBES SANGUINEUM 'KING EDWARD VII' RED FLOWERING CURRANT	5 GAL	5` O.C.
	92	SPIRAEA BETULIFOLIA `TOR` TOR BIRCHLEAF SPIREA	3 GAL	3` O.C.
GROUND COVERS				
	101	MAHONIA REPENS CREEPING MAHONIA	1 GAL	3` O.C.

REFERENCE NOTES SCHEDULE LS-03

SYMBOL	CODE	DESCRIPTION	DETAIL
	1	HYDROSEED LAWN, TYP.	
	2	LAWN EDGE, TYP.	4/LS-04
	3	6' HT. SCREEN FENCE, TYP. SEE ARCHITECTURAL PLANS.	11/LS-04
	4	GRAVEL PATH, TYP.	5/LS-04
	5	BENCH - PLAZA CITY 71-1/4" STEEL BACKLESS BENCH, SURFACE-MOUNT (PZ-0400-72), COLOR PITCH, AS AVAILABLE FROM TOURNESOL SITE FURNISHINGS, PH. 800.542. 2282 OR APPROVED EQUAL.	
	6	MULCH TO DRIPLINE OF TREE TO REMAIN	
	7	CONCRETE CURB AT PLAY AREA	6/LS-04
	8	PLAY AREA RAMP	7/LS-04
	9	SOF'FALL ENGINEERED WOOD FIBER SURFACING. PLAYGROUND EQUIPMENT BY OWNER. INSTALL FALL SURFACING TO DEPTHS AS REQUIRED BY PLAYGROUND EQUIPMENT MANUFACTURER.	
	10	WHEN INDIVIDUAL LOTS ARE DEVELOPED, THE CONTRACTOR SHALL INSTALL A LANDSCAPE BED, AT LEAST 20 SF., IN FRONT OF EACH PEDESTRIAN ENTRY. EACH LANDSCAPE BED SHALL HAVE NO DIMENSION LESS THAN 4', AND BE PLANTED WITH A MIX OF SHRUBS AND GROUNDCOVERS CONFORMING TO THE REQUIREMENTS OF TMC 18.47., TYPICAL.	



0 20 40 60 feet
SCALE: 1" = 20'

NORTH

REVISIONS	DATE	BY
1 REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2 REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 300, LACEY, WA 98516
360.352.1465
SCJALLIANCE.COM

SHEET TITLE: NORTH LANDSCAPE PLAN

PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

SEAL: STATE OF WASHINGTON · TRENT L. GRANTHAM · 22740 · REGISTERED LANDSCAPE ARCHITECT · EXP. 07/23/2026

DESIGNER:	N. DORKINA
DRAWN BY:	N. DORKINA
APPROVED BY:	T. GRANTHAM
DATE:	DECEMBER 24, 2024
JOB NO:	24-000722
DRAWING FILE NO:	24-000722 X-LS
DRAWING NO:	LS-03
SHEET NO:	3 OF 9

May 19, 2025 11:29:43am – User: natalia.dorkina
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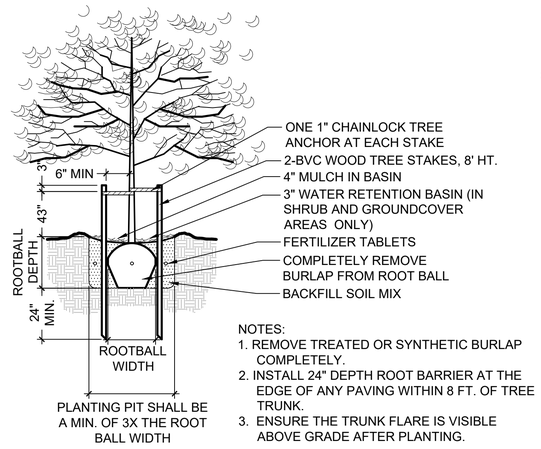
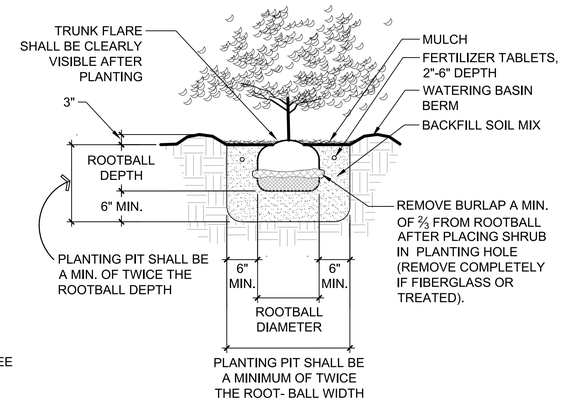


NOTES:
1. REMOVE TREATED OR SYNTHETIC BURLAP COMPLETELY.
2. INSTALL 24" DEPTH ROOT BARRIER AT THE EDGE OF ANY PAVING WITHIN 8 FT. OF TREE TRUNK.
3. ENSURE THE TRUNK FLARE IS VISIBLE ABOVE GRADE AFTER PLANTING.

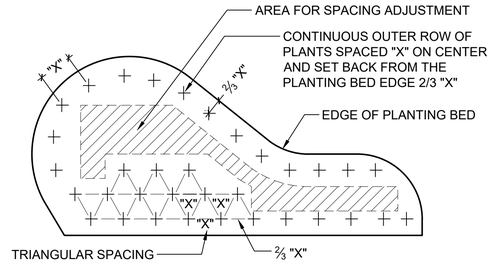
1 TREE PLANTING & STAKING DETAIL

NTS P-MU-TUM2-09



2 SHRUB PLANTING DETAIL (B&B OR CONT.)

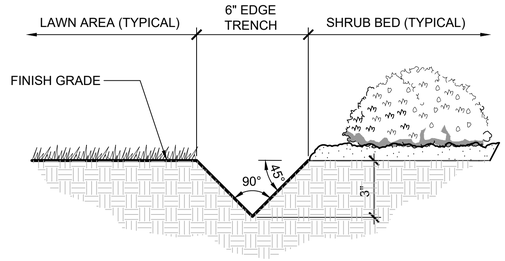
NTS P-MU-TUM2-25



SPECIFIED PLANT SPACING = "X"
INDIVIDUAL PLANTS REPRESENTED AS: +

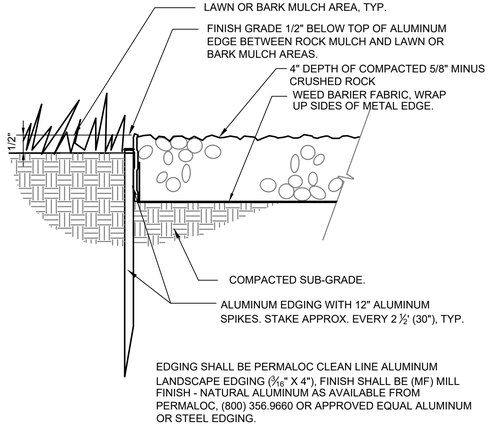
3 PLANT SPACING DETAIL

NTS P-MU-TUM2-08



4 LAWN EDGE DETAIL

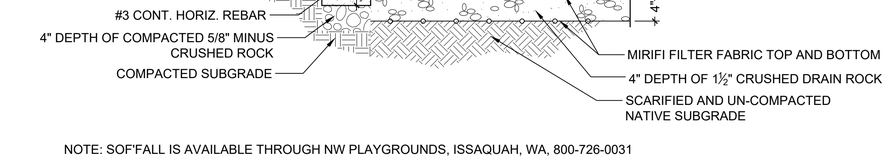
3" = 1'-0" P-MU-TUM2-15



EDGING SHALL BE PERMALOC CLEAN LINE ALUMINUM LANDSCAPE EDGING (⅜" X 4"), FINISH SHALL BE (MF) MILL FINISH - NATURAL ALUMINUM AS AVAILABLE FROM PERMALOC, (800) 356.9660 OR APPROVED EQUAL ALUMINUM OR STEEL EDGING.

5 ALUMINUM EDGE AT ROCK PATH

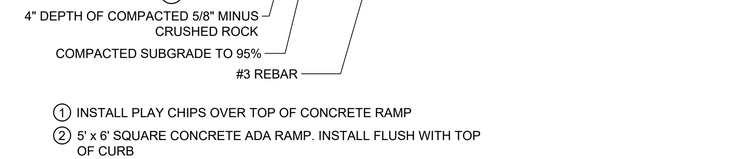
3" = 1'-0" P-MU-TUM2-13



NOTE: SOF'FALL IS AVAILABLE THROUGH NW PLAYGROUNDS, ISSAQUAH, WA, 800-726-0031

6 CONCRETE CURB AT SOF`FALL PLAY AREA

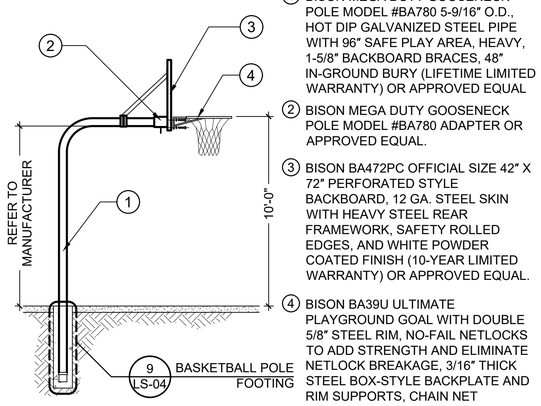
NTS P-MU-TUM2-27



1. INSTALL PLAY CHIPS OVER TOP OF CONCRETE RAMP
2. 5' x 6' SQUARE CONCRETE ADA RAMP. INSTALL FLUSH WITH TOP OF CURB

7 PLAY AREA RAMP

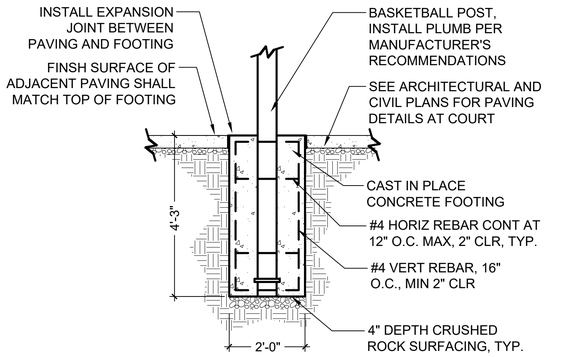
1/2" = 1'-0" P-MU-TUM2-20



1. BISON MEGA DUTY GOOSENECK POLE MODEL #BA780 5-9/16" O.D., HOT DIP GALVANIZED STEEL PIPE WITH 96" SAFE PLAY AREA, HEAVY, 1-5/8" BACKBOARD BRACES, 48" IN-GROUND BURY (LIFETIME LIMITED WARRANTY) OR APPROVED EQUAL
2. BISON MEGA DUTY GOOSENECK POLE MODEL #BA780 ADAPTER OR APPROVED EQUAL.
3. BISON BA472PC OFFICIAL SIZE 42" X 72" PERFORATED STYLE BACKBOARD, 12 GA. STEEL SKIN WITH HEAVY STEEL REAR FRAMEWORK, SAFETY ROLLED EDGES, AND WHITE POWDER COATED FINISH (10-YEAR LIMITED WARRANTY) OR APPROVED EQUAL.
4. BISON BA39U ULTIMATE PLAYGROUND GOAL WITH DOUBLE 5/8" STEEL RIM, NO-FAIL NETLOCKS TO ADD STRENGTH AND ELIMINATE NETLOCK BREAKAGE, 3/16" THICK STEEL BOX-STYLE BACKPLATE AND RIM SUPPORTS, CHAIN NET (UNCONDITIONAL LIFETIME REPLACEMENT WARRANTY) OR APPROVED EQUAL.

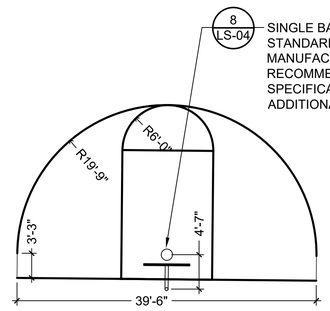
8 BASKETBALL HOOP

1/4" = 1'-0" P-MU-TUM2-21



9 BASKETBALL POLE FOOTING

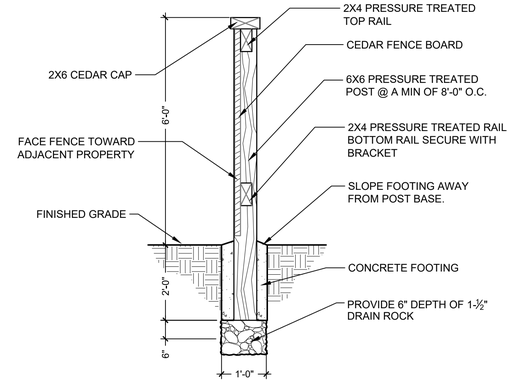
1/2" = 1'-0" P-MU-TUM2-22



NOTE: PAVEMENT STRIPING SHALL BE 4" WIDE TYP., COLOR SHALL BE WHITE. PROVIDE 2 COATS MINIMUM OR AS NEEDED TO ACHIEVE A SOLID COLOR.

10 BASKETBALL COURT LAYOUT

1" = 10' P-MU-TUM2-26



NOTE: CONNECT NEW FENCE TO EXISTING WOOD FENCE. DEMO AND REMOVE EXISTING WIRE FENCE AT NEW FENCE LOCATION.

11 6' HT. SOLID WOOD FENCE

1/2" = 1'-0" P-MU-TUM2-42

REVISIONS	DATE	BY
1 REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2 REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WA 98516
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SHEET TITLE: LANDSCAPE DETAILS

PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

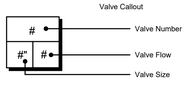
SEAL: STATE OF WASHINGTON · TRENT L. GRANTHAM · No. 843 EXP. 07/22/2026 · LANDSCAPE ARCHITECT

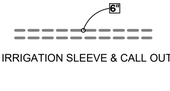
DESIGNER:	N. DORKINA
DRAWN BY:	N. DORKINA
APPROVED BY:	T. GRANTHAM
DATE:	DECEMBER 24, 2024
JOB NO:	24-000722
DRAWING FILE NO:	_24-000722 X-LS
DRAWING NO:	LS-04
SHEET NO:	4 OF 9

May 19, 2025 - 11:29:48am - User: natalia.dorkina
N:\PROJECTS\5275 JSA CIVIL, LLC\24-000722 TUMWATER TOWNHOMES\CAD_24-000722 X-LS.DWG

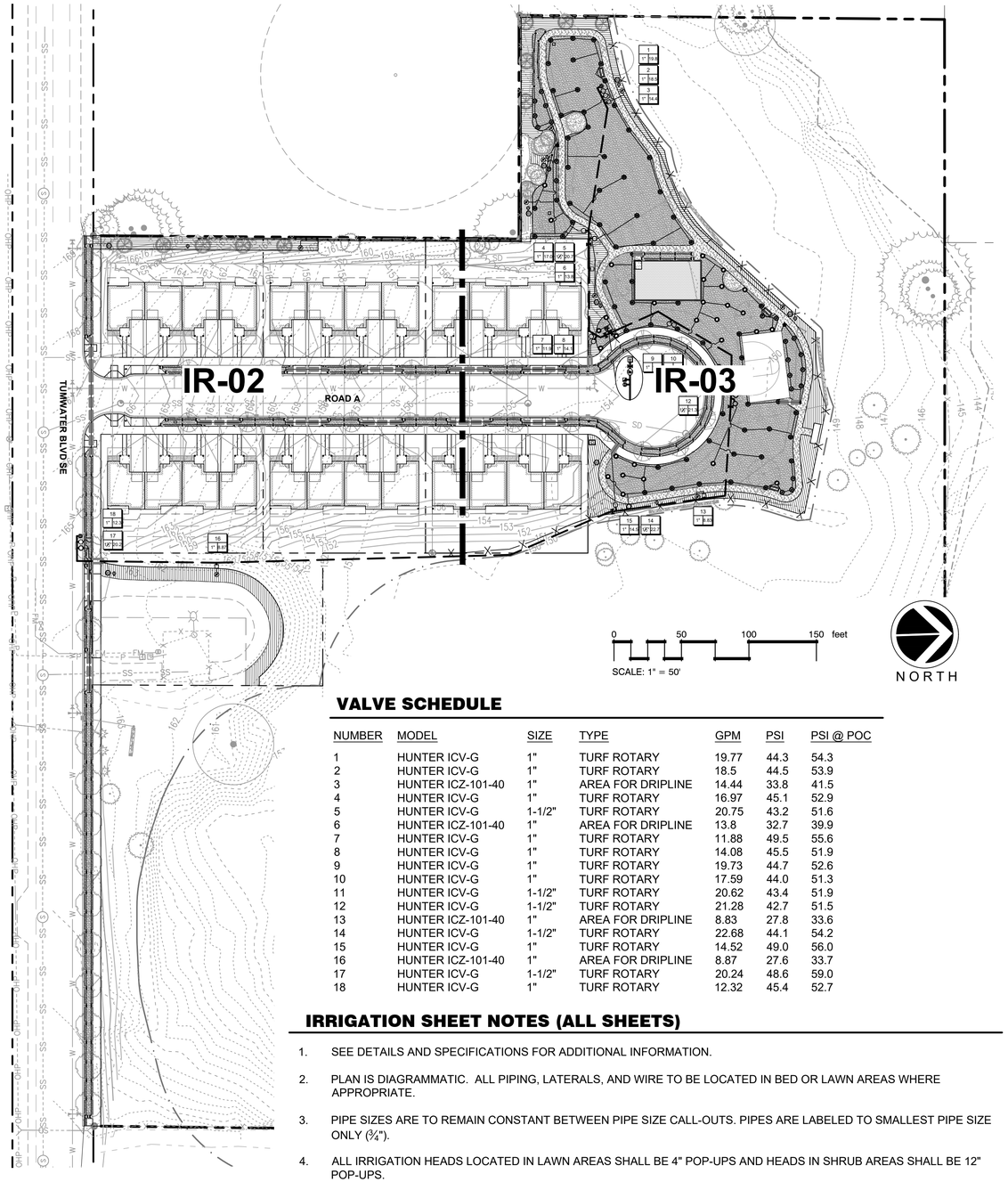
IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	DETAIL
CORNER	HUNTER MP CORNER PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE. T=TURQUOISE ADJ ARC 45-105 ON PRS40 BODY.	40	7/IR-04
LST SST RST	HUNTER MP STRIP PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. LCS=IVORY LEFT STRIP, SS=BROWN SIDE STRIP, RCS=COPPER RIGHT STRIP.	40	7/IR-04
1000	HUNTER MP1000 PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. M=MAROON ADJ ARC 90 TO 210, L=LIGHT BLUE 210 TO 270 ARC, O=OLIVE 360 ARC.	40	7/IR-04
2000	HUNTER MP2000 PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. K=BLACK ADJ ARC 90-210, G=GREEN ADJ ARC 210-270, R=RED 360 ARC.	40	7/IR-04
3000	HUNTER MP3000 PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. B=BLUE ADJ ARC 90-210, Y=YELLOW ADJ ARC 210-270, A=GRAY 360 ARC.	40	7/IR-04
800 A 800 F	HUNTER MP800SR PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. ADJ=ORANGE AND GRAY (ARC 90-210), 360=LIME GREEN AND GRAY (ARC 360)	40	7/IR-04
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	DETAIL
□	HUNTER ICZ-101-40 DRIP CONTROL ZONE KIT. 1IN. ICV GLOBE VALVE WITH 1IN. HY100 FILTER SYSTEM. PRESSURE REGULATION: 40PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN.		8/IR-04
⊗	PIPE TRANSITION POINT PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING		9/IR-04
A	HUNTER PLD-AVR PLD-AVR ALLOWS FOR AIR TO ESCAPE A RESIDENTIAL DRIP IRRIGATION SYSTEM TO PREVENT BLOCKAGE AND WATER HAMMERING. 1/2IN. MPT CONNECTION WITH 80 PSI MAXIMUM RATING.		1/IR-05
ID	HUNTER ECO-ID ECO-ID: 1/2IN. FPT CONNECTION WITH 12 PSI-70 PSI OPERATING PRESSURE. SPECIFY WITH HUNTER SJ SWING JOINT.		11/IR-04
	AREA TO RECEIVE DRIPLINE HUNTER HDL-06-18-CV HDL-06-18-CV: HUNTER DRIPLINE W/ 0.6 GPH EMITTERS AT 18" O.C. CHECK VALVE, DARK BROWN TUBING WITH GRAY STRIPING. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL WITH HUNTER PLD BARBED OR PLD-LOC FITTINGS.	20	10/IR-04
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION		DETAIL
○	HUNTER ICV-G 1IN., 1-1/2IN., 2IN., AND 3IN. PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.		6/IR-04
◪	HUNTER HQ-3RC QUICK COUPLER VALVE, YELLOW RUBBER COVER, RED BRASS AND STAINLESS STEEL, WITH 3/4IN. NPT INLET, 1-PIECE BODY.		4/IR-04
	SHUT OFF VALVE B&K (107-900 SERIES) BRASS BALL VALVE WITH BRASS UNIONS (MATCH LINE SIZE)		2/IR-04
D	DRAIN VALVE WILKINS #200 ANGLE VALVE FOR MANUAL DRAIN VALVE ASSEMBLY W/ KEY EXTENSION (MATCH LINE SIZE)		5/IR-04
BF	FEBCO 850 1-1/4" DOUBLE CHECK BACKFLOW PREVENTION, 1/2IN. TO 2IN.		3/IR-04
C	HUNTER I2C-1600-PP 16 STATION OUTDOOR MODULAR CONTROLLER. WITH ONE ICM-800 MODULE. COMMERCIAL USE. PLASTIC PEDESTAL.		2/IR-05
M	WATER METER 1" IRRIGATION POINT OF CONNECTION AT NEW 1" METER INSTALLED BY GENERAL CONTRACTOR, SEE CIVIL PLANS FOR INFORMATION. FILED VERIFY EXACT LOCATION OF THE METER. SYSTEM AS DESIGNED ASSUMES A MINIMUM OF 65 PSI STATIC PRESSURE. NOTIFY LANDSCAPE ARCHITECT IF PRESSURE VARIES FROM WHAT IS INDICATED.		
POC	POINT OF CONNECTION 1 1/2" SEE EQUIPMENT LAYOUT AT SHEET IR-04		
———	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21		
— — — —	IRRIGATION MAINLINE: PVC SCHEDULE 40		
═══	PIPE SLEEVE: PVC CLASS 200 SDR 21		





IRRIGATION SLEEVE & CALL OUT



VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC
1	HUNTER ICV-G	1"	TURF ROTARY	19.77	44.3	54.3
2	HUNTER ICV-G	1"	TURF ROTARY	18.5	44.5	53.9
3	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	14.44	33.8	41.5
4	HUNTER ICV-G	1"	TURF ROTARY	16.97	45.1	52.9
5	HUNTER ICV-G	1-1/2"	TURF ROTARY	20.75	43.2	51.6
6	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	13.8	32.7	39.9
7	HUNTER ICV-G	1"	TURF ROTARY	11.88	49.5	55.6
8	HUNTER ICV-G	1"	TURF ROTARY	14.08	45.5	51.9
9	HUNTER ICV-G	1"	TURF ROTARY	19.73	44.7	52.6
10	HUNTER ICV-G	1"	TURF ROTARY	17.59	44.0	51.3
11	HUNTER ICV-G	1-1/2"	TURF ROTARY	20.62	43.4	51.9
12	HUNTER ICV-G	1-1/2"	TURF ROTARY	21.28	42.7	51.5
13	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	8.83	27.8	33.6
14	HUNTER ICV-G	1-1/2"	TURF ROTARY	22.68	44.1	54.2
15	HUNTER ICV-G	1"	TURF ROTARY	14.52	49.0	56.0
16	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	8.87	27.6	33.7
17	HUNTER ICV-G	1-1/2"	TURF ROTARY	20.24	48.6	59.0
18	HUNTER ICV-G	1"	TURF ROTARY	12.32	45.4	52.7

IRRIGATION SHEET NOTES (ALL SHEETS)

1. SEE DETAILS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. PLAN IS DIAGRAMMATIC. ALL PIPING, LATERALS, AND WIRE TO BE LOCATED IN BED OR LAWN AREAS WHERE APPROPRIATE.
3. PIPE SIZES ARE TO REMAIN CONSTANT BETWEEN PIPE SIZE CALL-OUTS. PIPES ARE LABELED TO SMALLEST PIPE SIZE ONLY (¾").
4. ALL IRRIGATION HEADS LOCATED IN LAWN AREAS SHALL BE 4" POP-UPS AND HEADS IN SHRUB AREAS SHALL BE 12" POP-UPS.
5. ALL DRIP TUBING SHALL BE INSTALLED BELOW THE FINISH SOIL GRADE UNLESS NOTED OTHERWISE. INSTALL TUBING AT A CONSISTENT DEPTH OF 2" BELOW TOP OF TOPSOIL.
6. ALL PIPES AND SLEEVES UNDER PAVED AREAS SHALL BE 24" DEEP. ALL MAINLINE SHALL BE 18" DEEP IN ALL UNPAVED AREAS, 24" IN PAVED ARES. ALL LATERALS SHALL BE 12" DEEP IN ALL UNPAVED AREAS AND 24" DEEP IN PAVED AREAS.
7. LOCATE ALL MAINLINES WITHIN THE PROJECT LIMITS. INSTALL #14-AWG DIRECT BURIAL LOW VOLTAGE WIRE ALONG MAINLINE; TAPE AND BUNDLE WIRE EVER 20' FT. PROVIDE RED COLOR WIRE FOR SIGNAL AND WHITE COLOR WIRE FOR COMMON. PROVIDE A MINIMUM OF ONE SPARE WIRE FOR EVERY 10 VALVES FOR A MAXIMUM OF FIVE SPARE WIRES.
8. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT/OWNER.
9. WHILE INSTALLING MAINLINE, VALVE BOXES, AND OTHER BELOW GRADE EQUIPMENT, CONTRACTOR SHALL MAINTAIN AS MUCH DISTANCE AS POSSIBLE FROM PROPOSED AND EXISTING TREES.

	REVISIONS	DATE	BY
1	REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2	REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

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8730 TALLON LANE NE, SUITE 300, LACEY, WA 98516
P: 360.352.1465
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SHEET TITLE: OVERALL IRRIGATION PLAN

PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

SEAL:

DESIGNER: N. DORKINA
DRAWN BY: N. DORKINA
APPROVED BY: T. GRANTHAM
DATE: DECEMBER 24, 2024
JOB NO: 24-000722
DRAWING FILE NO: _24-000722 X-IR
DRAWING NO: IR-01
SHEET NO: 5 OF 9

May 19, 2025 11:30:02am - User: natalie.dorkina
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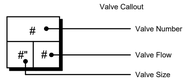
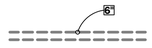
IRRIGATION SCHEDULE IR-02

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	DETAIL
LST SST RST	HUNTER MP STRIP PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. LCS=IVORY LEFT STRIP, SS=BROWN SIDE STRIP, RCS=COPPER RIGHT STRIP.	40	7/IR-04
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	DETAIL
□	HUNTER ICZ-101-40 DRIP CONTROL ZONE KIT. 1IN. ICV GLOBE VALVE WITH 1IN. HY100 FILTER SYSTEM. PRESSURE REGULATION: 40PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN.		8/IR-04
⊛	PIPE TRANSITION POINT PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING		9/IR-04
Ⓐ	HUNTER PLD-AVR PLD-AVR ALLOWS FOR AIR TO ESCAPE A RESIDENTIAL DRIP IRRIGATION SYSTEM TO PREVENT BLOCKAGE AND WATER HAMMERING. 1/2IN. MPT CONNECTION WITH 80 PSI MAXIMUM RATING.		1/IR-05
ⓘⒹ	HUNTER ECO-ID ECO-ID: 1/2IN. FPT CONNECTION WITH 12 PSI-70 PSI OPERATING PRESSURE. SPECIFY WITH HUNTER SJ SWING JOINT.		11/IR-04
	AREA TO RECEIVE DRIPLINE HUNTER HDL-06-18-CV HDL-06-18-CV: HUNTER DRIPLINE W/ 0.6 GPH EMITTERS AT 18" O.C. CHECK VALVE, DARK BROWN TUBING WITH GRAY STRIPING. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL WITH HUNTER PLD BARBED OR PLD-LOC FITTINGS.	20	10/IR-04
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION		DETAIL
○	HUNTER ICV-G 1IN., 1-1/2IN., 2IN., AND 3IN. PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.		6/IR-04
Ⓓ	DRAIN VALVE WILKINS #200 ANGLE VALVE FOR MANUAL DRAIN VALVE ASSEMBLY W/ KEY EXTENSION (MATCH LINE SIZE)		5/IR-04
———	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21		
— — — —	IRRIGATION MAINLINE: PVC SCHEDULE 40		
= = = = = = = =	PIPE SLEEVE: PVC CLASS 200 SDR 21		

Valve Callout

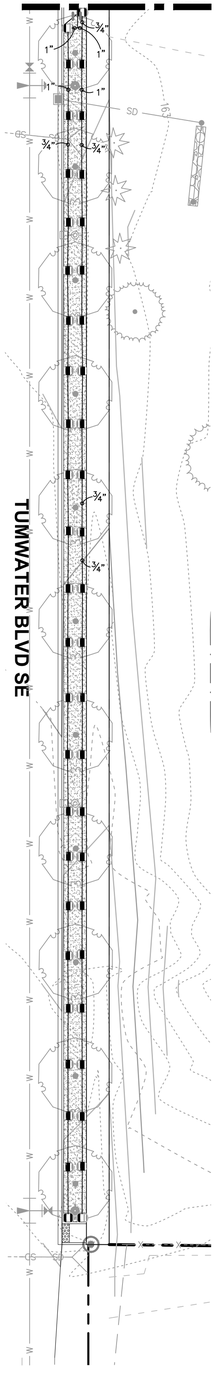


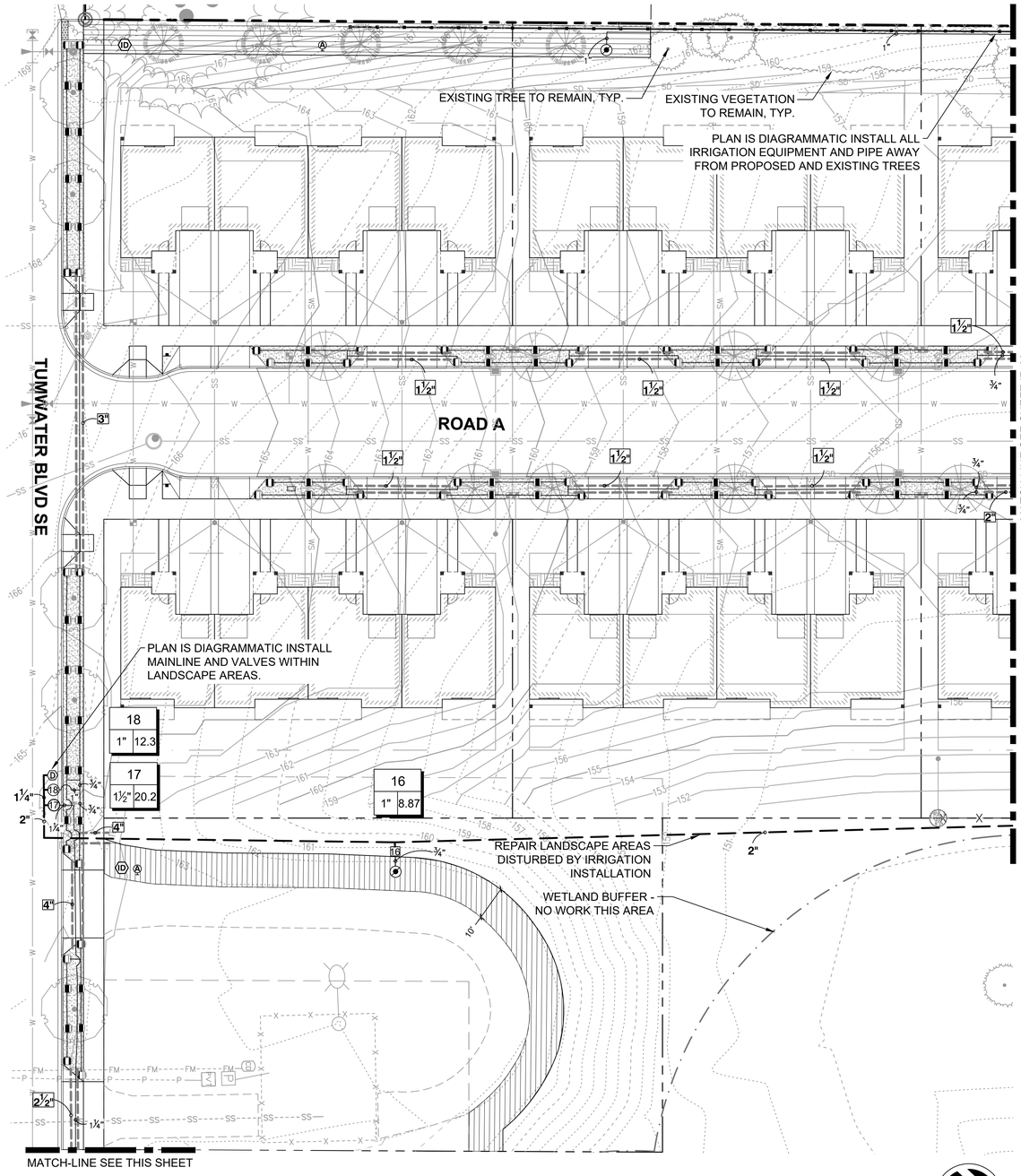


IRRIGATION SLEEVE & CALL OUT

VALVE SCHEDULE IR-02

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC
16	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	8.87	27.6	33.7
17	HUNTER ICV-G	1-1/2"	TURF ROTARY	20.24	48.6	59.0
18	HUNTER ICV-G	1"	TURF ROTARY	12.32	45.4	52.7





0 20 40 60 feet

SCALE: 1" = 20'

NORTH

REVISIONS		DATE	BY
1	REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2	REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

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P: 360.352.1465
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SHEET TITLE: SOUTH IRRIGATION PLAN

PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

SEAL:

DESIGNER:	N. DORKINA
DRAWN BY:	N. DORKINA
APPROVED BY:	T. GRANTHAM
DATE:	DECEMBER 24, 2024
JOB NO:	24-000722
DRAWING FILE NO:	_24-000722 X-IR
DRAWING NO:	IR-02
SHEET NO:	6 OF 9

May 19, 2025 11:30:05am - User: natalia.dorkina
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IRRIGATION SCHEDULE IR-03

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	DETAIL
CORNER	HUNTER MP CORNER PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE. T=TURQUOISE ADJ ARC 45-105 ON PRS40 BODY.	40	7/IR-04
LST SST RST	HUNTER MP STRIP PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. LCS=IVORY LEFT STRIP, SS=BROWN SIDE STRIP, RCS=COPPER RIGHT STRIP.	40	7/IR-04
1000	HUNTER MP1000 PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. M=MAROON ADJ ARC 90 TO 210, L=LIGHT BLUE 210 TO 270 ARC, O=OLIVE 360 ARC.	40	7/IR-04
2000	HUNTER MP2000 PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. K=BLACK ADJ ARC 90-210, G=GREEN ADJ ARC 210-270, R=RED 360 ARC.	40	7/IR-04
3000	HUNTER MP3000 PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH FACTORY INSTALLED CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. B=BLUE ADJ ARC 90-210, Y=YELLOW ADJ ARC 210-270, A=GRAY 360 ARC.	40	7/IR-04
800 A 800 F	HUNTER MP800SR PROS-04-PRS40-CV TURF ROTATOR, 4IN. POP-UP WITH CHECK VALVE, PRESSURE REGULATED TO 40 PSI, MP ROTATOR NOZZLE ON PRS40 BODY. ADJ=ORANGE AND GRAY (ARC 90-210), 360=LIME GREEN AND GRAY (ARC 360)	40	7/IR-04
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	PSI	DETAIL
	HUNTER ICZ-101-40 DRIP CONTROL ZONE KIT. 1IN. ICV GLOBE VALVE WITH 1IN. HY100 FILTER SYSTEM. PRESSURE REGULATION: 40PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN.		8/IR-04
	PIPE TRANSITION POINT PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING		9/IR-04
A	HUNTER PLD-AVR PLD-AVR ALLOWS FOR AIR TO ESCAPE A RESIDENTIAL DRIP IRRIGATION SYSTEM TO PREVENT BLOCKAGE AND WATER HAMMERING. 1/2IN. MPT CONNECTION WITH 80 PSI MAXIMUM RATING.		1/IR-05
ID	HUNTER ECO-ID ECO-ID: 1/2IN. FPT CONNECTION WITH 12 PSI-70 PSI OPERATING PRESSURE. SPECIFY WITH HUNTER SJ SWING JOINT.		11/IR-04
	AREA TO RECEIVE DRIPLINE HUNTER HDL-06-18-CV HDL-06-18-CV: HUNTER DRIPLINE W/ 0.6 GPH EMITTERS AT 18" O.C. CHECK VALVE, DARK BROWN TUBING WITH GRAY STRIPING. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. INSTALL WITH HUNTER PLD BARBED OR PLD-LOC FITTINGS.	20	10/IR-04
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION		DETAIL
	HUNTER ICV-G 1IN., 1-1/2IN., 2IN., AND 3IN. PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE.		6/IR-04
	HUNTER HQ-3RC QUICK COUPLER VALVE, YELLOW RUBBER COVER, RED BRASS AND STAINLESS STEEL, WITH 3/4IN. NPT INLET, 1-PIECE BODY.		4/IR-04
	SHUT OFF VALVE B&K (107-900 SERIES) BRASS BALL VALVE WITH BRASS UNIONS (MATCH LINE SIZE)		2/IR-04
D	DRAIN VALVE WILKINS #200 ANGLE VALVE FOR MANUAL DRAIN VALVE ASSEMBLY W/ KEY EXTENSION (MATCH LINE SIZE)		5/IR-04
BF	FEBCO 850 1-1/4" DOUBLE CHECK BACKFLOW PREVENTION, 1/2IN. TO 2IN.		3/IR-04
C	HUNTER I2C-1600-PP 16 STATION OUTDOOR MODULAR CONTROLLER. WITH ONE ICM-800 MODULE. COMMERCIAL USE. PLASTIC PEDESTAL.		2/IR-05
M	WATER METER 1" IRRIGATION POINT OF CONNECTION AT NEW 1" METER INSTALLED BY GENERAL CONTRACTOR, SEE CIVIL PLANS FOR INFORMATION. FILED VERIFY EXACT LOCATION OF THE METER. SYSTEM AS DESIGNED ASSUMES A MINIMUM OF 65 PSI STATIC PRESSURE. NOTIFY LANDSCAPE ARCHITECT IF PRESSURE VARIES FROM WHAT IS INDICATED.		
POC 1"	POINT OF CONNECTION 1 1/2" SEE EQUIPMENT LAYOUT AT SHEET IR-04		
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21		
	IRRIGATION MAINLINE: PVC SCHEDULE 40		
	PIPE SLEEVE: PVC CLASS 200 SDR 21		

Valve Callout

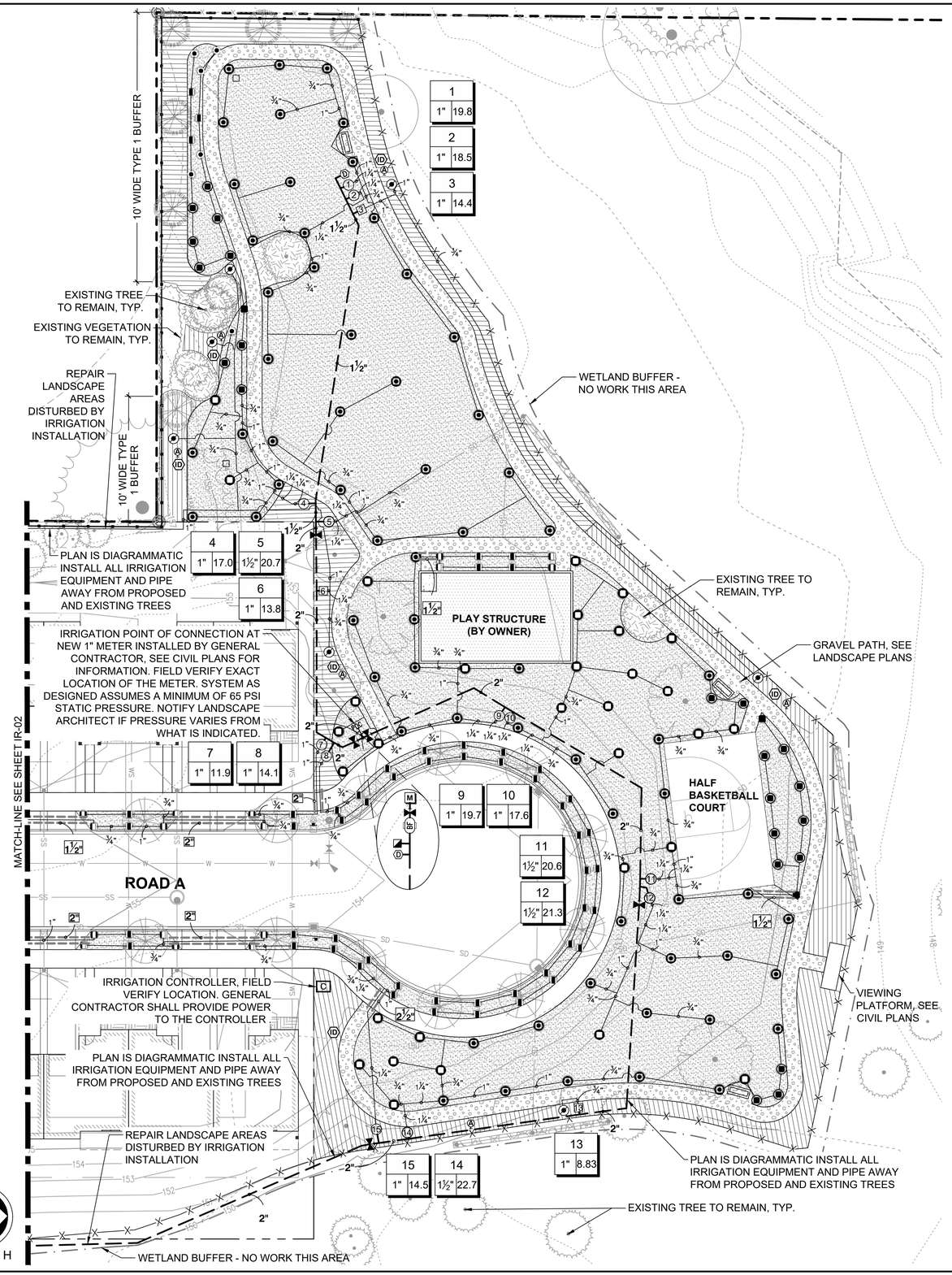
Valve Number

#" # Valve Flow / Valve Size

6 IRRIGATION SLEEVE & CALL OUT

VALVE SCHEDULE IR-03

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC
1	HUNTER ICV-G	1"	TURF ROTARY	19.77	44.3	54.3
2	HUNTER ICV-G	1"	TURF ROTARY	18.5	44.5	53.9
3	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	14.44	33.8	41.5
4	HUNTER ICV-G	1"	TURF ROTARY	16.97	45.1	52.9
5	HUNTER ICV-G	1-1/2"	TURF ROTARY	20.75	43.2	51.6
6	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	13.8	32.7	39.9
7	HUNTER ICV-G	1"	TURF ROTARY	11.88	49.5	55.6
8	HUNTER ICV-G	1"	TURF ROTARY	14.08	45.5	51.9
9	HUNTER ICV-G	1"	TURF ROTARY	19.73	44.7	52.6
10	HUNTER ICV-G	1"	TURF ROTARY	17.59	44.0	51.3
11	HUNTER ICV-G	1-1/2"	TURF ROTARY	20.62	43.4	51.9
12	HUNTER ICV-G	1-1/2"	TURF ROTARY	21.28	42.7	51.5
13	HUNTER ICZ-101-40	1"	AREA FOR DRIPLINE	8.83	27.8	33.6
14	HUNTER ICV-G	1-1/2"	TURF ROTARY	22.68	44.1	54.2
15	HUNTER ICV-G	1"	TURF ROTARY	14.52	49.0	56.0



0 20 40 60 feet

SCALE: 1" = 20'

NORTH

REVISIONS	DATE	BY
1 REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2 REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

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8730 TALLON LANE NE, SUITE 300, LACEY, WA 98516
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SHEET TITLE: NORTH IRRIGATION PLAN

PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

SEAL: STATE OF WASHINGTON TRENT L. GRANTHAM No. 843 EXP. 07/22/2026 LANDSCAPE ARCHITECT

DESIGNER:	N. DORKINA
DRAWN BY:	N. DORKINA
APPROVED BY:	T. GRANTHAM
DATE:	DECEMBER 24, 2024
JOB NO:	24-000722
DRAWING FILE NO:	_24-000722 X-IR
DRAWING NO:	IR-03
SHEET NO:	7 OF 9

May 19, 2025 - 11:30:10am - User: natalia.dorkina
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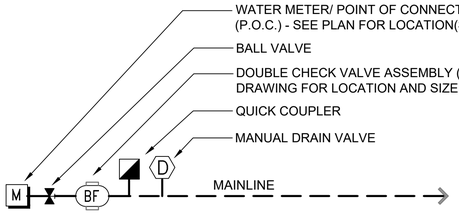
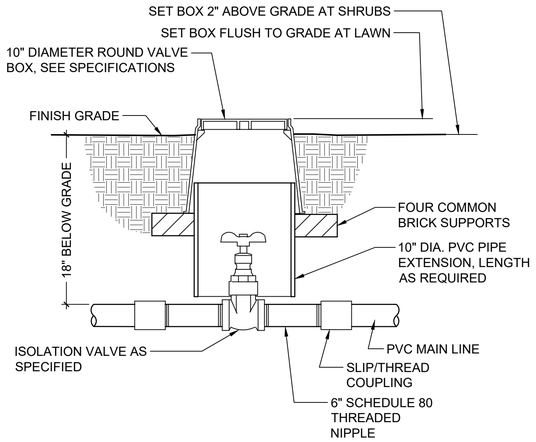
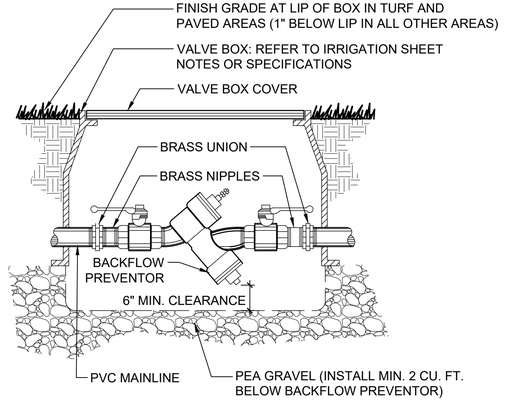
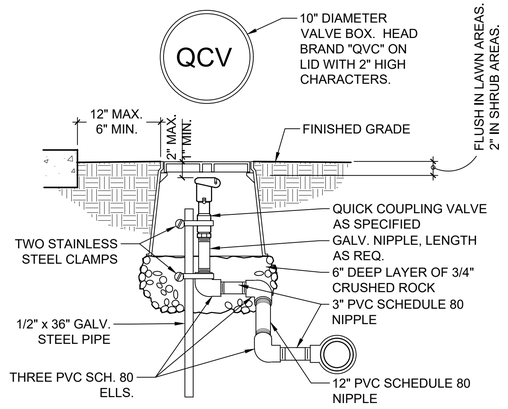


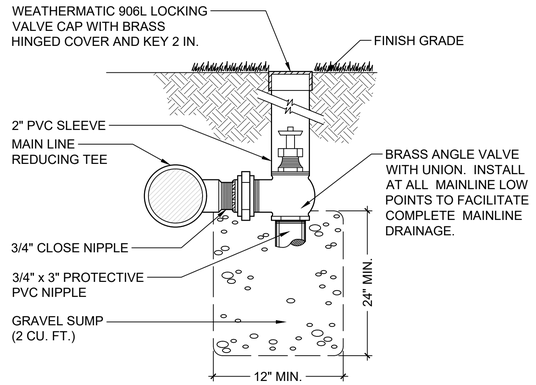






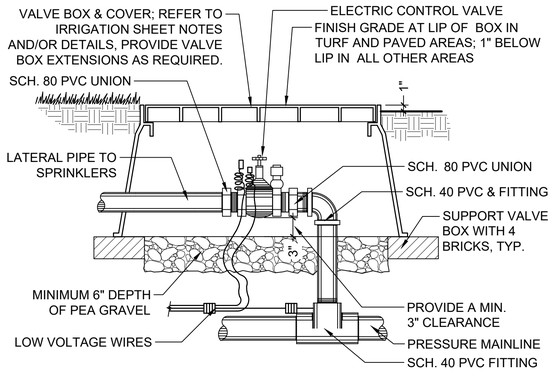
1 POINT OF CONNECTION

N.T.S. P-MU-TUM2-07



2 SHUT OFF VALVE

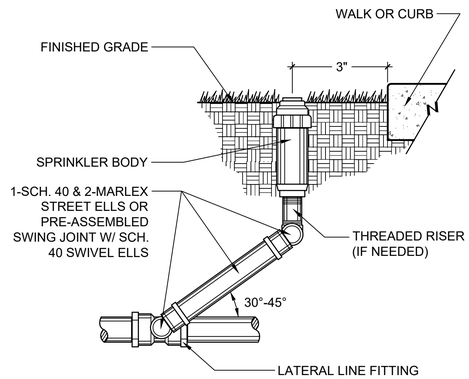
1 1/2" = 1'-0" P-MU-TUM2-03



NOTE: ALL WIRES TO BE INSTALLED AS PER LOCAL CODES. NO "IN-LINE" WIRE SPLICES ALLOWED. TAPE AND BUNDLE WIRES EVERY 20 FEET. PROVIDE EXPANSION COILS AT EACH VALVE - WRAPPING WIRE AROUND 1/2" PIPE 15 TIMES. ALL THREADED CONNECTIONS SHALL BE MADE WITH TEFLON TAPE.

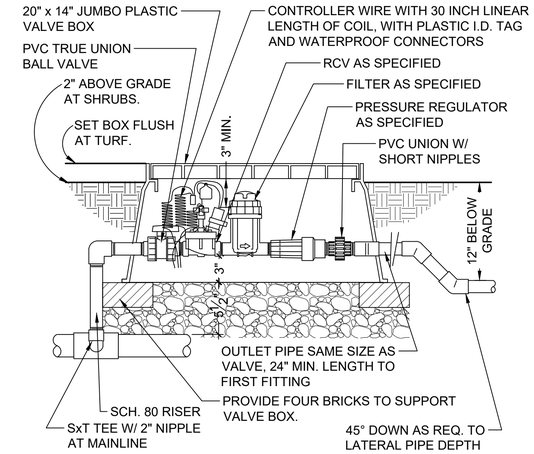
3 DOUBLE CHECK VALVE (DCVA)

N.T.S. P-MU-TUM2-06



4 QUICK COUPLING VALVE IN BOX

1 1/2" = 1'-0" P-MU-TUM2-02



5 MANUAL DRAIN VALVE DETAIL

N.T.S. P-MU-TUM2-04

6 ELECTRONIC CONTROL VALVE

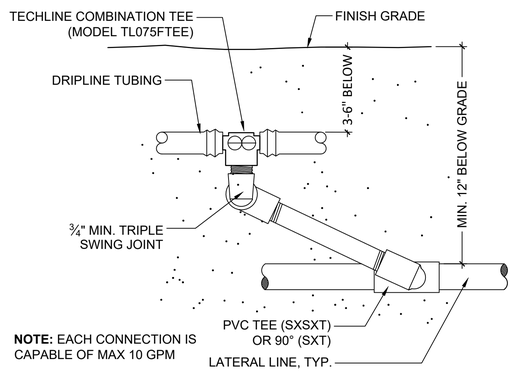
1" = 1'-0" P-MU-TUM2-12

7 POP-UP SPRINKLER HEAD

N.T.S. P-MU-TUM2-05

8 DRIP VALVE W/ BASKET FILTER

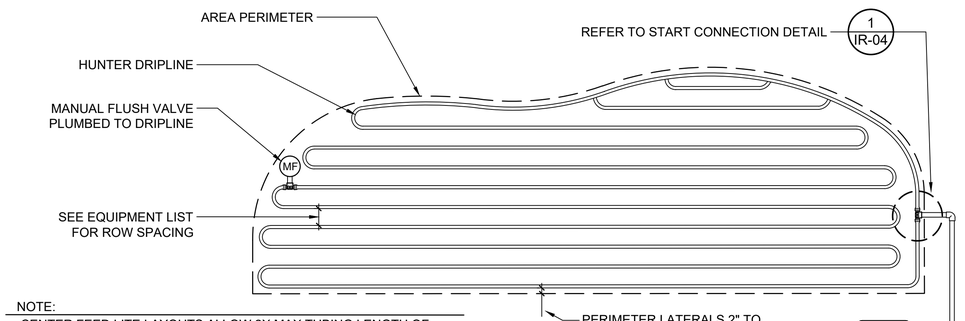
1 1/2" = 1'-0" P-MU-TUM2-16



NOTE: EACH CONNECTION IS CAPABLE OF MAX 10 GPM

9 TECHLINE START CONNECTION (SWING JOINT RISER)

N.T.S. P-MU-TUM2-14



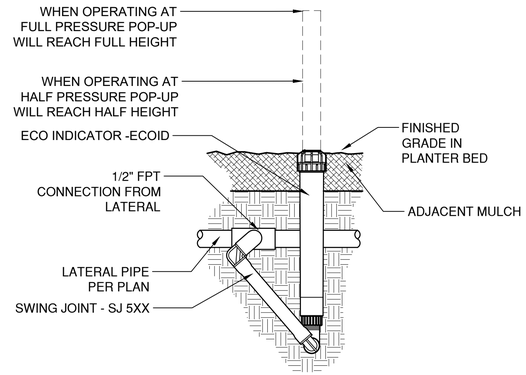
NOTE:
-CENTER FEED LITE LAYOUTS ALLOW 2X MAX TUBING LENGTH OF STANDARD LAYOUTS.
-CHECK VALVE HOLDS BACK 4.6' OF WATER

BELOW ARE MAX LINE DISTANCES FOR CENTER FEED LITE LAYOUT @ 25 PSI INLET; REFER TO FULL CHART FOR ALTERNATE PRESSURES:

.4 @ 12" o.c. = 380'	.6 @ 12" o.c. = 314'	.9 @ 12" o.c. = 214'
.4 @ 18" o.c. = 532'	.6 @ 18" o.c. = 441'	.9 @ 18" o.c. = 304'
.4 @ 24" o.c. = 675'	.6 @ 24" o.c. = 560'	.9 @ 24" o.c. = 385'

10 HUNTER DRIPLINE - IRREGULAR AREAS

N.T.S. P-MU-TUM2-23



11 ECO INDICATOR WITH SWING JOINT

3" = 1'-0" P-MU-TUM2-19

REV/SIONS		DATE	BY
1	REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2	REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

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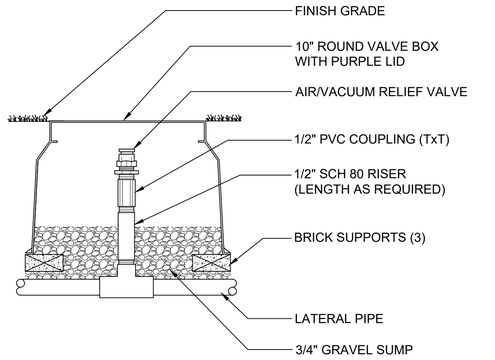
SHEET TITLE: IRRIGATION DETAILS

PROJECT NAME: TUMWATER TOWNHOMES
7115 DENNIS ST SE
TUMWATER, WA

SEAL: STATE OF WASHINGTON · TRENT L. GRANTHAM · 21703 · REGISTERED LANDSCAPE ARCHITECT

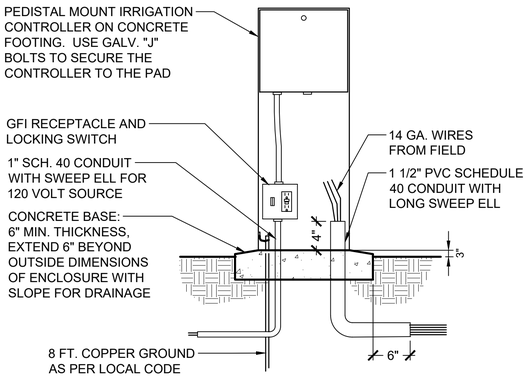
DESIGNER:	N. DORKINA
DRAWN BY:	N. DORKINA
APPROVED BY:	T. GRANTHAM
DATE:	DECEMBER 24, 2024
JOB NO:	24-000722
DRAWING FILE NO:	24-000722 X-IR
DRAWING NO:	IR-04
SHEET NO:	8 OF 9

May 19, 2025 11:30:13am – User: ndorkina dorkina
N:\PROJECTS\5275 JSA CIVIL, LLC\24-000722 TUMWATER TOWNHOMES\CAD_24-000722 X-IR.DWG



1 AIR RELIEF PVC RISER

1 1/2" = 1'-0" P-MU-TUM2-24



2 PEDESTAL MOUNT CONTROLLER

1" = 1'-0" P-MU-TUM2-17

IRRIGATION SPECIFICATIONS

1. THIS PLAN IS DIAGRAMMATIC; ALL PIPING, VALVES, ETC. SHALL BE INSTALLED IN SHRUB BEDS WHERE POSSIBLE AND SHALL FOLLOW THE PLAN AS CLOSE AS IS PRACTICAL.
2. LOCATE ALL MAINLINES WITHIN THE PROJECT LIMITS.
3. PIPE SIZES ARE CONSTANT BETWEEN PIPE SIZE CALL-OUTS. ALL LATERIAL PIPES SHALL BE INSTALLED AT 12" DEPTH AND 24" DEPTH UNDER PAVED AREAS. MAINLINE PIPE SHALL BE INSTALLED AT 18" BELOW GRADE AND 24" BELOW PAVED AREAS.
4. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
5. ALL PIPING AND WIRING UNDER PAVED AREAS SHALL BE HOUSED IN CLASS 200 PVC SLEEVES INSTALLED AT A 24" DEPTH. SIZE SLEEVES AS NEEDED TO ACCOMMODATE PIPE AND WIRES, UNLESS OTHERWISE SPECIFIED ON DRAWING.
6. CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED TO OBTAIN FULL COVERAGE. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO MAKE NOZZLE CHANGES AS NEEDED AT NO ADDITIONAL COST. ADJUST HEAD POSITIONS AND ADD OR DELETE HEADS AS NEEDED DEPENDING ON ACTUAL FIELD CONDITIONS.
7. ALL MANUAL, GATE AND ELECTRICAL VALVES AND OTHER UNDERGROUND EQUIPMENT SHALL BE HOUSED IN NELSON, AMETEK OR EQUAL RECTANGULAR VALVE BOXES.
8. NO IN-LINE WIRE SPLICES ALLOWED. SUPPLY VALVE BOXES AT ALL ELECTRICAL JUNCTIONS. TAPE AND BUNDLE WIRES EVERY 25 LINEAR FEET.
9. CONTRACTOR IS RESPONSIBLE FOR COMPLETE SYSTEM DRAINAGE. INSTALL KING BROS. 1/2" AUTOMATIC DRAIN VALVES AT LATERAL LINE LOW POINT(S). INSTALL MANUAL DRAINS AT ALL MAINLINE LOW POINT(S) AND WHERE INDICATED ON PLAN. CONTRACTOR SHALL PROVIDE ADJUSTABLE CHECK VALVES ON ANY IRRIGATION HEAD THAT EXPERIENCES LOW HEAD DRAINAGE.
10. ALL THREADED PIPE CONNECTIONS SHALL BE MADE USING TEFLON TAPE WRAPPED AT LEAST THREE TIMES AROUND PIPE THREADS.
11. ALL GATE AND ELECTRIC VALVES SHALL BE INSTALLED WITH UNIONS ON THE DOWNSTREAM END OF THE VALVE (REFER TO DETAILS).
12. ALL PIPE SHALL HAVE A FIRM UNIFORM BEARING FOR THE ENTIRE LENGTH OF EACH LINE, FREE OF ROCKS OR DEBRIS. ALL TRENCHES CONTAINING PIPE AND/OR WIRES SHALL BE BACKFILLED WITH CLEAN TOPSOIL, FREE OF ALL LUMBER, RUBBISH AND ROCKS OVER 1" IN SIZE, OR CLEAN SAND IF CLEAN TOPSOIL IS NOT AVAILABLE.
13. CONTRACTOR SHALL PROVIDE OWNER WITH ONE SET OF AS-BUILT RECORD DRAWINGS SHOWING EXACT ACTUAL LOCATIONS OF ALL SPRINKLER EQUIPMENT. CONTRACTOR SHALL ORIENT OWNER WITH COMPLETE SYSTEM AND CONTROLLER OPERATIONS, AND WINTERIZATION PROCEDURES.
14. CONTRACTOR SHALL SUPPLY AND INSTALL ALL EQUIPMENT SHOWN ON THE PLANS AND INDICATED IN THE SPECIFICATIONS TO ACHIEVE PROPER OPERATION OF SAID EQUIPMENT. ALL EQUIPMENT INSTALLATIONS, ELECTRICAL AND PLUMBING CONNECTIONS SHALL BE IN CONFORMANCE WITH ALL APPLICABLE CODES AND ORDINANCES, THESE SPECIFICATIONS, AND THE MANUFACTURERS RECOMMENDATIONS WHETHER INDICATED ON THE DRAWINGS OR NOT.
15. CONTRACTOR SHALL INCLUDE IN HIS BID ONE FALL WINTERIZATION AND ONE SPRING ACTIVATION OF IRRIGATION SYSTEM. THESE ACTIVITIES SHALL BE INCLUDED AS PART OF OWNER ORIENTATION PROCEDURES. ANY DAMAGE TO THE IRRIGATION SYSTEM OR THE LANDSCAPE AS A RESULT OF FAILURE TO COMPLY WITH THESE REQUIREMENTS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
16. CONTRACTOR SHALL GUARANTEE IN WRITING ON HIS COMPANY LETTERHEAD ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE FULL YEAR FOLLOWING ACCEPTANCE OF SYSTEM INSTALLATION.
17. BACKFLOW PREVENTOR SHALL BE INSPECTED AND TESTED BY A CERTIFIED BACKFLOW DEVICE INSPECTOR. PROVIDE OWNER WITH ONE COPY OF APPROVAL CERTIFICATE.

LANDSCAPE SPECIFICATIONS

1. REFER TO DETAILS FOR ADDITIONAL INFORMATION.
2. CHEMICALLY KILL AND REMOVE FROM SITE ALL EXISTING WEEDS AND VEGETATION NOT SHOWN TO REMAIN ON PLANS.
3. DISTRIBUTE IMPORTED SANDY LOAM TOPSOIL (APPROVED BY THE LANDSCAPE ARCHITECT) IN AREAS SHOWN AND AT DEPTHS INDICATED FOR CROWNING AND BERMING OF LANDSCAPE AREAS, AND BACKFILL OF RETAINING WALLS (IF REQUIRED). DOTTED LINES INDICATE 1' CONTOUR INTERVALS. ALL LANDSCAPE AREAS SHALL RECEIVE TOPSOIL, WHETHER INDICATED ON PLANS OR NOT, SO THAT FINISH GRADES OF ALL SHRUB BEDS SHALL BE 2" BELOW TOPS OF ADJACENT CURBS AND PAVEMENT, AND LAWN AREAS SHALL BE 1/2" BELOW TOPS OF ADJACENT CURBS AND PAVEMENT. STRUCTURAL FILL AREAS: ANY LANDSCAPE AREAS OCCURRING WITHIN STRUCTURAL FILL ZONES SHALL HAVE SAID STRUCTURAL FILL MATERIALS EXCAVATED TO A DEPTH OF 12" BELOW FINISH GRADES IN SHRUB AREAS AND 6" BELOW GRADE IN LAWN AREAS, AND REPLACED WITH SPECIFIED TOPSOIL. DISPOSE OF EXCAVATED MATERIAL OFF SITE.
4. FINE GRADE ALL LANDSCAPE BEDS PRIOR TO PLANTING OPERATIONS.
5. NO PLANT SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL OF LANDSCAPE ARCHITECT/OWNER.
6. ALL PLANTS SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.
7. ALL PLANT MATERIALS AND PLANT LOCATIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
8. ROOT BARRIER SHALL BE INCORPORATED ADJACENT AND PARALLEL TO PAVING, CURB AND SIDEWALK, A MINIMUM OF 15 LINEAR FEET (7.5' ON EITHER SIDE OF TRUNK), 24" DEEP, WHERE ANY TREE IS WITHIN 8' OF PAVING, CURB OR SIDEWALK. ROOT BARRIER SHALL BE DEEPROOT UB-24 AS AVAILABLE FROM EWING IRRIGATION PRODUCTS, 2901 S TACOMA WAY, TACOMA, WA 98409 (253) 476-9530 OR APPROVED EQUAL.
9. SOIL AMENDMENT FOR SOIL PREPARATION AND PLANTING BACKFILL SHALL BE A SCREENED 5/8" MINUS NITRIFIED WOOD RESIDUAL COMPOST EQUAL TO:
   A. "SILVER SPRINGS TOP GRADE COMPOST" BRAND COMPOST AS AVAILABLE FROM CORLISS RESOURCES LAKE TAPPS, WA (253) 279-9102.
   B. "CEDAR GROVE COMPOST" BRAND COMPOST AS AVAILABLE FROM CEDAR GROVE COMPOST, MAPLE VALLEY, WA (877) 764-5748.
   C. PREP/LRI COMPOST AS AVAILABLE FROM RANDLES SAND AND GRAVEL, INC., PUYALLUP, WA (253) 537-6828.
10. SOIL PREPARATION - (ALL LANDSCAPE AREAS). SPREAD 9 C.Y. OF SPECIFIED SOIL AMENDMENT PER 1000 S.F. (APPROX. 3" DEPTH) OF AREA. SPREAD 100 LBS./1000 S.F. OF DOLOMITE LIME (IN LAWN AREAS ONLY), 150 LBS./1000 S.F. OF AGRICULTURAL GYPSUM AND 15 LBS./1000 S.F. OF 16-8-8 COMMERCIAL FERTILIZER OVER SOIL AMENDMENT. ROTO-TILL ALL OF THE ABOVE TO A 6"-8" DEPTH AND GRADE SMOOTH, COMPACTING AS REQUIRED AND REMOVING ALL ROCKS, CLODS AND DEBRIS.
11. LAWN AREAS (SEED OR SOD REFER TO PLANS) SHALL CONSIST OF ONE OF THE FOLLOWING TURF TYPES:

    60% TURF-TYPE PERENNIAL RYE GRASS VARIETIES
    20% BLUEGRASS
    20% HARD FESCUE

    60% TURF-TYPE PERENNIAL RYE GRASS VARIETIES
    40% TURF-TYPE FESCUE
12. SEED AND SOD SHALL BE EQUAL TO THAT AS GROWN BY COUNTRY GREEN TURF FARMS; OLYMPIA, WA OR JB INSTANT LAWN, REDMOND, WA. SEED SHALL BE APPLIED AT 7 LBS/1000 S.F. AND INCLUDE 10 LBS./1000 S.F. OF UNITED HORTICULTURE 15-5-10 FERTILIZER IN ALL LAWN AREAS.
13. ALL TREES IN LAWN AREAS SHALL BE PLANTED IN A 3' DIAMETER CIRCLE OF BED MULCH.
14. BACKFILL MIX FOR ALL PLANTS (EXCEPT RHODODENDRONS & AZALEAS) SHALL BE A BLEND OF 1/3 EXISTING SITE SOIL, 1/3 COARSE SAND, AND 1/3 SOIL AMENDMENT SPECIFIED IN NO. 9. BACKFILL MIX FOR RHODODENDRONS AND AZALEAS SHALL CONSIST OF 2/3 ABOVE SPECIFIED BACKFILL MIX AND 1/3 FINE GRIND HEM-FIR BARK MULCH.
15. APPLY OSMOCOTE 18-6-12, 9 MONTH SLOW RELEASE FERTILIZER OVER THE SURFACE OF ALL PLANT PITS AT THE FOLLOWING RATES:

TREES OVER 10' HEIGHT	2 CUPS	TREES UNDER 10' HEIGHT:	1 CUP
ALL SHRUBS EXCEPT 1 GALLONS:	1/2 CUP	1 GALLON PLANTS:	1/4 CUP
GROUND COVERS:	1/4 CUP		

16. FERTILIZER TABLETS FOR ALL PLANTS SHALL BE AGRIFORM (20-10-5) 21 GRAM OR 10 GRAM TABLETS DISTRIBUTED AS FOLLOWS: ALL TREES: 4-21 GRAM TABLETS, ALL SHRUBS (EXCEPT 1 GALLONS): 3-21 GRAM TABLETS, ALL 1 GALLONS: 1-21 GRAM TABLET, ALL 2-1/4" AND 4" POT GROUND COVERS: 1-10 GRAM TABLET EACH. SET TABLETS DIRECTLY NEXT TO ROOTBALL.
17. ALL SHRUB AND GROUND COVER BEDS SHALL RECEIVE A 3" DEPTH (9 C.Y. PER 1000 S.F.) OF "MEDIUM/ FINE GRIND" HEM/FIR BARK MULCH AS TOP DRESSING.
18. APPLY A GRANULAR PRE-EMERGENT HERBICIDE TO ALL SHRUB AND GROUNDCOVER BEDS AT THE CONCLUSION OF THE MAINTENANCE PERIOD. DO NOT USE CASARON OR NORASAC BRANDS.
19. ALL WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE LANDSCAPE ARCHITECT/OWNER.
20. ALL PLANTS SHALL BE GUARANTEED FOR ONE FULL YEAR FROM DATE OF PROJECT ACCEPTANCE. ALL REPLACED PLANTS SHALL BE RE-GUARANTEED. ALL REPLACEMENTS SHALL BE MADE WITHIN 21 DAYS OF RECEIVING WRITTEN NOTICE FROM THE OWNER. CONTRACTOR SHALL NOT BE RESPONSIBLE FOR PLANTS DYING DUE TO OWNER NEGLECT OR VANDALISM, AFTER THE MAINTENANCE PERIOD.
21. PLANT LIST QUANTITIES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES IN LIST WITH ACTUAL PLAN CALL-OUTS, AND INSTALLING PLANTINGS PER THE LANDSCAPE PLAN. GROUNDCOVER AND/OR MASS SHRUB QUANTITIES SHALL BE ADJUSTED AS REQUIRED FOR FIELD CONDITIONS AT THE SPECIFIED SPACING.
22. FINAL INSPECTION SHALL OCCUR AT THE CONCLUSION OF A 60-DAY MAINTENANCE & PLANT ESTABLISHMENT PERIOD. MAINTENANCE PERIOD SHALL COMMENCE UPON COMPLETION OF ALL LANDSCAPE INSTALLATION ACTIVITIES AND SHALL INCLUDE THE FOLLOWING:
    A. MOW LAWNS ONCE PER WEEK.
    B. REMOVE ALL WEEDS OVER 1" IN HEIGHT.
    C. REPLACE DEAD OR UNHEALTHY PLANTS.
    D. ENSURE PROPER FUNCTION OF IRRIGATION SYSTEM.
    E. ENSURE ADEQUATE MOISTURE IS DELIVERED TO ALL LANDSCAPE BEDS INCLUDING NON-IRRIGATED AREAS.
    F. FERTILIZE ALL LAWNS AT CONCLUSION OF MAINTENANCE AND PLANT ESTABLISHMENT PERIOD.

△	REVISIONS	DATE	BY
1	REVISIONS DUE TO CITY COMMENTS	04/09/2025	ND
2	REVISIONS DUE TO SITE PLAN CHANGES	05/19/2025	ND

SCJ ALLIANCE
CONSULTING SERVICES
8730 TALLON LANE NE, SUITE 200, LACEY, WA 98516
P: (360) 352-1465
SCJALLIANCE.COM

SHEET TITLE: IRRIGATION DETAILS

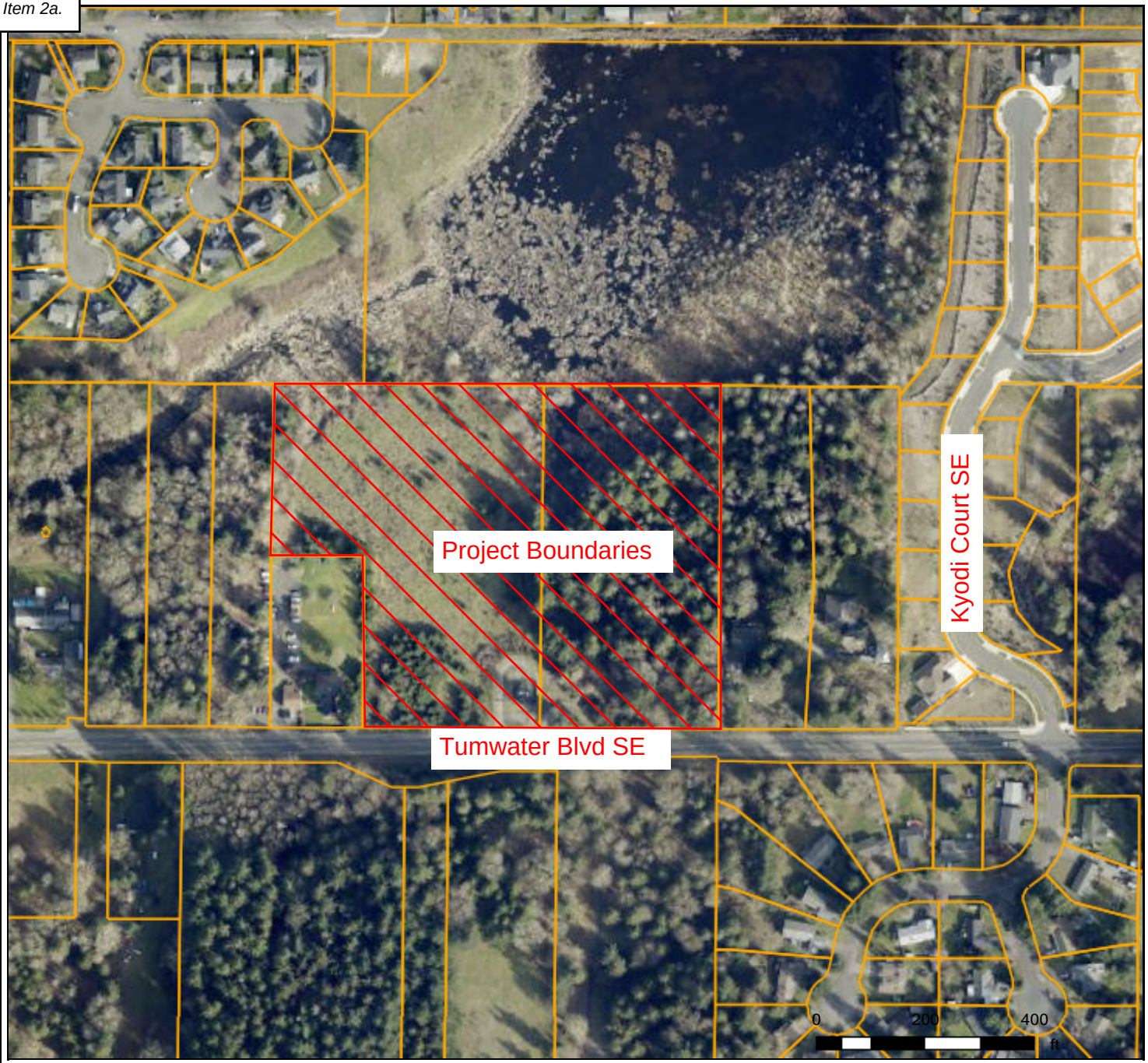
PROJECT NAME: TUMWATER TOWNHOMES
715 DENNIS ST SE
TUMWATER, WA

SEAL:

DESIGNER: N. DORKINA
DRAWN BY: N. DORKINA
APPROVED BY: T. GRANTHAM
DATE: DECEMBER 24, 2024
JOB NO: 24-000722
DRAWING FILE NO: _24-000722 X-IR
DRAWING NO: IR-05
SHEET NO: 9 OF 9

May 19, 2025 - 11:30:18pm - User: natalia.dorkina
N:\PROJECTS\5275 JSA CIVIL, LLC\24-000722 TUMWATER TOWNHOMES\CAD_24-000722 X-IR.DWG

Tumwater Blvd Condos Vicinity Map



Legend

Parcels

Parcel Boundaries

Author:

Published: 16/9/2025

Notes

THURSTON COUNTY
WASHINGTON
SINCE 1852

Thurston County GeoData Center

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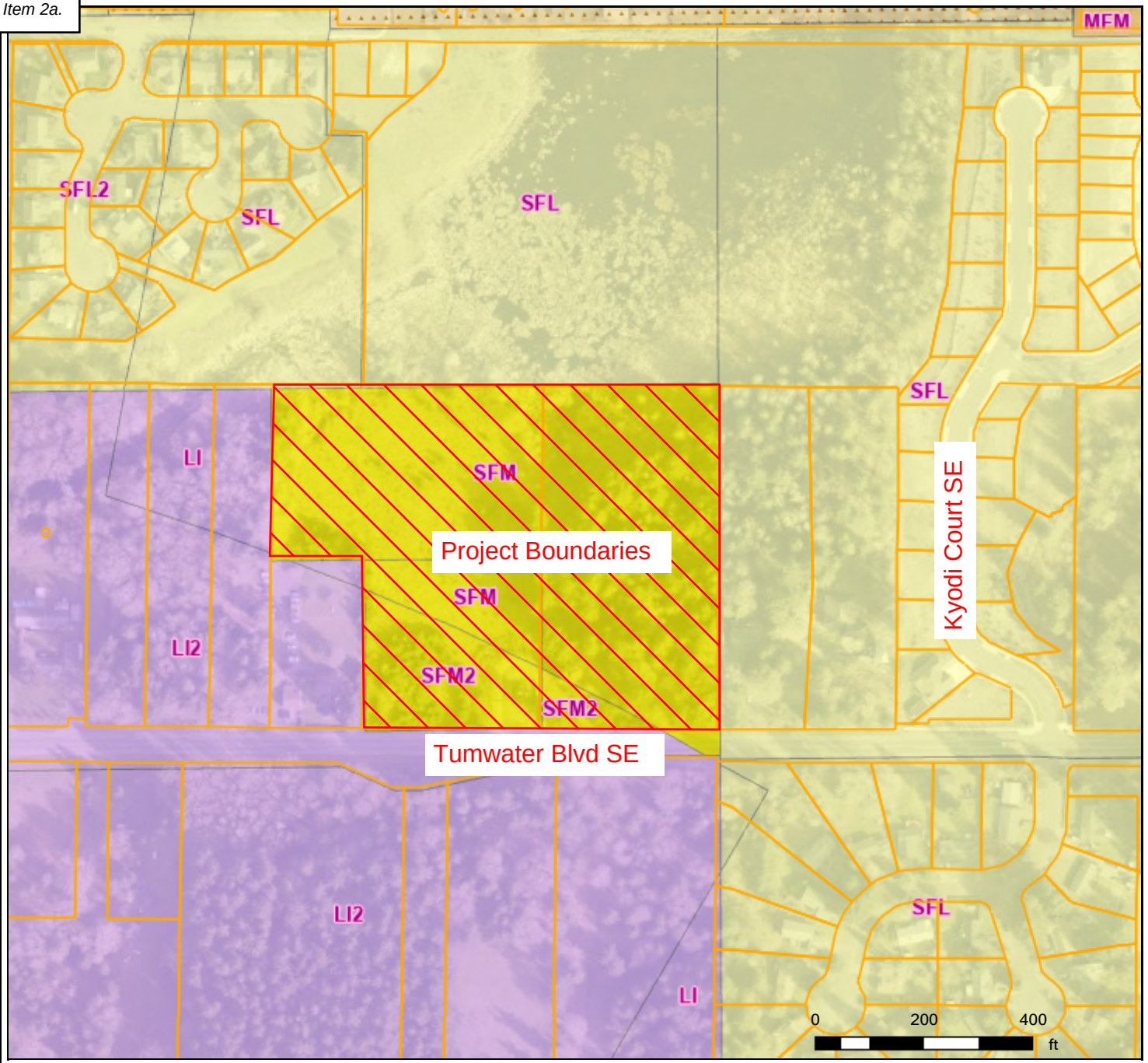

Tumwater Blvd Condos Zoning Map

Legend

Parcels

Parcel Boundaries

Planning and Landuse

Zoning

- AC - Arterial Commercial
- AG - Agriculture
- AQUATC - Aquatic
- ARI & ARI2 - Airport Related Industry
- ARI & ARI2 - Airport Related Industry
- AS - Auto Services
- BD - Brewery
- C - Cemetery
- C-1 - Commercial

Author:

Published: 16/9/2025

Notes

THURSTON COUNTY
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Community Development
555 Israel Road SW
Tumwater, WA 98501-6515
Phone: 360-754-4180

CERTIFICATION OF PUBLIC NOTICE

I, Alex Baruch, Senior Planner for the City of Tumwater hereby certify that public notice for the Project # TUM-25-0169; Tumwater Blvd Condominiums: was given as follows:

APPLICATION

Notice of Application Published in Olympian:	June 27, 2025
Notice of Application Uploaded to Website:	June 27, 2025
Notice of Application Mailed:	June 27, 2025
Notice of Application Posted:	June 27, 2025
Posting Locations:	Edge of property facing Tumwater Blvd
Environmental Determination Published:	July 25, 2025
Environmental Determination Uploaded to Website:	July 25, 2025
Environmental Determination Mailed:	July 25, 2025
Environmental Determination Posted:	July 25, 2025
Posting Locations:	Edge of property facing Tumwater Blvd.

HEARING

Notice of Public Hearing Published:	September 12, 2025
Notice of Public Hearing Uploaded to Website:	September 12, 2025
Notice of Public Hearing Mailed:	September 12, 2025
Notice of Public Hearing Posted:	September 12, 2025
Posting Locations:	Edge of property facing Tumwater Blvd.

The above is an accurate accounting of the public notice provided for the project.

Alex Baruch, Senior Planner	September 12, 2025
NAME, TITLE	Date

Community Development
555 Israel Road SW
Tumwater, WA 98501-6515
Phone: 360-754-4180

NOTICE OF APPLICATION AND OPTIONAL MITIGATED DETERMINATION OF NON-SIGNIFICANCE (MDNS)

TUMWATER BLVD. CONDOMINIUMS
TUM-25-0169, TUM-25-0679, TUM-25-0680,
TUM-25-0682 and TUM-25-0683
June 27, 2025

Description of Proposal: Develop and construction of 24 single family condominium units on 10.65 acres.

Applicant: Tenino Land Company, LLC. 17348 Marsh Road SW, Tenino, WA 98589.

Representative: Whitney Dunlap, JSA Civil, LLC, 111 Tumwater Blvd SE, Suite B203; Tumwater, WA 98512.

Location of Proposal: 715 Dennis Street SE and 934 Tumwater Blvd SE. Parcel Numbers: 79300001100 and 79300001200.

Required Permits/Approvals: The following may be required: Environmental Review (SEPA Determination), Preliminary and Final Binding Site Plan, Preliminary and Final Planned Unit Development, Site Development Grading, Building Permits, Sign Permit and WA Department of Ecology Construction Stormwater General Permit.

Date of Complete Application: June 23, 2025.

Determination of Consistency: At this time, no determination of consistency with City plans or standards has been made. At a minimum, this project will be subject to the following regulations: Tumwater Comprehensive Plan, Zoning Code, Subdivision Code Critical Area Ordinance, Tree Protection Ordinance, Development Guide (street, utility and storm water standards) and International Building and Fire Codes.

SEPA Review: The Tumwater Community Development Department expects to issue a Mitigated Determination of Non-Significance (MDNS) for the proposal. This project is being reviewed under the optional MDNS process in accordance with WAC 197-11-355.

This decision was made after review of a completed environmental checklist and other information on file with the City of Tumwater. This information is available to the public upon request. A copy of the subsequent threshold determination for the proposal may also be obtained upon request. This may be the only opportunity to comment on the environmental impacts of the proposal. The proposal may include mitigation measures under applicable codes, and the project review process may incorporate or require mitigation measures regardless of whether an EIS is prepared.

Public Hearing: A public hearing is required for this project as a planned unit

development requires approval by the hearing examiner. Public notices will be sent out prior to the hearing date.

Public Comment Period: The duration of the comment period for this notice is 15 days. Written comments may be submitted to City of Tumwater, Community Development Department, Attn: Alex Baruch, 555 Israel Road SW, Tumwater, WA 98501, or email to abaruch@ci.tumwater.wa.us, and must be received by 5:00 p.m. on July 14, 2025.

If you have any questions or would like additional information, please contact Alex Baruch, Senior Planner, at 360-754-4180.

Alex Baruch

From: Shaun Dinubilo <sdinubilo@squaxin.us>
Sent: Tuesday, July 8, 2025 9:41 AM
To: Alex Baruch
Subject: RE: Notice of Application with Optional MDNS - Tumwater Blvd. Condominiums - TUM-25-0683

Hello Alex,

Thank you for contacting the Squaxin Island Tribe Cultural Resources Department regarding the above listed project for our review and comment. The project area has a high potential for the location of cultural resources, is with 0.20 miles away from a known cultural resource site, and is very close to a delineated wetland. We recommend a cultural resources survey and report be completed for this project. We would prefer to receive an electronic copy by email once completed.

Shaun Dinubilo
Archaeologist
FAA Certified (Section 107) sUAS Remote Pilot
Cultural Resource Department
Squaxin Island Tribe
200 S.E. Billy Frank Jr. Way
Shelton, WA 98584
Phone: 360-432-3998
Email: sdinubilo@squaxin.us
Office Hours: 7:30 am to 4:00 pm

Email is my preferred method of communication.

As per 43 CFR 7.18[a][1]) of the Archaeological Resource Protection Act, Section 304 of the National Historic Preservation Act, and RCW 42.56.300 of the Washington State Public Records Act- Archaeological Sites, all information concerning the location, character, and ownership of any cultural resource is exempt from public disclosure.

From: Jessica Lee <JLee@ci.tumwater.wa.us>
Sent: Wednesday, June 25, 2025 8:03 AM
Subject: Notice of Application with Optional MDNS - Tumwater Blvd. Condominiums - TUM-25-0683

The SEPA Determination for, Tumwater Blvd. Condominiums - TUM-25-0683 is ready to view HERE. If you have any questions or would like additional information, please contact Alex Baruch at 360-754-4180 or abaruch@ci.tumwater.wa.us.

Jessica Lee | Administrative Assistant
City of Tumwater Community Development
555 Israel Rd SW | Tumwater, WA 98501

(360) 754-4180
jlee@ci.tumwater.wa.us | www.ci.tumwater.wa.us

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

July 9, 2025

Alex Baruch
Senior Planner
City of Tumwater

In future correspondence please refer to:
Project Tracking Code: 2025-07-04322
Property: Tumwater Blvd Condominiums (TUM-25-0683)
Re: SEPA – Survey Requested

Dear Alex Baruch:

Thank you for contacting the Washington State Historic Preservation Officer and Department of Archaeology and Historic Preservation (DAHP), and for providing documentation regarding the above-referenced project. As a result of our review, our professional opinion is that the project area has the potential to contain archaeological resources. The project is in an area determined to be at "Very High" risk of containing archaeology according to the DAHP Archaeological Risk Assessment Model, and is in proximity to archaeological site 45TN0118 along with other high-probability landscape features. The scale of the proposed ground disturbing actions would destroy any archaeological resources present. Therefore, we recommend a professional archaeological survey of the project area be conducted prior to ground disturbing activities. We also recommend continued consultation with the concerned Tribes' cultural committees and staff regarding cultural resource issues.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in conformance with Washington State law. Should additional information become available, our assessment may be revised.

Thank you for the opportunity to comment on this project and we look forward to receiving the survey report. The survey report should be uploaded directly into the DAHP Online WISAARD system by the cultural resource consultant to expedite DAHP review. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. Should you have any questions, please feel free to contact me.

Sincerely,

Jessica Stone, Ph.D.
Assistant State Archaeologist
(360) 890-2633
jessica.stone@dahp.wa.gov

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Southwest Region Office
PO Box 47775, Olympia, WA 98504-7775 • 360-407-6300

July 11, 2025

Alex Baruch, Senior Planner
City of Tumwater
Development Services Department
555 Israel Road Southwest
Tumwater, WA 98501

Dear Alex Baruch:

Thank you for the opportunity to comment on the optional determination of non-significance/notice of application for the TUMWATER BLVD. CONDOMINIUMS Project (TUM-25-0169, TUM-25-0679, TUM-25-0680, TUM-25-0682, TUM-25-0683) as proposed by Tenino Land Company, LLC. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

SOLID WASTE MANAGEMENT: Derek Rockett (360) 995-3176

All grading and filling of land must utilize only clean fill. All other materials may be considered solid waste and permit approval may be required from your local jurisdictional health department prior to filling. All removed debris resulting from this project must be disposed of at an approved site. Contact the local jurisdictional health department or Department of Ecology for proper management of these materials.

TOXICS CLEANUP: Thomas Middleton (360) 999-9594

If contamination is suspected, discovered, or occurs during the proposed SEPA action, testing of the potentially contaminated media must be conducted. If contamination of soil or groundwater is readily apparent, or is revealed by testing, Ecology must be notified. Contact the Environmental Report Tracking System Coordinator for the Southwest Regional Office (SWRO) at (360) 407-6300. For assistance and information about subsequent cleanup and to identify the type of testing that will be required, contact Thomas Middleton with the SWRO, Toxics Cleanup Program at the phone number provided above.

WATER QUALITY/General Permit Unit:
Jacob Neuharth (360) 706-4599

Erosion control measures must be in place prior to any clearing, grading, or construction. These control measures must be effective to prevent stormwater runoff from carrying soil and other pollutants into surface water or storm drains that lead to waters of the state. Discharges must not cause or contribute to a violation of surface water quality standards,

groundwater quality standards, sediment management standards, and human health-based criteria. Sand, silt, clay particles, and soil will damage aquatic habitat and are considered to be pollutants.

If there are known soil/ground water contaminants present on site, additional information will be required to be submitted. For contaminated construction sites, contact Evan Wood at evan.wood@ecy.wa.gov, or by phone at (360) 706-4599.

Construction Stormwater General Permit:

The following construction activities require coverage under the Construction Stormwater General Permit:
1. Clearing, grading and/or excavation that results in the disturbance of one or more acres and discharges stormwater to surface waters of the State; and
2. Clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more and discharge stormwater to surface waters of the State.
a) This includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, and discharge to surface waters of the State; and
3. Any size construction activity discharging stormwater to waters of the State that
a) Determines to be a significant contributor of pollutants to waters of the State of Washington.
b) Reasonably expects to cause a violation of any water quality standard.

Applicants may apply online or obtain an application from Ecology's website at: https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit. Some projects may be eligible for coverage under an Erosivity Waiver. Construction site operators must apply for a permit at least 60 days prior to discharging stormwater from construction activities and must submit it on or before the date of the first public notice.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(JKT:202502643)

cc: Derek Rockett, SWM
Thomas Middleton, TCP
Jacob Neuharth, WQ

Community Development
555 Israel Road SW
Tumwater, WA 98501-6515
Phone: 360-754-4180

MITIGATED DETERMINATION OF NON-SIGNIFICANCE
Tumwater Blvd Condominiums
Permit Nos. TUM-25-0169, TUM-25-0679, TUM-25-0680, TUM-25-0682 and TUM-25-0683
July 25, 2025

Description of Proposal: Development and construction of 24 single family condominium units on 10.65 acres.

Applicant: Tenino Land Company, LLC. 17348 Marsh Road SW, Tenino, WA 98589.

Representative: Whitney Dunlap, JSA Civil, LLC, 111 Tumwater Blvd SE, Suite B203; Tumwater, WA 98512.

Location of Proposal: 715 Dennis Street SE and 934 Tumwater Blvd SE. Parcel Numbers: 79300001100 and 79300001200.

Lead agency: City of Tumwater, Community Development Department.

The lead agency for this proposal has determined that, as conditioned, 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 of a completed environmental checklist and other information on file with the lead-agency. This information is available to the public on request.

This MDNS assumes that the applicant will comply with all City ordinances and development standards governing the type of development proposed, including but not limited to, street standards, storm water standards, high groundwater hazard areas ordinance standards, water and sewer utility standards, critical areas ordinance standards, tree protection standards, zoning ordinance standards, land division ordinance standards, building and fire code standards, and level of service standards relating to traffic. These ordinances and standards provide mitigation for adverse environmental impacts of the proposed development.

Condition of Approval for mitigating environmental impacts:
Findings:

1. The Tumwater Boulevard/I-5 northbound ramps intersection currently operates at LOS F during both peak periods for the northbound left-turn movement. The project is projected to add one (1) trip to this intersection. The City has recently developed a SEPA improvement project for the Tumwater Boulevard/I-5 interchange that includes intersection improvements at the northbound I-5 ramps intersection, with a peak hour per trip impact fee of $4,333 for each trip entering the interchange area.

Mitigation Measures:

1. Prior to issuance of the Building Permit:
   a. Construct a roundabout at the northbound Interstate 5 On/Off Ramp and Tumwater Boulevard intersection; or
   b. Voluntarily pay a mitigation fee of $4,333 per peak trip generated by this project (1) under RCW 82.02.020 to be used as described herein:
      Tumwater Boulevard/I-5 Interchange: The City's planned transportation improvements at the Tumwater Boulevard/I-5 interchange include converting the interchange to a roundabout diamond interchange by replacing the southbound on/off ramp signal and northbound stop-controlled intersections with roundabouts.

This MDNS is issued under WAC 197-11-355. The comment period for the SEPA determination was consolidated with the Notice of Application issued on June 27, 2025.

Date: July 25, 2025

Responsible Official:

Brad Medrud, AICP
Community Development Director

Contact person: Alex Baruch, Senior Planner
555 Israel Road SW
Tumwater, WA 98501
abaruch@ci.tumwater.wa.us

Appeals of this MDNS must be made to the City of Tumwater Community Development Department, no later than July 31, 2025, by 5:00 p.m. All appeals shall be in writing, be signed by the appellant, be accompanied by a filing fee of $2,000.00 and set forth the specific basis for such appeal, error alleged, and relief requested.

CITY OF TUMWATER
555 ISRAEL RD. SW, TUMWATER, WA 98501
Email: cdd@ci.tumwater.wa.us
(360) 754-4180

TUM-25-0682

06-04-2025
DATE STAMP

RECEIVED BY: Kerri

Any person proposing to develop in the incorporated limits of the City of Tumwater is required to submit an environmental checklist unless the project is exempt as specified in WAC 197-11-800 (Categorical Exemptions) of the State Environmental Policy Act Rules. **SUBMITTAL REQUIREMENTS** are as follows:

1. **A COMPLETE ENVIRONMENTAL CHECKLIST.** If the project is located within the Port of Olympia property, the checklist must also be signed by a representative of the Port.
2. **FEE OF $880.00 TO BE PAID UPON SUBMITTAL.** This includes the Public Notice fee.
3. **NAME AND ADDRESS LIST OF PROPERTY OWNERS WITHIN 300 FEET OF THE SUBJECT PROPERTY.**

SEPA ENVIRONMENTAL CHECKLIST

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.

A. Background Find help answering background questions

1. Name of proposed project, if applicable:

Tumwater Boulevard Townhome Condominiums

2. Name of applicant:

Tenino Land Company, LLC

3. Address and phone number of applicant and contact person:

JSA Civil, LLC | Whitney Dunlap
111 Tumwater Blvd SE, Suite B203
Tumwater, WA 98512
360.515.9600

4. Date checklist prepared:

April 16, 2025

5. Agency requesting checklist:

City of Tumwater

6. Proposed timing or schedule (including phasing, if applicable):

Begin construction in Summer of 2025, substantial completion in Spring of 2026.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No, there are no plans for future additions, expansion, or further activity related to this proposal.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The following environmental information has been prepared for the project:

- Project Survey by MTN2COAST, LLC – dated July 12, 2017
- Geotechnical Report by Insight Geologic, INC. – dated March 29, 2018
- Regulated Prairie Absence Report by Land Services Northwest – dated May 13, 2024
- Mazama Pocket Gopher and Regulated Prairie Absence Report by Land Services Northwest – dated July 8, 2024
- Wetland Delineation Report and Assessment by Land Services Northwest – dated May 28, 2025
- Traffic Scoping Analysis by SCJ Alliance – dated November 21, 2024
- Preliminary Civil Engineering Plans by JSA Civil, LLC – dated May 19, 2025

- Preliminary Stormwater Report by JSA Civil, LLC – dated May 16, 2025
- Landscape & Irrigation Plans by SCJ Alliance – dated May 19, 2025

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.

There are no known pending applications for governmental approvals directly affecting the project site.

10. List any government approvals or permits that will be needed for your proposal, if known.

The following government approvals and permits will be required:

- City of Tumwater Preliminary and Final Planned Unit Development (PUD) approvals
- City of Tumwater Preliminary and Final Binding Site Plan approvals
- City of Tumwater SEPA Determination
- City of Tumwater Building Permit
- City of Tumwater Site Development/Grading Permit
- City of Tumwater Sign Permit
- WA Department of Ecology Construction Stormwater General Permit

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.)

Proposal includes clearing of approximately 2.8 acres and construction of a new roadway with adjacent sidewalk and six (6) quadplex, single-family townhome style condominiums (24 units). The project will include on-site stormwater facilities, perimeter landscaping, frontage improvements along Tumwater Blvd, and new underground utilities to serve the development.

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.

The site is located at 715 Dennis St SE and 934 Tumwater Blvd SE in Tumwater, WA 98512 on Thurston County TPNs 79300001100, and 79300001200.

Section 02, Township 17, Range 2W - Please refer to the project survey for additional information.

B. Environmental Elements

1. Earth Find help answering earth questions

a. General description of the site:

Circle or highlight one: **Flat**, rolling, hilly, steep slopes, mountainous, other:

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on the site is approximately 30%.

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.

Per the USDA Natural Resources Conservation Service Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx), the site contains Indianola loamy sand and Norma Silt Loam. Indianola loamy sand is classified as prime farmland if irrigated, is a Hydrologic Soil Group A soil, and is not rated as hydric soil. Norma silt loam is classified as prime farmland if drained, is a Hydrologic Soil Group B/D soil, and is rated as hydric soil.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There are no known surface indications or history of unstable soils 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.

Approximately 1,000 CY of material cut, and 10,000 CY of material fill will be used to grade the site for project construction. Fill will be sourced from a local approved borrow pit.

f. Could erosion occur because of clearing, construction, or use? If so, generally describe.

Erosion is always possible during construction. Best Management Practices (BMPs) will be maintained to limit erosion impacts.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 13% of the site will be covered with impervious surfaces after project construction.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

BMPs such as a stabilized construction entrance, silt fencing, and covering exposed soils will be used during construction. BMPs will be updated as necessary to limit erosion.

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.

Emissions from heavy equipment and dust may be present during construction but are expected to be minor. Emissions from vehicles entering and exiting the completed project will be present at completion.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

There are no known off-site sources of emissions or odor that may affect the proposed project.

c. Proposed measures to reduce or control emissions or other impacts to air, if any.

Construction equipment will not be allowed to idle for extended periods of time.

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.**

150' buffer was applied, can be reduced to 110' as allowed by Tumwater Municipal Code. Critical area enhancement for the PUD will require some land disturbance within the wetland and wetland buffer to remove invasive plants and plant native plants in their place.

There is a Category III wetland on the north end of the site. A wetland report is included with the submittal. A 110' buffer has been applied and no work will occur within the buffer.

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.**

150' buffer was applied, can be reduced to 110' as allowed by Tumwater Municipal Code.

A buffer of 110' has been applied per the wetland report by Land Services Northwest. All proposed construction will occur outside of the wetland buffers; removal of invasive species and buffer enhancements are proposed by the project. Please refer to the enclosed Wetland Delineation Report and Assessment for additional information.

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 will be placed in or removed from surface water or wetlands by the project.

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

The project may require temporary construction dewatering for the installation of underground utilities and stormwater facilities. No permanent surface water withdrawal systems or permanent surface water diversions are proposed.

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

No, per FEMA FIRM panels 53067C0282G, the site is located in "Zone X," an area of minimal flood hazard.

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.

No, the project does not involve any discharges of waste materials to surface waters. The project will be connected to City of Tumwater sanitary sewer.

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 project will be connected to City of Tumwater water service. No existing on-site wells are known, however if found they will be decommissioned in accordance with local and State requirements.

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 from septic tanks or other sources. The project will be connected to City of Tumwater sanitary sewer. No on-site septic systems are known, however if found they will be removed/abandoned in accordance with local and State requirements.

c. Water Runoff (including stormwater):

a) 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.

Stormwater runoff will be collected and dispersed to the existing natural flow path which enters the existing on-site wetland.

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

It is unlikely that waste materials will enter ground or surface waters. The project is not anticipated to generate waste other than sanitary refuse which will be stored in covered containers prior to removal by a refuse service.

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

Historic drainage patterns in the vicinity of the site will not be altered. On-site runoff will be collected and dispersed on-site.

d) Proposed measures to reduce or control surface, ground, and runoff water, and

drainage pattern impacts, if any.

Stormwater will be collected and dispersed on-site. No downstream impacts are anticipated.

4. Plants Find help answering plants questions

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

☒ **deciduous tree: alder, maple, aspen, other**
☒ **evergreen tree: fir, cedar, pine, other**
☒ **shrubs**
☒ **grass**
☐ **pasture**
☐ **crop or grain**
☐ **orchards, vineyards, or other permanent crops.**
☒ **wet soil plants: cattail, buttercup, bullrush, 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?

Approximately 2.8 acres of grass, trees, and brush will be removed for project development; approximately 0.53 acres of invasive Scotch broom and Himalayan blackberry will be removed; and, approximately 2.1 acres of dense native vegetation will be planted in the wetland buffer between the development and the on-site wetland areas to enhance native species.

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

Based on a query of the U.S. Fish & Wildlife's IPaC map system (https://ipac.ecosphere.fws.gov), there are no threatened or endangered plant species known to be on or near the site. IPaC also indicates no critical habitats are present at this location.

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

Perimeter landscaping will be installed to meet or exceed City of Tumwater minimum code requirements and approximately 1.9 acres of dense native prairie and wetland vegetation will be planted along and within the wetland buffer between the development and the on-site wetland areas to enhance native vegetation and improve the quality of the critical areas.

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

The site is known to contain Scotch broom and Himalayan Blackberry. Per Thurston County GeoData, there are no additional noxious weeds or invasive species known to be on or near the site.

5. Animals Find help answering animal questions

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

Examples include:

- **Birds: hawk, heron, eagle, songbirds, other:** typical crows and raptors found in rural

environments

- **Mammals: deer, bear, elk, beaver, other:** opossum, raccoons, squirrels, moles, voles, mice
- **Fish: bass, salmon, trout, herring, shellfish, other:**

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

Per IPaC mapping, threatened species potentially affected in this site location include; the Olympia Pocket Gopher, Marbled Murrelet, Streaked Horned Lark, Yellow-billed Cuckoo, Oregon Spotted Frog, and Bull Trout. The Northwestern Pond Turtle is a proposed threatened species, and the Monarch Butterfly is a candidate for listing. There are no known instances of the aforementioned species at the site, however, we are noting the potential.

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

Yes, the site is located within the Pacific Flyway.

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

Three wood duck boxes, three bat boxes, and two Martin houses will be installed in the trees at the edge of Wetland A to enhance wildlife habitat on the site. The project proposes to preserve and enhance wetland areas that maintain existing wildlife habitat.

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

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

6. Energy and Natural Resources Find help answering energy and natural resource questions

1. **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 be used to meet the completed project's needs for heating, cooling, and lighting.

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

The project is not anticipated to affect the potential use of solar energy by adjacent properties.

3. **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.**

The project will be designed to comply with current energy code regulations. Energy conservation features may include LED lighting, building insulation, and energy efficient windows.

7. Environmental Health Find help with answering environmental health questions

a. 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 environmental health hazards that could occur because of this proposal.

1. **Describe any known or possible contamination at the site from present or past uses.**

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

2. **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. Per the National Pipeline Mapping System (https://pvnpms.phmsa.dot.gov/PublicViewer/), there are no hazardous liquid or gas transmission pipelines in the vicinity of the site.

3. **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.**

Gasoline, diesel fuel, and oil may be stored and/or used during construction. No hazardous chemicals will be produced by the project during construction or after completion of the single-family townhome development.

4. **Describe special emergency services that might be required.**

No special emergency services are anticipated.

5. **Proposed measures to reduce or control environmental health hazards, if any.**

b. Noise

Gasoline, diesel fuel, and/or oils for construction equipment will be kept in sealed and approved containers.

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

Noise is present form traffic on nearby roadways, however these sources of noise are not anticipated to affect the project.

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)?**

During construction and development, noise may be present from heavy equipment and contractor's tools. Construction work will be performed during typical daytime work hours. At completion, noise will be created from vehicles entering and exiting the completed single-family townhome development.

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

During construction, work will be limited to typical daytime work hours and equipment will not be allowed to idle for extended periods of time.

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 site currently vacant. Surrounding uses include a residential housing to the north and east and west with vacant land to the south. A small business for pest management is also located on the residential parcel to the west.

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 nonforest use?

The site has not been used as working farmlands or forest lands. None of the underlying tax parcels are considered agricultural or forest land of long-term commercial significance and are not held under resource classification. No resource lands will be converted to nonfarm or nonforest use by the proposed project.

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?

No, the project will not affect or be affected by surrounding working farm or forest land normal business operations.

c. Describe any structures on the site.

The site is currently vacant, aside from a portion of the site which houses an existing sewer lift station operated by City of Tumwater.

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

No, there are no existing structures on-site that will be demolished/removed.

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

The site is zoned Single Family Medium Density (SFM & SFM2) with airport overlay by the City of Tumwater.

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

The City of Tumwater's Comprehensive Plan identifies the future land use designation of the site as Single

Family Medium Density.

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

Not applicable, the site is not located near a waterbody and is not assigned a shoreline master program designation.

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

Per Thurston County GeoData, the site is mapped within 5- & 10-year wellhead protection areas, Class 1 Critical Aquifer Recharge Areas (CARAs), Class I & III Agricultural CARAs, contains wetlands, contains an area of hydric soils across the site, and contains areas of more- & les-preferred Mazama Pocket Gopher Soils.

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

The completed project will create 24 single-family condominium residences. Based on an occupancy rate of ± 3 people per residence, approximately 72 people may reside in the completed project.

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

No people will be displaced by the completed project.

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

No displacement impacts are anticipated; no measures are proposed.

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

The project will be reviewed by City of Tumwater staff for compatibility with existing and projected land uses and plans.

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

No impacts to agricultural or forest lands of long-term commercial significance are anticipated; no measures are proposed.

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.

At full build-out the project will provide 24 single-family townhome style condominium residences at market-rate. The proposed configuration is six buildings with four attached townhome-style condominiums in each building.

b. Approximately how many units, if any, would be eliminated? Indicate whether high,

middle, or low-income housing.

No housing units will be eliminated by the project.

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

The completed project will increase the availability of single-family housing in the area; no additional measures are proposed.

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?

The buildings heights will not exceed approximately 30 feet. Exterior building materials may consist of rock/stone veneer, wood, and/or stained/painted exterior residential siding.

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

No views in the immediate vicinity will be altered or obstructed.

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

The project will be designed to comply with City of Tumwater guidelines for development and construction and will be reviewed by City staff to ensure compatibility prior to permit approval.

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?

Light will be produced during evening hours from streetlights within the completed project.

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

Light or glare from the finished project are not anticipated to create safety hazards or cause interference with views.

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

There are no known off-site sources of light or glare that will affect the proposed project.

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

Exterior lighting will be positioned and/or shielded to comply with City requirements and to prevent light pollution onto adjacent properties, rights-of-way, and wetlands/critical areas.

12. Recreation Find help answering recreation questions

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

Two formal recreational opportunities, Pioneer Park and Olympic Flight Museum, are approximately 1 mile from the site.

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

No, 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.

The project will be part of a Planned Unit Development (PUD) process which will provide recreation opportunities by providing open space amenities and enhanced critical areas to meet required PUD credits.

13. Historic and Cultural Preservation Find help answering historic and 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.

Per the Department of Archaeology and Historic Preservation's WISAARD map, there are no structures on the site listed in or eligible for listing in national, state, or local preservation registers. Off-site at 823 Tumwater Blvd SE, there is currently a site (McDonald House) 20163 with no determination currently.

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 or occupation of the site. The site is mapped by the WISAARD system as an area of Moderate to Very High Risk to contain Environmental Factors with Archaeological Resources. The project is mapped within an area of Tribal interest for the Nisqually, Squaxin, Cowlitz, and Confederated Tribes of the Chehalis Reservation.

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.

A query of the Department of Archaeology & Historic Preservation's WISAARD map system (https://wisaard.dahp.wa.gov/Map) was performed on December 06, 2024.

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.

If cultural or historic resources are discovered during clearing, grading, or construction, activities in the vicinity of the discovery will stop until a qualified archaeologist evaluates the situation and outlines a course of action.

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.

The site is served by Tumwater Blvd SE. The project proposes one (1) tee (stop) intersection from Tumwater Blvd SE.

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?

The affected geographic area is served by Intercity Transit. The nearest transit stop is approximately 0.5 miles away at Israel Road & Capitol Blvd S (Israel at Nikolas).

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).

The project proposes half street frontage improvements along Tumwater Blvd SE for the full width of the project parcels.

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 is located within the Olympia Regional Airport zoning overlay, however the project will not use water, rail, or air transportation.

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 nonpassenger vehicles). What data or transportation models were used to make these estimates?

The project is anticipated to generate 132 daily trips with peak volumes occurring during the AM and PM peak hours. These estimates are based on the Institute of Transportation Engineers (ITE) Trip Generation manual. Please refer to the enclosed traffic study report for additional information.

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 proposal will not interfere with, affect, or be affected by the movement of agricultural and forest products on roads or streets in the area.

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

No measures are necessary based on the enclosed traffic study report; no measures are proposed.

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.

The project may result in a nominal increased need for fire and police protection services.

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

Impacts to public services are expected to be minor. Measures to reduce direct impacts include fire hydrants.

16. Utilities Find help answering utilities questions

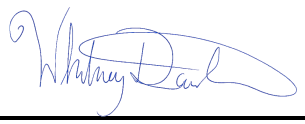
a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:

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: City of Tumwater
Sanitary Sewer: City of Tumwater
Power: Puget Sound Energy
Communications: Comcast and/or Century Link
Refuse: LeMay Pacific Disposal

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 

Type name of signee: Whitney Dunlap

Position and agency/organization: Project Manager | JSA Civil, LLC

Date submitted: 6/2/2025

Reviewed by: Alex Baruch, Senior Planner, AICP

D. Supplemental sheet for nonproject 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.**

City of Tumwater

Notice of Public Hearing

Hearing Examiner –

TUM-25-0169; Tumwater Blvd Townhomes

Notice is hereby given that the Tumwater Hearing Examiner will hold a public hearing at or about 5:00 p.m., on Wednesday, September 24, 2025, for the purpose of considering a development proposal to construct 24 townhome style condominium units on 10.65 acres at 715 Dennis St SE and 934 Tumwater Blvd SE (Parcel Numbers: 79300001100 and 79300001200). The development will include infrastructure, frontage improvements and open space. The meeting and public hearing will be held remotely online via Zoom and in person at Tumwater City Hall, 555 Israel Rd. SW, Tumwater, WA 98501.

The public is invited to attend this public hearing remotely or in person to provide comments on the application.

Public Comment – In Person:
Tumwater City Hall
555 Israel Road SW
Tumwater, WA 98501

Public Comment via Zoom - Register in advance for this webinar:

https://us02web.zoom.us/webinar/register/WN_udXHakzhS2yJxu4KeUnH3Q

Public Comment – via email:
Prior to the meeting, send an email to: abaruch@ci.tumwater.wa.us no later than 12:00 p.m. on Wednesday, September 24, 2025.

For more information, contact Community Development, (360) 754-4180 or email abaruch@ci.tumwater.wa.us.

City of Tumwater
Alex Baruch, Senior Planner

Published: September 11, 2025
Posted: September 11, 2025

SCJ ALLIANCE
CONSULTING SERVICES

Technical Memo

To City of Tumwater Public Works

From: Ryan Shea, PTP, Senior Transportation Planner

Date: June 10, 2025

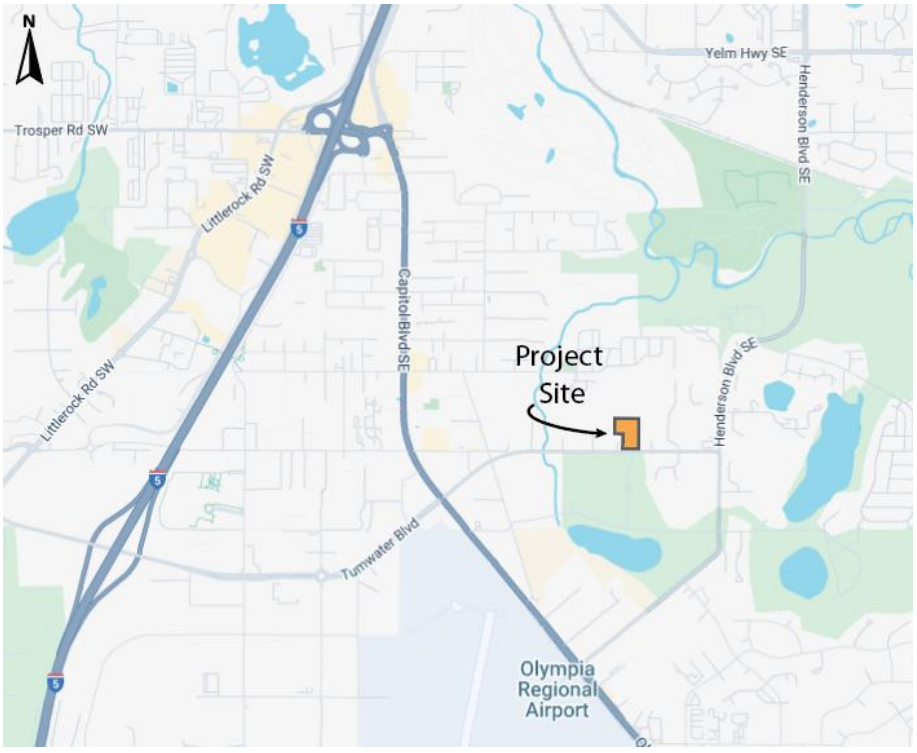
Project: Tumwater Townhomes

Subject: Traffic Scoping Analysis

Introduction:

The Tumwater Townhomes project is being proposed for construction located at 715 Dennis St in Tumwater, Washington. This Traffic Scoping Analysis estimates the trip generation, distribution, and assignment for the proposed development. **Figure 1** illustrates the site vicinity and the transportation network serving the project area.

Figure 1. Site Vicinity



SCJ ALLIANCE
CONSULTING SERVICES

Proposed Development

The proposed Tumwater Townhomes project will construct 24 townhomes on an undeveloped lot located at 715 Dennis St in Tumwater, WA. The total project site area is approximately 6 acres. Site access is expected to be provided by one full access driveway on Tumwater Boulevard.

The project is anticipated to open in 2025. The preliminary site plan is attached.

Project Traffic Characteristics

The two project-related characteristics having the most effect on area traffic conditions are peak hour trip generation and the directional distribution of traffic volumes on the surrounding roadway network.

Site-Generated Traffic Volumes

Vehicle trip generation was calculated using the trip generation rates contained in the 11th edition of the Trip Generation Manual by the *Institute of Transportation Engineers (ITE)*. The Single-Family Attached Housing (land use code 215) land use category best matches the proposed development and has been used to calculate the trip generation. For this analysis, the "fitted-curve" equation was used to estimate trips in preference to using the average trip rate as this approach was recommended by ITE.

The trip generation rates used for the Single-Family Attached Housing land use category are shown in **Table 1.**

Table 1. ITE Trip Generation Rates - Single-Family Attached Housing

Peak Period	Unit	Trip Rate	Enter %	Exit %
AM peak hour of Adjacent Street	Dwelling Units	0.28	31%	69%
PM peak hour of Adjacent Street	Dwelling Units	0.44	57%	43%
Daily	Dwelling Units	5.52	50%	50%

1. Fitted Curve Equation was used

The total trip generation expected from this project is calculated by applying the unit measure for the land use category to the appropriate trip generation rate. The trip generation for the proposed Tumwater Townhomes project is shown in **Table 2** below.

Table 2. Project Trip Generation

		New-to-Network Trips		
Peak Period	Size	Enter	Exit	Total
AM peak hour of Adjacent Street	24.0	2	5	7
PM peak hour of Adjacent Street	24.0	6	4	10
Daily	24.0	66	66	132

SCJ ALLIANCE
CONSULTING SERVICES

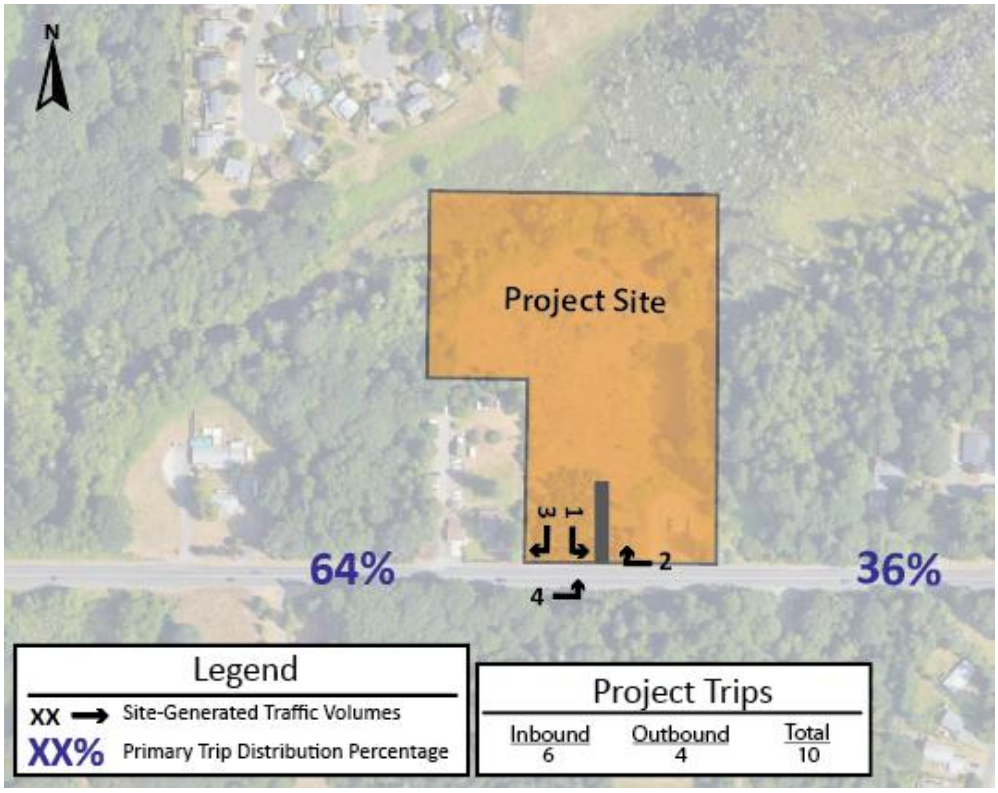
Site Traffic Distribution and Assignment

We have prepared a trip distribution and assignment for the proposed development. The directional distribution of traffic to and from the proposed project was estimated using the regional transportation model. The Thurston Regional Planning Council (TRPC) created the area-wide transportation model with cooperation from local jurisdictions within the county. The model, developed using the Emme/4 software package, has been calibrated to represent the existing vehicle travel patterns throughout the entire county.

The Tumwater Townhomes project is located within TAZ 231 of the regional transportation model. A distribution analysis was performed for this project by conducting a "Select Zone Analysis" for this TAZ. This feature of the Emme/4 software package allows all of the traffic into and out of a particular zone to be isolated and shown separately from the rest of the traffic on the network. This graphically shows the percentage of vehicles currently using each of the available routes into and out of the area (Tumwater Boulevard, Henderson Blvd, Capitol Blvd, etc.). From this information, regional distribution percentages were calculated for future traffic traveling to and from the Tumwater Townhomes project.

The resultant traffic distribution percentages and traffic assignments are shown in **Figure 2** for the PM peak hour. A copy of the Emme/4 select zone analysis model plot is attached. Given the size of the project, every 10% of distribution equates to a single PM peak hour project trip. Based on the TRPC distribution plot, 9% of the project traffic is expected to travel through the Tumwater Boulevard interchange, resulting in one project trip.

Figure 2. PM Peak Hour Site Generated Traffic Volumes



SCJ ALLIANCE
CONSULTING SERVICES

Thank you for reviewing the enclosed materials. Due to the low volume of PM peak hour trips associated with the proposed Tumwater Townhomes project, it is not anticipated that a Traffic Impact Analysis will be required.

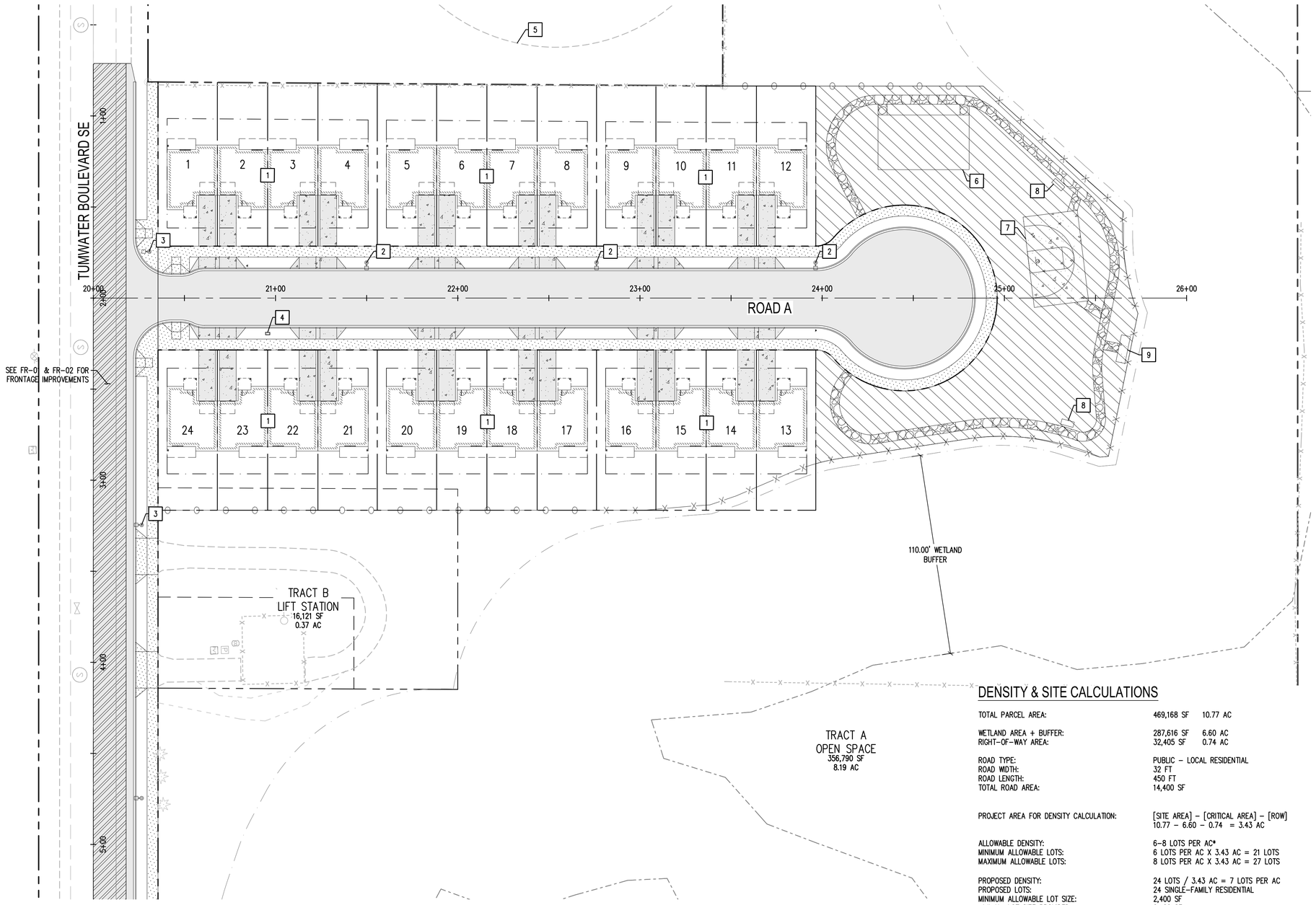
If you have any questions or comments about the enclosed information, please contact me at (360) 352-1465, Ext. 124.

Respectfully,
SCJ Alliance

Ryan Shea, PTP
Senior Transportation Planner

Enclosures: Preliminary Site Plan
TRPC Select Zone Plot

N:\Projects\5275 JSA Civil, LLC\24-000722 Tumwater Townhomes\Transportation Planning\04 - Dels\Reports\2024-1023 Tumwater Townhomes Traffic Scoping.docx



N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- LOT LINE
- SETBACK LINE
- EASEMENT LINE
- EXISTING CHANNELIZATION
- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER
- WETLAND FENCING PLACE WETLAND BUFFER SIGN EVERY 50'
- LOT FENCING
- PROPOSED STREET LIGHT
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- CEMENT CONCRETE SIDEWALK
- CEMENT CONCRETE DRIVEWAYS
- ASPHALT PAVEMENT
- GRIND & OVERLAY
- CEMENT CONCRETE AS NOTED
- ACTIVE OPEN SPACE SEE LANDSCAPE PLANS FOR USE OF AREA

[X] CONSTRUCTION NOTES

1. PROPOSED 4 UNIT, 2-STORY TOWNHOME BUILDING
2. INTERNAL STREET LIGHTING
   LIGHTS SHALL BE AT A MOUNTING HEIGHT OF 25' WITH AN ARM LENGTH OF 6'. MAXIMUM SPACING 120 FEET ON CENTER
3. TUMWATER BLVD STREET LIGHTING
   LIGHTS SHALL BE AT A MOUNTING HEIGHT OF 35' WITH AN ARM LENGTH OF 8'. MAXIMUM SPACING 150 FEET ON CENTER
4. MAILBOX CLUSTER
5. 100' WELLHEAD PROTECTION RADIUS
6. PLAYGROUND, CONCRETE PERIMETER WITH WOOD CHIP BASE
7. HALF COURT BASKETBALL
8. BENCH
9. WETLAND VIEWING PLATFORM

DENSITY & SITE CALCULATIONS

TOTAL PARCEL AREA:	469,168 SF	10.77 AC
WETLAND AREA + BUFFER:	287,616 SF	6.60 AC
RIGHT-OF-WAY AREA:	32,405 SF	0.74 AC
ROAD TYPE:	PUBLIC - LOCAL RESIDENTIAL	
ROAD WIDTH:	32 FT	
ROAD LENGTH:	450 FT	
TOTAL ROAD AREA:	14,400 SF	
PROJECT AREA FOR DENSITY CALCULATION:	[SITE AREA] - [CRITICAL AREA] - [ROW] 10.77 - 6.60 - 0.74 = 3.43 AC	
ALLOWABLE DENSITY:	6-8 LOTS PER AC*	
MINIMUM ALLOWABLE LOTS:	6 LOTS PER AC X 3.43 AC = 21 LOTS	
MAXIMUM ALLOWABLE LOTS:	8 LOTS PER AC X 3.43 AC = 27 LOTS	
PROPOSED DENSITY:	24 LOTS / 3.43 AC = 7 LOTS PER AC	
PROPOSED LOTS:	24 SINGLE-FAMILY RESIDENTIAL	
MINIMUM ALLOWABLE LOT SIZE:	2,400 SF	
MINIMUM LOT SIZE PROVIDED:	2,426 SF	
AVERAGE LOT SIZE PROVIDED:	2,778 SF	
OPEN SPACE REQUIRED (15% DEVELOPABLE AREA)	3.43 AC X 0.15 =	0.51 AC
MIN ACTIVE OPEN SPACE (50% OF REQUIRED)	0.51 AC X 0.50 =	0.255 AC
ACTIVE OPEN SPACE PROVIDED:	22,693 SF	0.52 AC
MIN PASSIVE OPEN SPACE (50% OF REQUIRED):	0.51 AC X 0.50 =	0.255 AC
PROVIDED PASSIVE OPEN SPACE:	334,097 SF	7.67 AC
TOTAL OPEN SPACE PROVIDED:	356,790 SF	8.19 AC

*MAXIMUM DENSITY CAN BE INCREASED TO 9 WITH USE OF DEVELOPMENT CREDITS

PROJECT INFORMATION

APPLICANT	TENINO LAND COMPANY, TODD HANSEN
ENGINEER	JSA CIVIL, WHITNEY DUNLAP
PARCEL NUMBER	79300001100 & 79300001200
PROPOSED USE	SINGLE FAMILY RESIDENTIAL - TOWNHOMES
SIZE OF EACH UNIT	± 1,452 SF
FLOOR AREA RATIO	RANGE FROM 0.50 TO 0.60
BUILDING HEIGHT	± 30'
NUMBER OF PARKING SPACES	1 GARAGE SPACE + 1 DRIVEWAY SPACE PER LOT = 48 PARKING SPACES FOR DEVELOPMENT
IMPERVIOUS SURFACE	1.56 AC (20%)
ZONING	SINGLE FAMILY MEDIUM DENSITY (SFM & SFM2) WITH AIRPORT OVERLAY
WATER	CITY OF TUMWATER
SEWER	CITY OF TUMWATER
SETBACKS	FRONT 10' SIDE 5' (0' FOR CONNECTED UNITS) REAR 20'

REVISIONS

PROJECT NO.
100.006

DRAWN
S. JANIK

CHECKED
W. DUNLAP

SUBMITTAL DATES

OTB DATE
--

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98512

STAMP

WHITNEY E. DUNLAP
STATE OF WASHINGTON
22774
REGISTERED
PROFESSIONAL ENGINEER

PRELIMINARY

TUMWATER BOULEVARD TOWNHOMES
SINGLE-FAMILY RESIDENTIAL
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

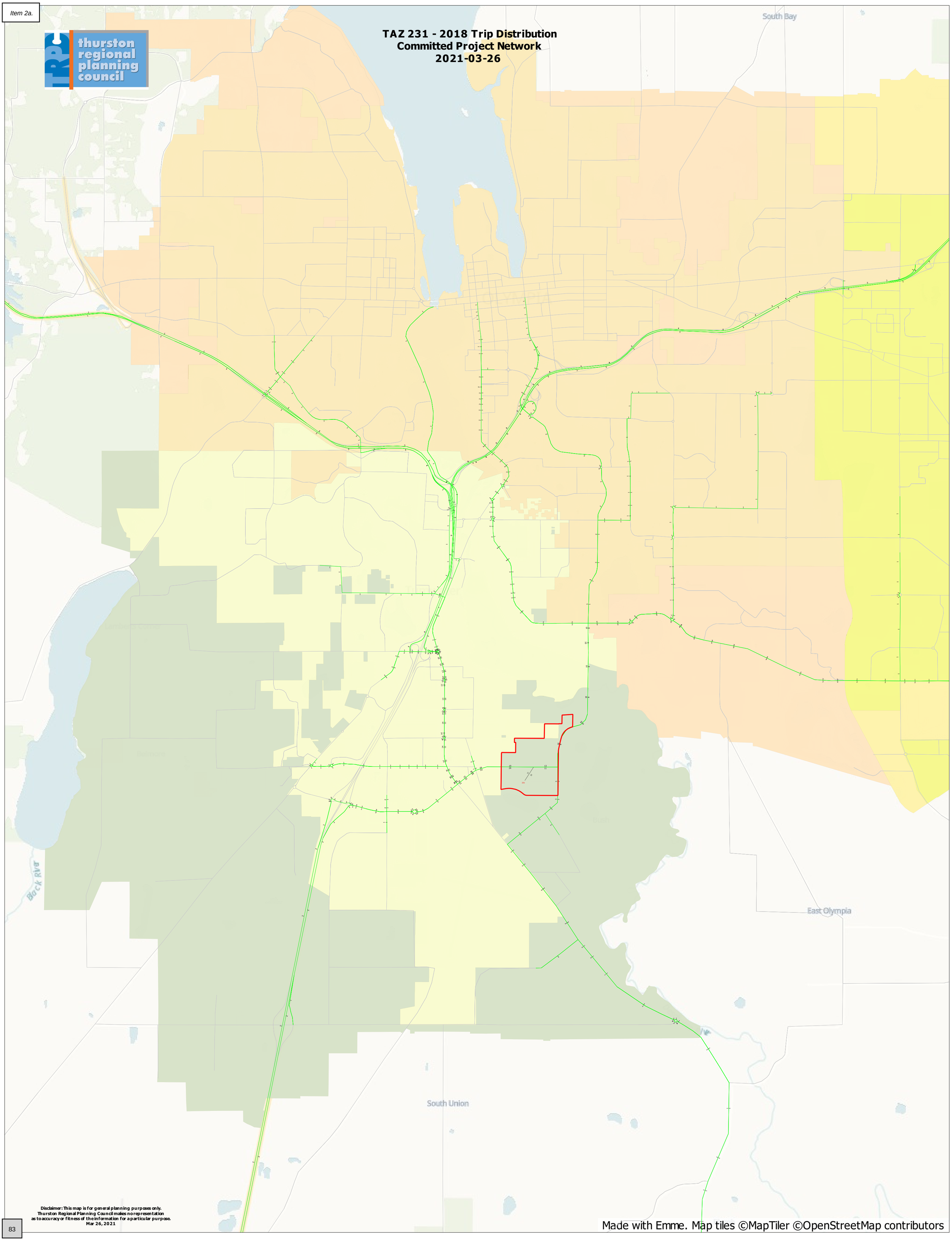
SHEET TITLE
PRELIMINARY SITE PLAN

SHEET
SP-01

Nov 21, 2024 - 8:02:06am - User: whitney
N:\2 - PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD - MULTIFAMILY\CAD\100.006 SP-01.DWG

thurston regional planning council

TAZ 231 - 2018 Trip Distribution
Committed Project Network
2021-03-26



Disclaimer: This map is for general planning purposes only.
Thurston Regional Planning Council makes no representation
as to accuracy or fitness of the information for a particular purpose.
Mar 26, 2021

Made with Emme. Map tiles ©MapTiler ©OpenStreetMap contributors

Land Use: 215
Single-Family Attached Housing

Description

Single-family attached housing includes any single-family housing unit that shares a wall with an adjoining dwelling unit, whether the walls are for living space, a vehicle garage, or storage space.

Additional Data

The database for this land use includes duplexes (defined as a single structure with two distinct dwelling units, typically joined side-by-side and each with at least one outside entrance) and townhouses/rowhouses (defined as a single structure with three or more distinct dwelling units, joined side-by-side in a row and each with an outside entrance).

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Dakota, Utah, Virginia, and Wisconsin.

Source Numbers

168, 204, 211, 237, 305, 306, 319, 321, 357, 390, 418, 525, 571, 583, 638, 735, 868, 869, 870, 896, 912, 959, 1009, 1046, 1056, 1058, 1077

Single-Family Attached Housing
(215)

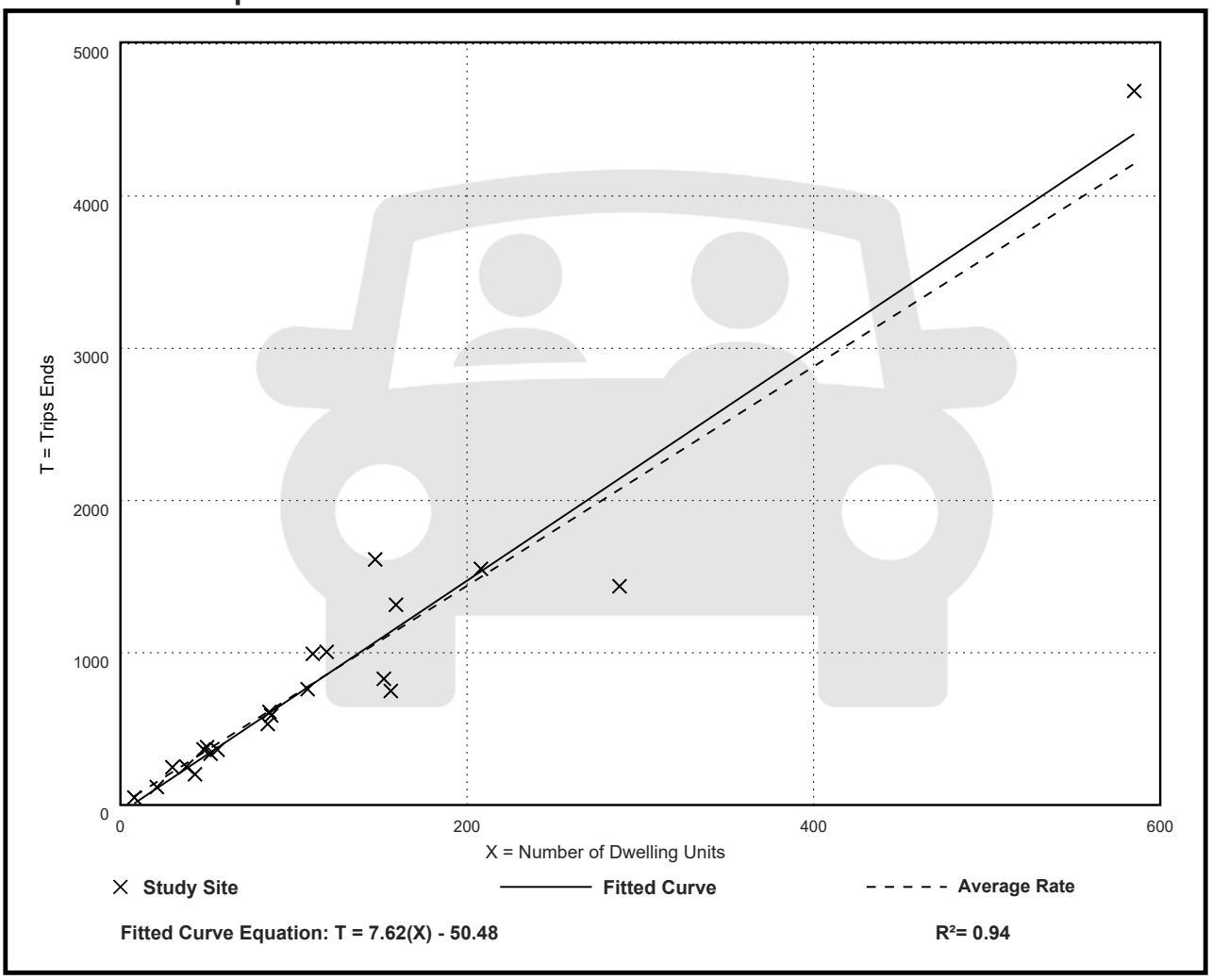
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



Fitted Curve Equation: T = 7.62(X) - 50.48

R^2= 0.94

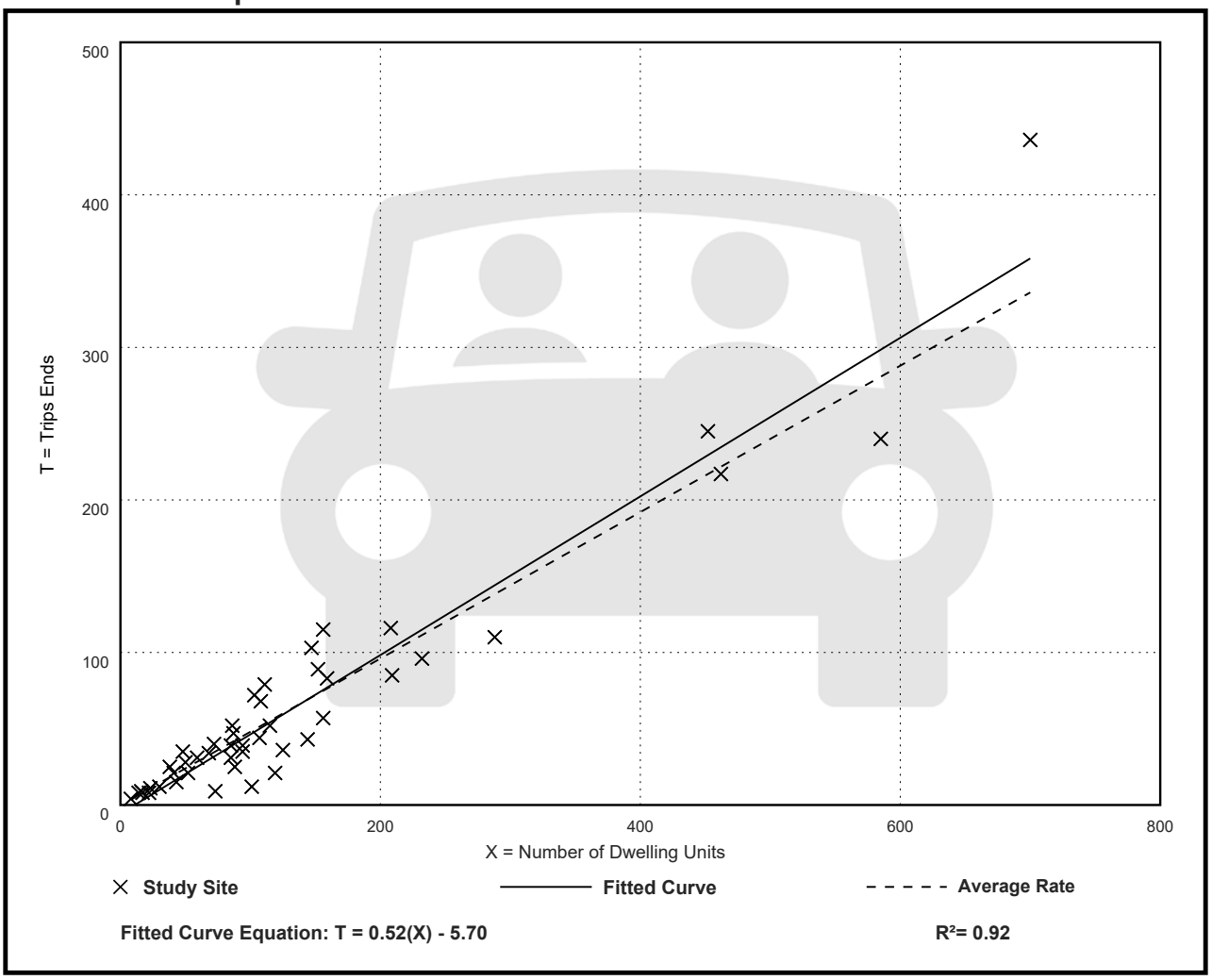
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 46
Avg. Num. of Dwelling Units: 135
Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



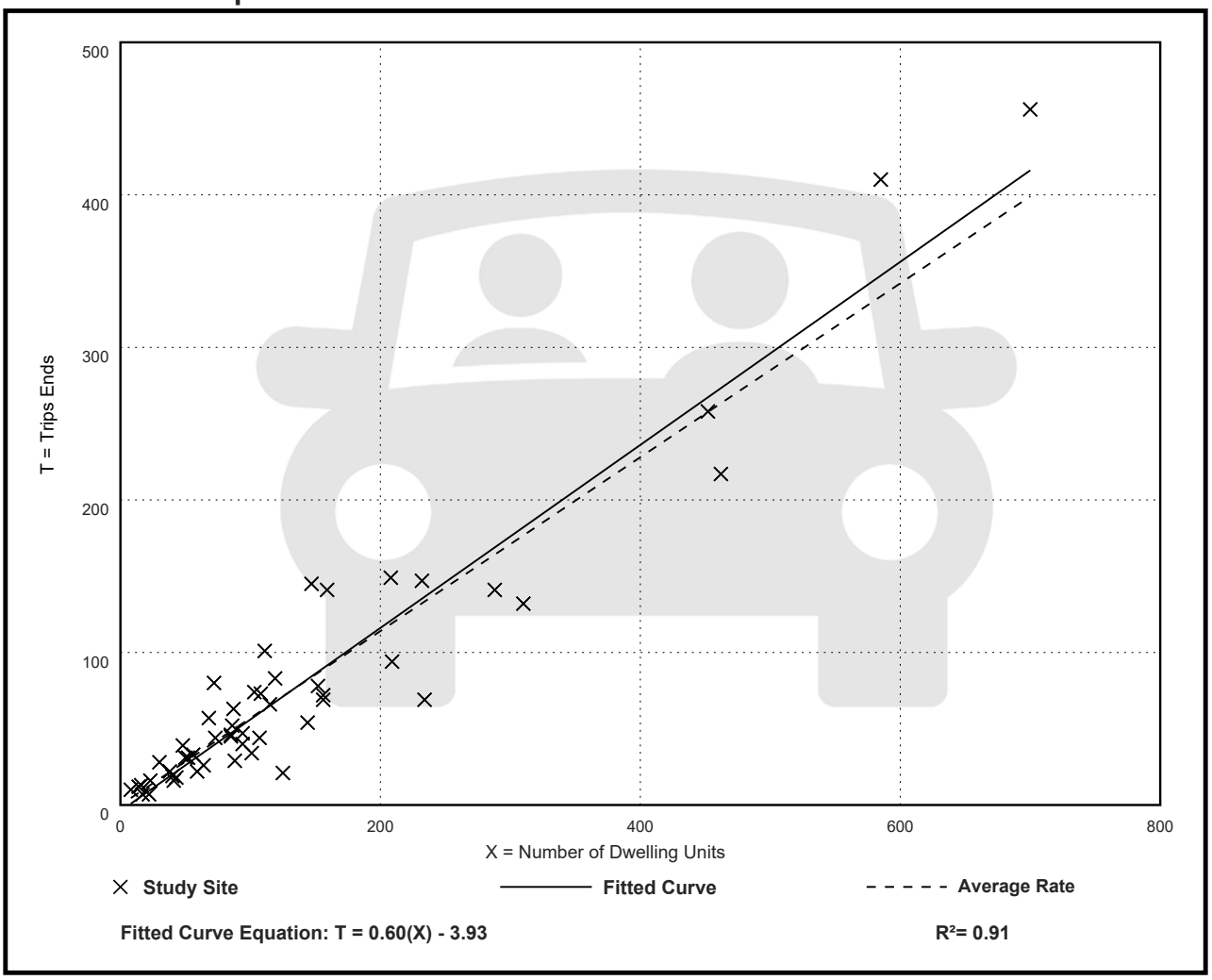
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 51
Avg. Num. of Dwelling Units: 136
Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Single-Family Attached Housing
(215)

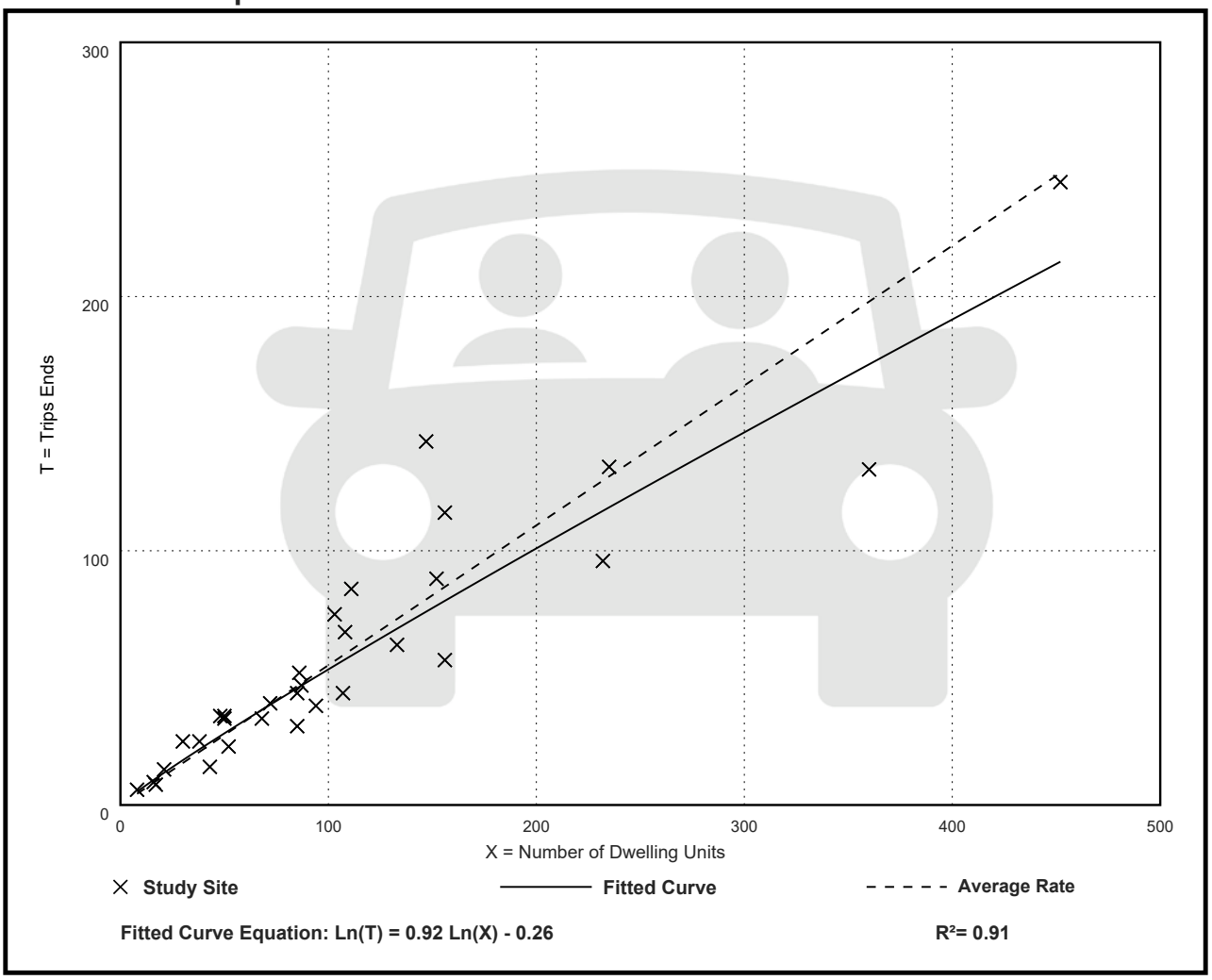
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
AM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 31
Avg. Num. of Dwelling Units: 110
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.55	0.35 - 0.97	0.16

Data Plot and Equation



Single-Family Attached Housing
(215)

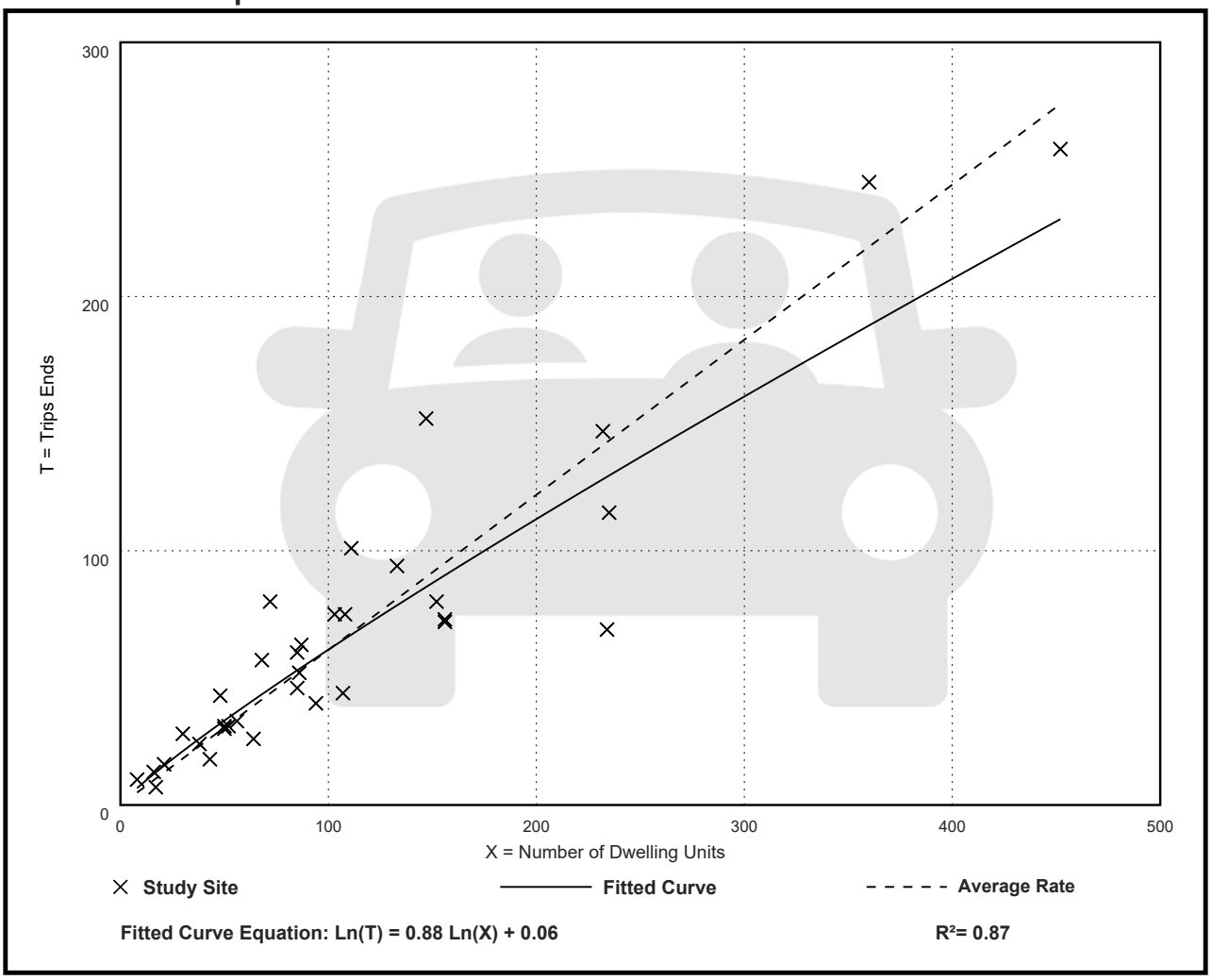
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
PM Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 34
Avg. Num. of Dwelling Units: 110
Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.61	0.29 - 1.25	0.18

Data Plot and Equation



Single-Family Attached Housing
(215)

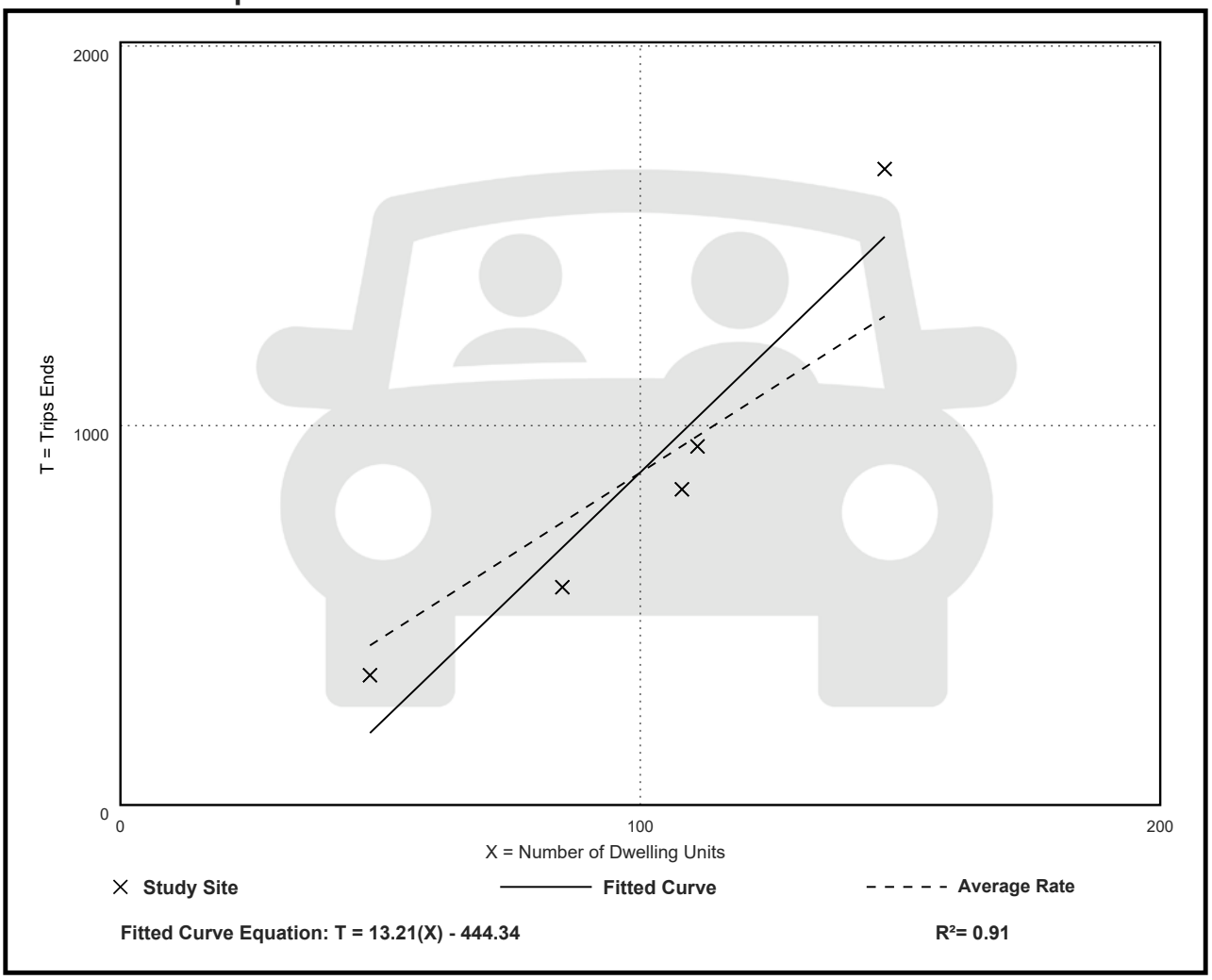
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Dwelling Units: 100
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
8.76	6.75 - 11.40	2.02

Data Plot and Equation



Fitted Curve Equation: T = 13.21(X) - 444.34

R^2= 0.91

Single-Family Attached Housing
(215)

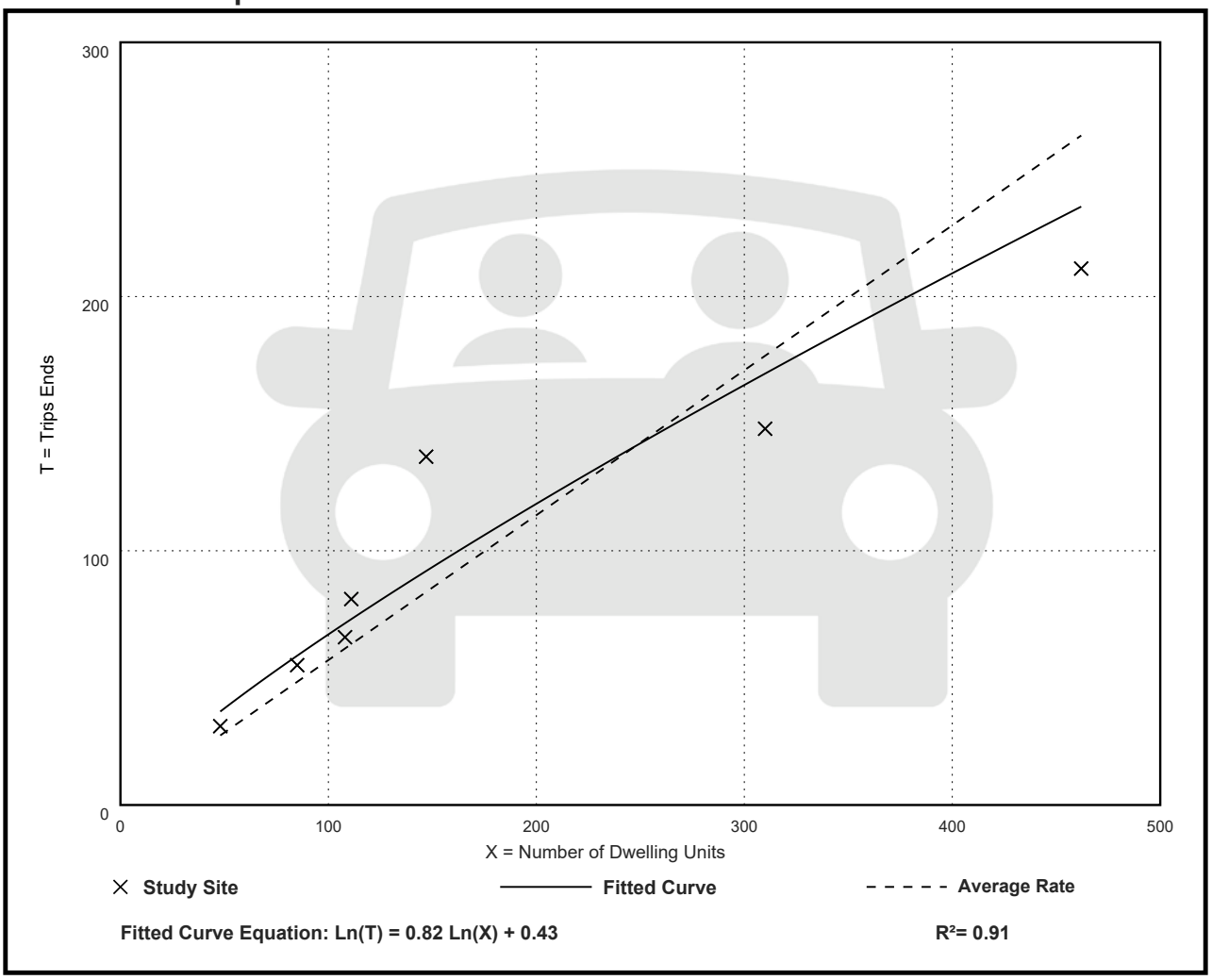
Vehicle Trip Ends vs: Dwelling Units
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. Num. of Dwelling Units: 182
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.46 - 0.93	0.17

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.82 Ln(X) + 0.43

R^2= 0.91

Single-Family Attached Housing
(215)

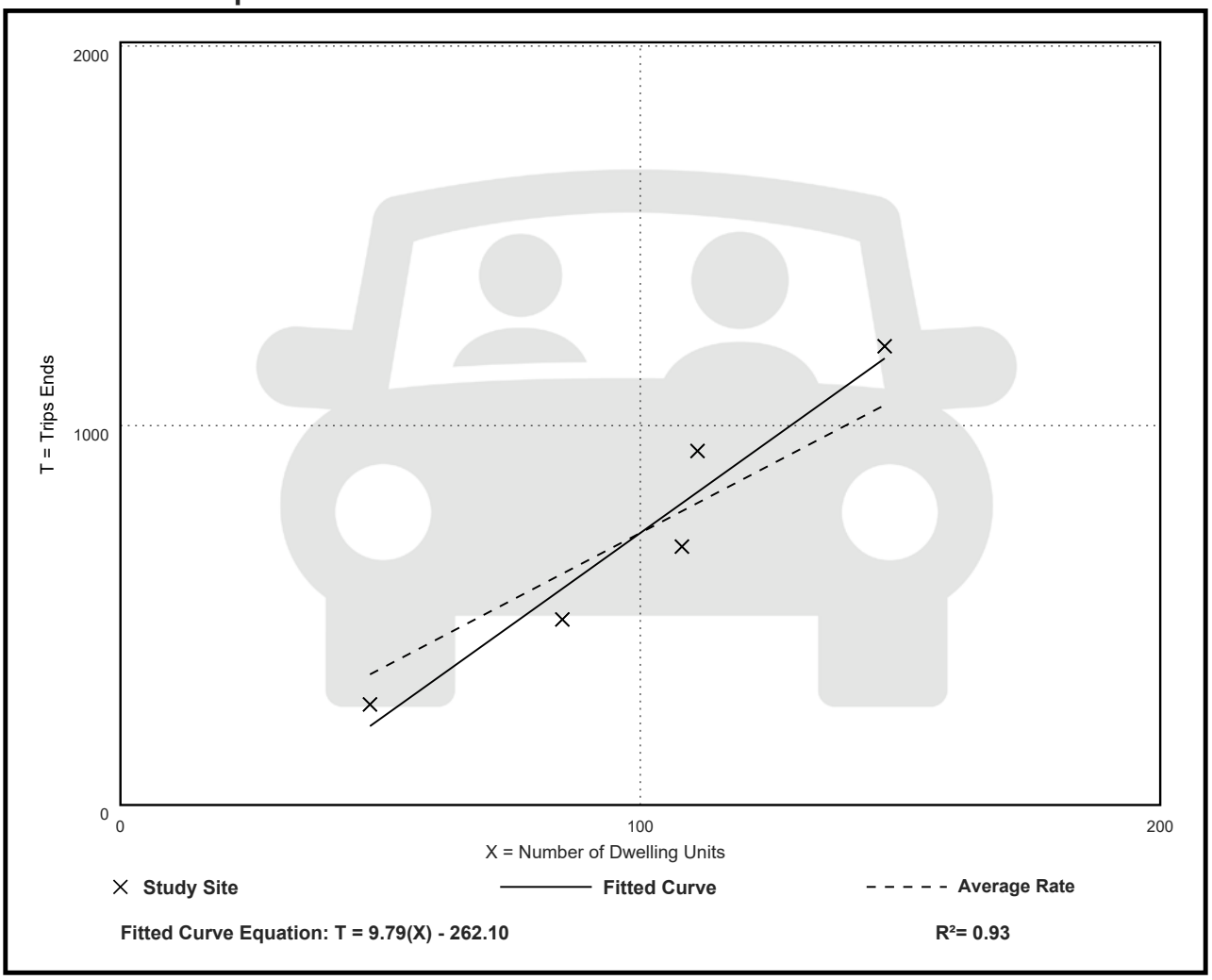
Vehicle Trip Ends vs: Dwelling Units
On a: Sunday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Dwelling Units: 100
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.17	5.52 - 8.41	1.34

Data Plot and Equation



Fitted Curve Equation: T = 9.79(X) - 262.10

R^2= 0.93

Single-Family Attached Housing
(215)

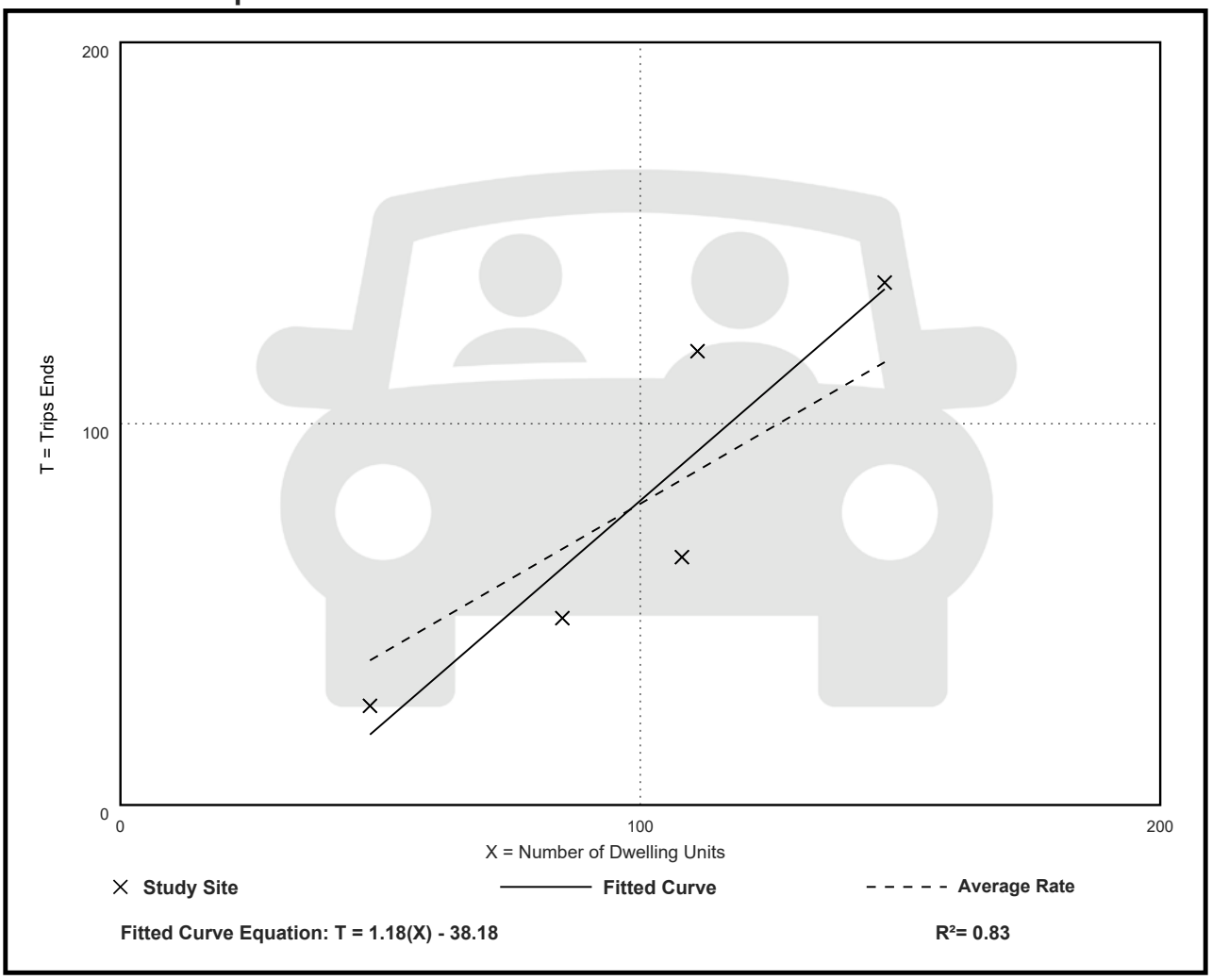
Vehicle Trip Ends vs: Dwelling Units
On a: Sunday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Dwelling Units: 100
Directional Distribution: Not Available

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.79	0.54 - 1.07	0.24

Data Plot and Equation



Fitted Curve Equation: T = 1.18(X) - 38.18

R^2= 0.83

Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: Residents
On a: Weekday

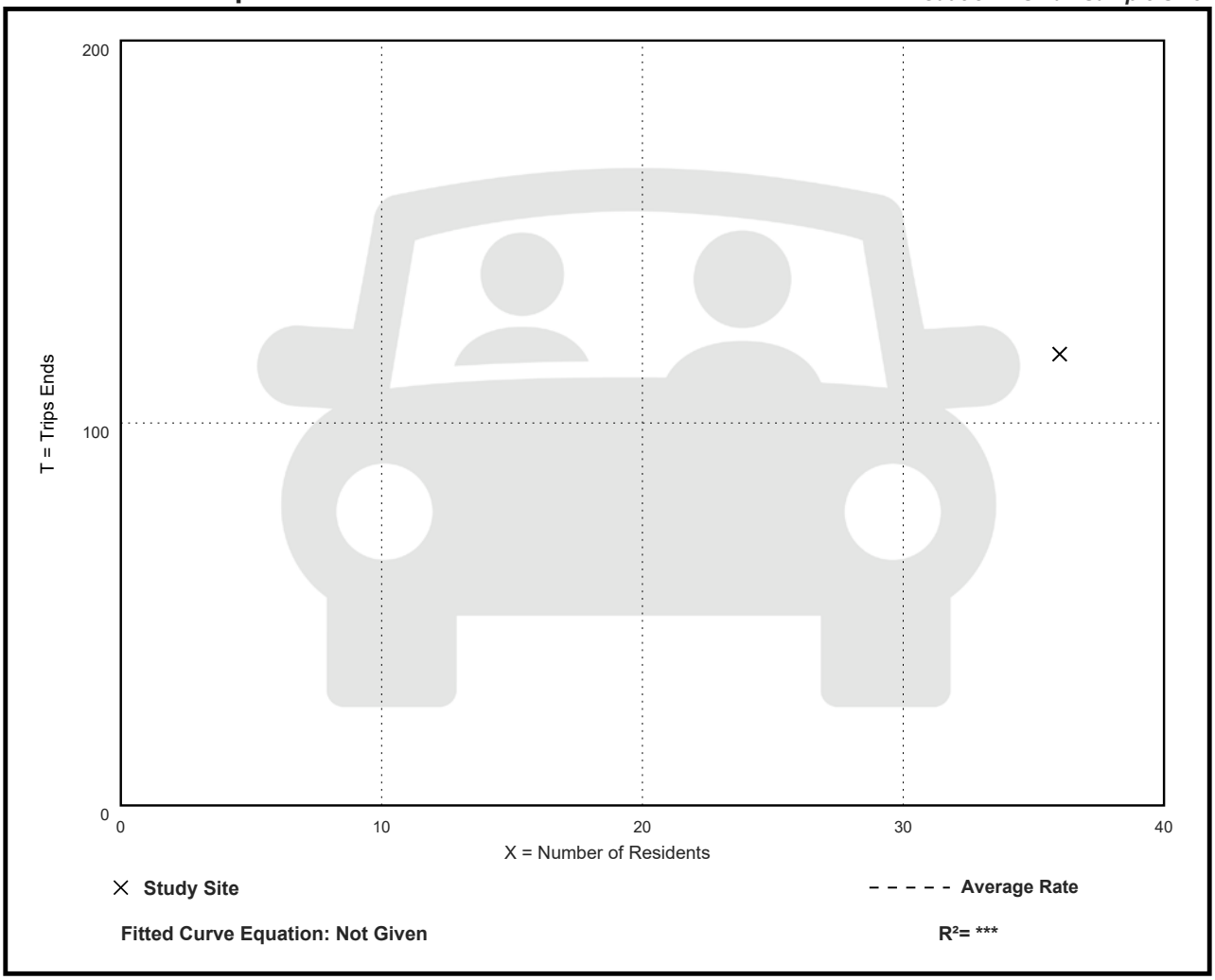
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Residents: 36
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
3.28	3.28 - 3.28	***

Data Plot and Equation

Caution – Small Sample Size



Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: Residents
On a: Weekday,
AM Peak Hour of Generator

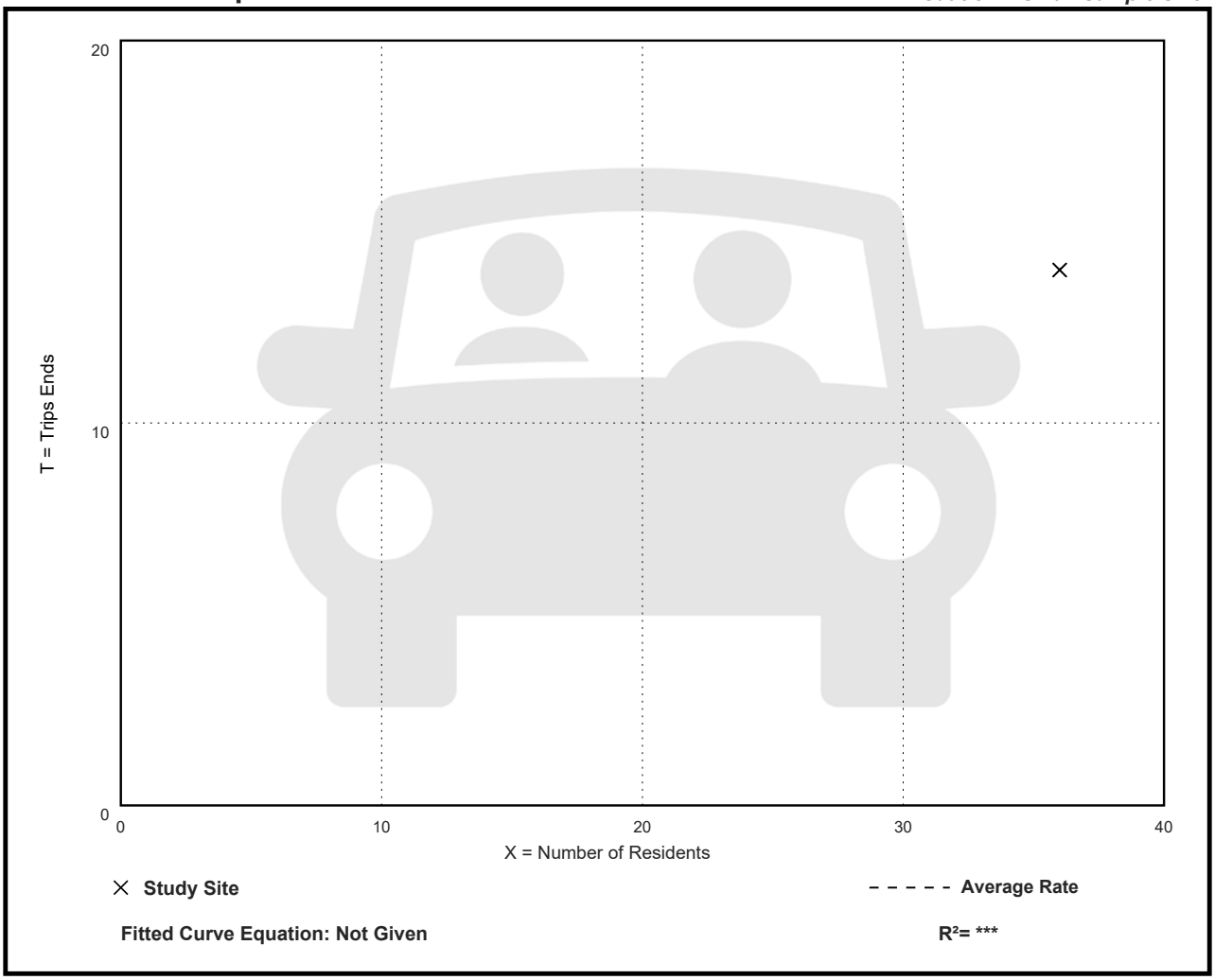
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Residents: 36
Directional Distribution: Not Available

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.39	0.39 - 0.39	***

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= ***

Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: Residents
On a: Weekday,
PM Peak Hour of Generator

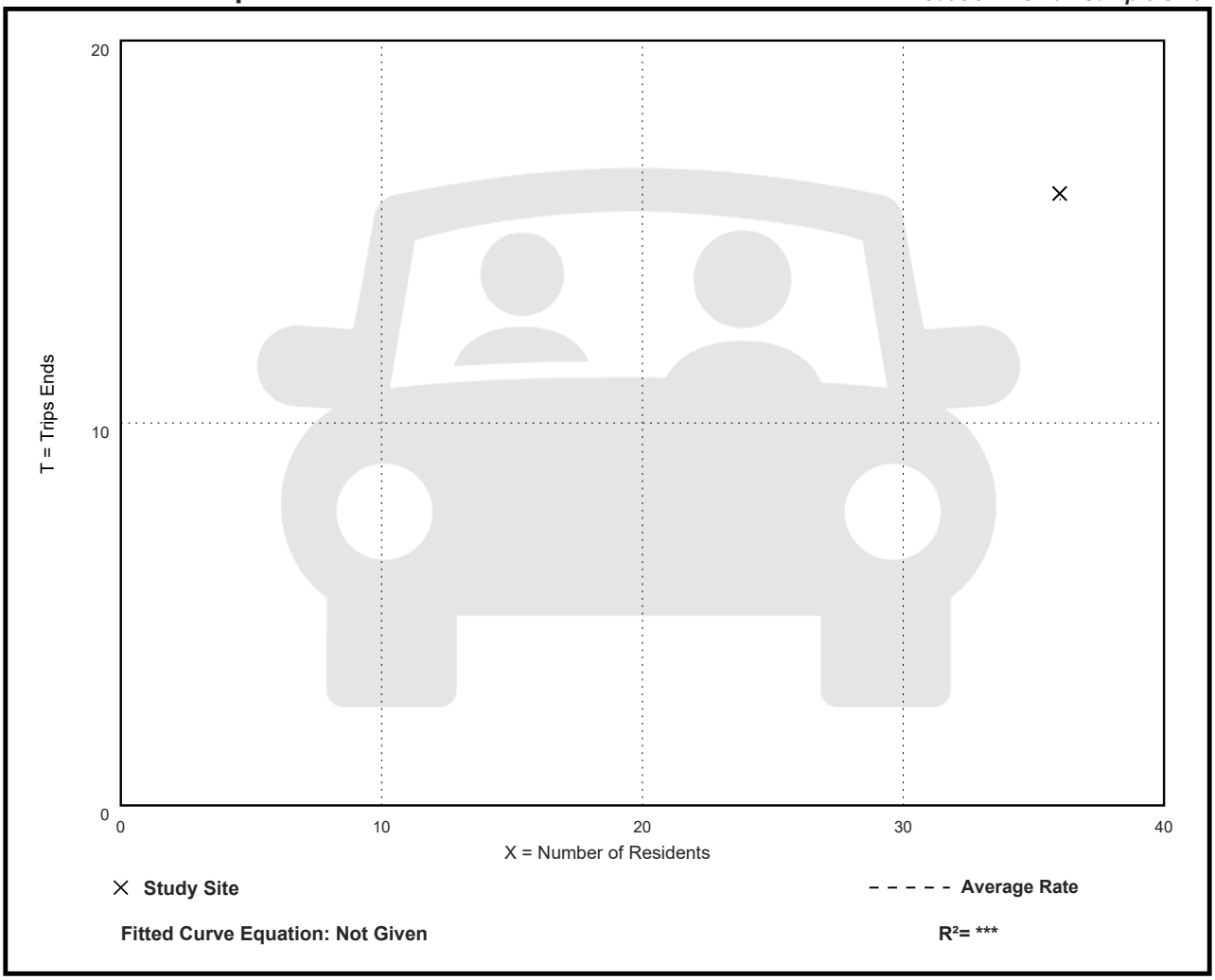
Setting/Location: General Urban/Suburban
Number of Studies: 1
Avg. Num. of Residents: 36
Directional Distribution: Not Available

Vehicle Trip Generation per Resident

Average Rate	Range of Rates	Standard Deviation
0.44	0.44 - 0.44	***

Data Plot and Equation

Caution – Small Sample Size



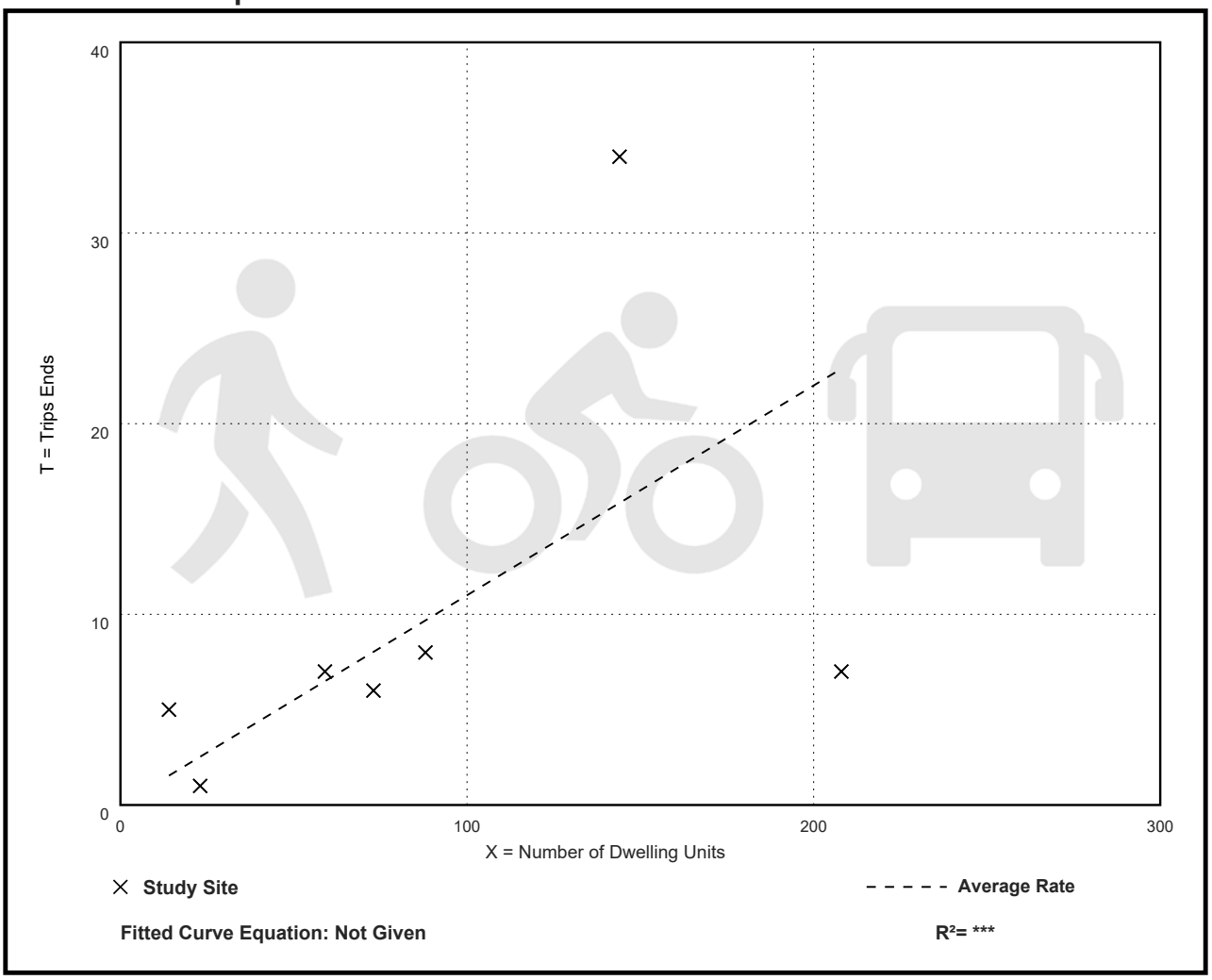
Single-Family Attached Housing
(215)

Walk+Bike+Transit Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. Num. of Dwelling Units: 87
Directional Distribution: 75% entering, 25% exiting

Walk+Bike+Transit Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.11	0.03 - 0.36	0.09

Data Plot and Equation



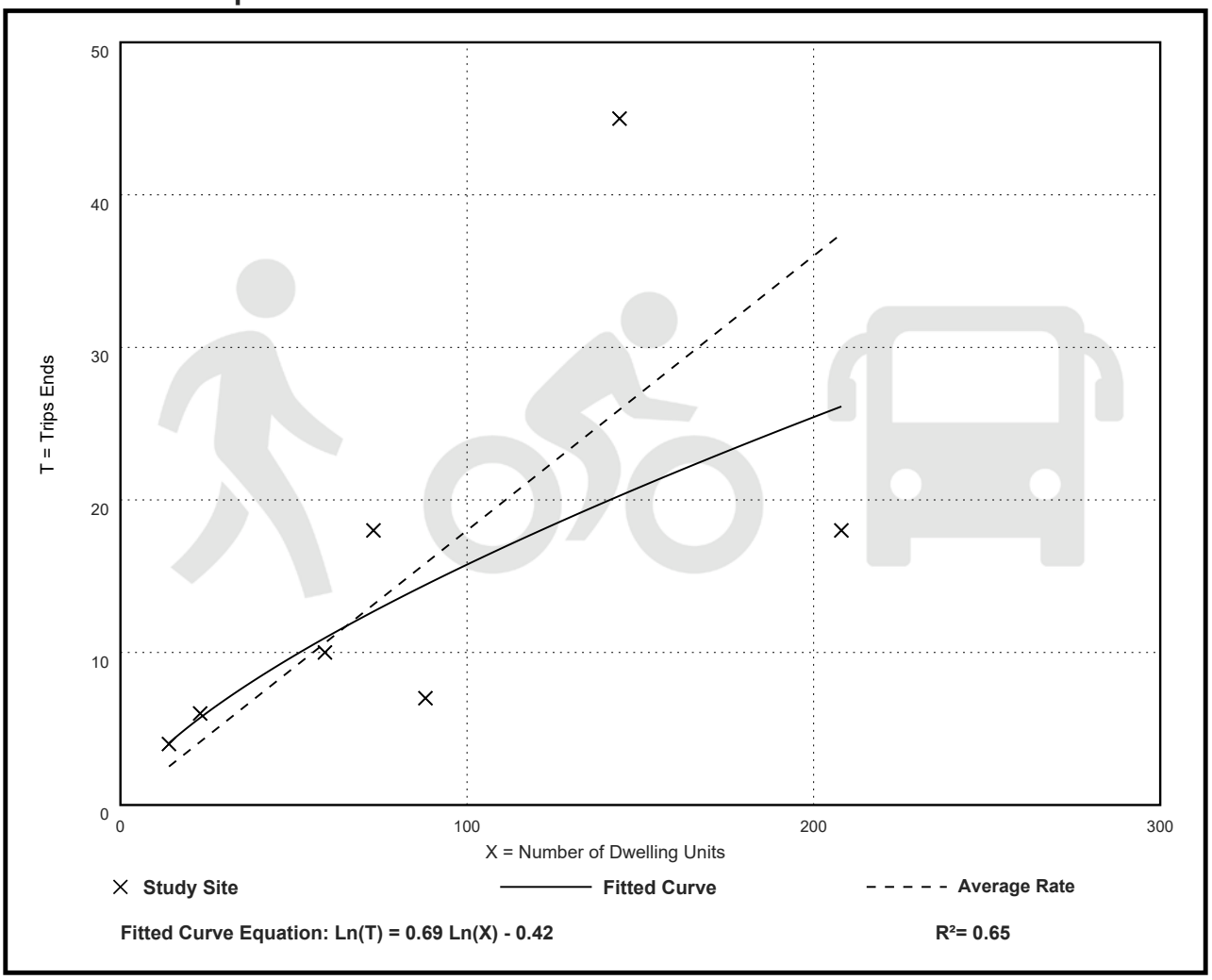
Single-Family Attached Housing
(215)

Walk+Bike+Transit Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. Num. of Dwelling Units: 87
Directional Distribution: 38% entering, 62% exiting

Walk+Bike+Transit Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.18	0.08 - 0.31	0.11

Data Plot and Equation



MEMO

Date: June 11, 2025
To: Tami Merriman, Permit Manager
Alex Baruch, Senior Planner
From: Jared Crews, Engineer II
CC: Brandon Hicks, TED Director

CITY OF TUMWATER

RE: Transportation Concurrency – Tumwater Townhomes TUM-25-0679

Based on the Traffic Scoping Analysis prepared for the Tumwater Townhomes project, dated June 10, 2025 and the City of Tumwater Capital Facilities Plan, The City finds that the Tumwater Townhomes project is concurrent in regards to Transportation conditioned as follows:

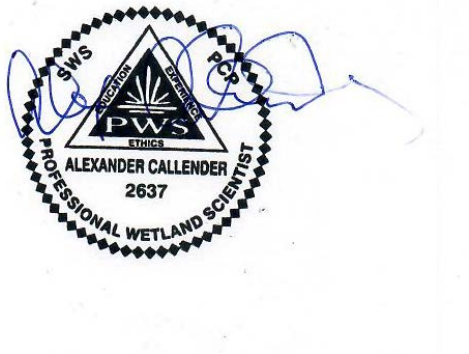
1. Shall Pay Transportation Impact Fees per the fee resolution in effect at time of building permit application

2. Shall construct transportation improvements as described on the approved formal site plan review letter.

3. A recent study of the I-5 interchange at Tumwater Boulevard indicates improvements are needed in order to meet established safety and level of service standards. This project shall either:
   a. Construct a roundabout at the northbound Interstate 5 On/Off Ramp and Tumwater Boulevard intersection; or
   b. Voluntarily pay a mitigation fee of $4,333.00 per peak trip generated by this project under RCW 82.02.020 to be used as described herein: *Tumwater Boulevard/I-5 Interchange: The City's planned transportation improvements at the Tumwater Boulevard/I-5 interchange include converting the interchange to a roundabout diamond interchange by replacing the southbound on/off ramp signal and northbound stop-controlled intersections with roundabouts. The project shows 1 trip.*

Tenino Land Company Multifamily Residential Project
Wetland Delineation Report and Assessment
Tumwater, WA

Prepared for
Todd Hansen
Tenino Land Company



N
W
E
Land Services Northwest
Alex Callender MS, PWS
120 State Ave NE PMB 190, Olympia, WA, 98501
360.481.4208

Executive Summary

Site Name: TLC Subdivision

Parcel Numbers: 79300001100 / 79300001200

Site Location: 715 Dennis Street SE / 934 Tumwater BLVD SE **Acreage:** 5.86 and 4.63 acres
Legal Descriptions: Section 02 Township 17 Range 2W Quarter NW SE Plat THOMPSONS TO BRIGHTON PARK LL-0605 LT 3 Document004 /413 and Section 02 Township 17 Range 2W Plat THOMPSONS TO BRIGHTON PARK LT 12Document 007/291 & W 30 F OF VAC ST

Project Staff: Alex Callender MS, PWS **Field Survey Conducted:** May 8, 2024, and August 16, 2024

Project Description: The project proposes a 6 lot quad unit multifamily subdivision with roads, sewer, water, utilities, parking and waste facilities.

Findings: On and offsite Wetlands A and B were found during the recon and delineated. Wetland A is found at the northern edge of both lots and Wetland B was discovered onsite and offsite of parcel 79300001200.

These wetlands were discovered during the reconnaissance and delineated on May 8, 2024, for wetland A and August 16, 2024, for Wetland B.

Wetland A was rated as a Category II wetland with an overall score of 20 and a habitat score of 7 (HLH). The applicant is proposing a PUD and will provide a unique proposal using the impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant can reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet.

Wetland B was rated as a Category III wetland with an overall score of 19 and a habitat score of five (LMM). Using PUD process to rehabilitat the prairie and the impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant will reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet.

Impacts: The applicant will be reducing the buffers of the wetland by 21,445 sq ft using the PUD process code to reduce the buffer from 150 feet to 110-feet.

The applicant has prepared a rehabilitation plan to satisfy the PUD process. TMC Section 18.36.010.B.3 "*One point: Go significantly beyond the minimum requirements for critical area protections to preserve, enhance, or **rehabilitate** critical areas and buffers in the planned unit development. Both the applicant and the city shall agree upon the location, size, and extent of the additional protection, enhancement, or rehabilitation."*

This project proposes to rehabilitate the prairie and wetland habitat in the vicinity of Wetland A. Native plants will be added in the area where the invasive species are removed to improve screening, food resources, nutrient uptake, and beneficial uses of the water that benefits the area fauna. Three wood duck boxes, three bat boxes, and two Martin houses will be installed in the trees at the edge of Wetland A to enhance wildlife habitat at the site. Improvements also include a one-time removal of a large area of Himalayan blackberry and Scotch broom (invasive plant species) which is offsite but adjacent to the wetland and between the site and the wetland. The applicant proposes a more than 4:1 prairie and wetland rehabilitation to reduction ratio in a plan outlined in Chapter 9 of the report to improve wetland and prairie functions.

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1.0 INTRODUCTION

This report is the result of a critical areas study of the following parcels (**Figure 1**):

- The 5.86 parcel number 79300001100 at 715 DENNIS ST SE Olympia, WA with the legal description of Section 02 Township 17 Range 2W Quarter NW SE Plat THOMPSONS TO BRIGHTON PARK LL-0605 LT 3 Document004/413

- The 4.63 parcel number 79300001200 at 934 TUMWATER BLVD SE with the legal description of Section 02 Township 17 Range 2W Plat THOMPSONS TO BRIGHTON PARK LT 12Document 007/291 & W 30 F OF VAC ST

The purpose of this report is to 1) identify and describe the wetlands or other critical areas on-site and within 315 ft off-site of the property 2) identify impacts to wetlands or critical areas and their buffers, and 3) apply mitigation/rehabilitation and conservation measures to off-set any critical areas or buffer impacts.

This report was prepared to satisfy the critical areas review process required by the City of Tumwater Title 15 – Environment. The City of Tumwater and possibly other agencies that may evaluate impacts to critical areas from the proposed project will be able to utilize information in this report.

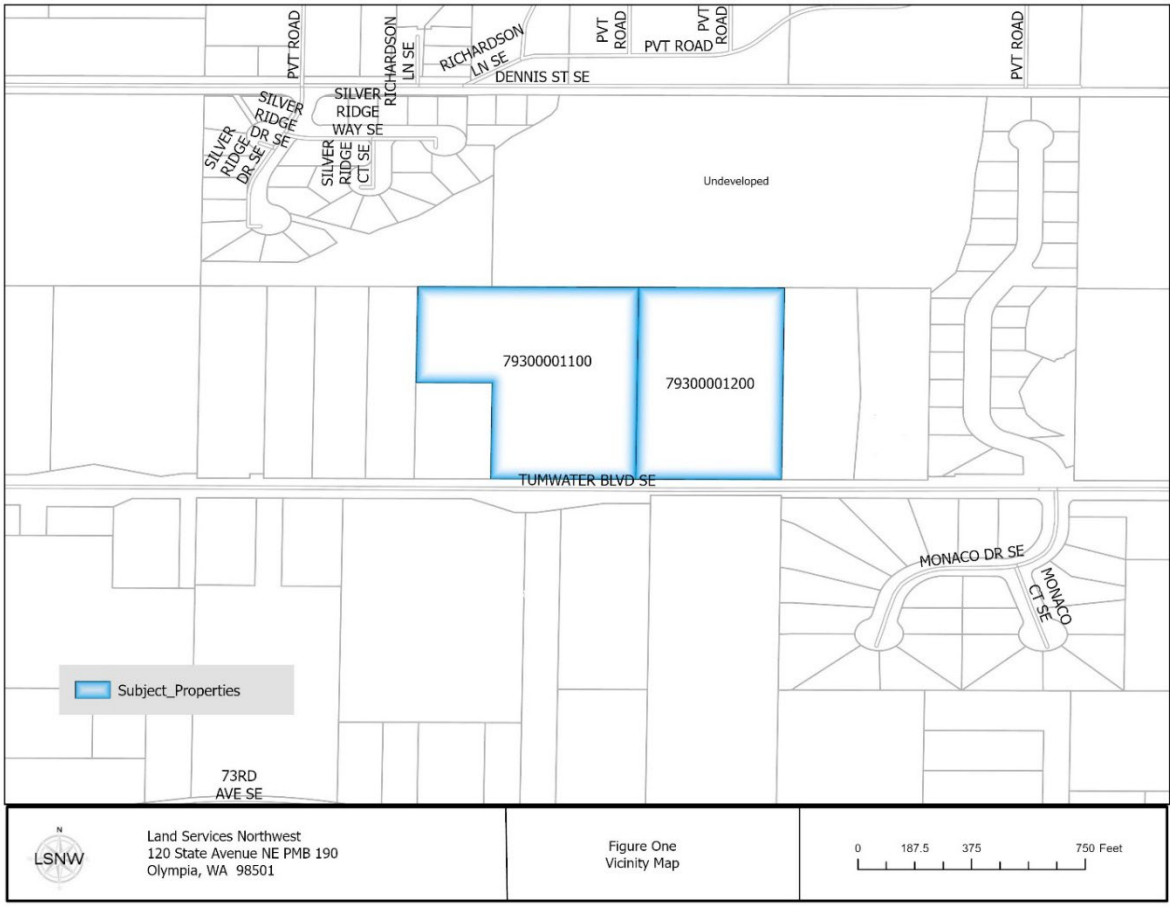


Figure 1-Vicinity Map

2.0 GENERAL DESCRIPTION AND LAND USE

2.1 Historical and Current Land Use

Historically, the parcels are undeveloped with parcel 79300001100 cut and left in pasture with a grove of 20-year-old Douglas fir in the south and Wetland A to the north. Parcel 79300001200 to the east is predominantly forested and undeveloped. There are undeveloped parcels to the north and west and single-family residences to the south, east, and west (**Figure 2**).

Figure 2 - Current Conditions

3.0 METHODOLOGY

3.1 Existing Information Review

Background information on possible wetlands was reviewed prior to field investigations and included the following:

National Wetlands Inventory (NWI) Map, USFWS Shapefile Data (**Appendix B**)

Thurston County Area Soil Survey, Soil Conservation Service (U.S. Department of Agriculture, 1973) National Resource Conservation Service Shapefiles (NRCS Soils Data Mart, 2006) (**Appendix C**)

Thurston County Geodata Wetland Inventory (**Appendix D**)

USGS 7.5 Minute Quadrangle Topographic Maps (**Appendix E**)

Washington Department of Fish and Wildlife Priority Habitats and Species Database (**Appendix G**)

Washington Department of Fish and Wildlife Salmonscape (**Appendix H**)

NOAA NOW Precipitation Data (**Appendix I**)

Washington Department of Natural Resources Natural Heritage Database

United States Hydric Soils List (U.S. Department of Agriculture 1991)

City of Tumwater

3.2 Analysis of Existing Information

The following existing information was reviewed to gain a better understanding of on-site conditions and its position in the landscape.

National Wetland Inventory (NWI) Map

The National Wetland Inventory (NWI) map (**Appendix B**), developed by the U.S. Fish and Wildlife Service (USFWS), shows Palustrine Forested (PFO) and Palustrine Emergent Persistent Seasonally Flooded (PEM1C) wetlands on and within 315 feet of the subject properties.

NRCS Soils Map

The Natural Resources Conservation Service (NRCS) has mapped the site (Appendix C) as containing:

- Norma silt loam
- Indianola loamy sand, 0 to 3 percent slopes and 3 to 15 percent slopes
- Mukilteo muck

Norma silt loam

Map Unit Setting

- *National map unit symbol:* 2ndcc
- *Elevation:* 0 to 1,000 feet
- *Mean annual precipitation:* 35 to 60 inches

- *Mean annual air temperature:* 48 to 52 degrees F
- *Frost-free period:* 150 to 200 days
- *Farmland classification:* Prime farmland if drained

Map Unit Composition

- *Norma, silt loam, and similar soils:* 90 percent
- *Minor components:* 10 percent
- *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Norma, Silt Loam

Setting

- *Landform:* Depressions, drainageways
- *Parent material:* Alluvium

Typical profile

- *H1 - 0 to 8 inches:* silt loam
- *H2 - 8 to 30 inches:* sandy loam
- *H3 - 30 to 60 inches:* sandy loam

Properties and qualities

- *Slope:* 0 to 3 percent
- *Depth to restrictive feature:* More than 80 inches
- *Drainage class:* Poorly drained
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
- *Depth to water table:* About 0 to 12 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* Frequent
- *Available water supply, 0 to 60 inches:* Moderate (about 8.9 inches)

Interpretive groups

- *Land capability classification (irrigated):* None specified
- *Land capability classification (nonirrigated):* 5w
- *Hydrologic Soil Group:* B/D
- *Ecological site:* F002XA007WA - Puget Lowlands Wet Forest
- *Forage suitability group:* Wet Soils (G002XS101WA)
- *Other vegetative classification:* Wet Soils (G002XS101WA)
- ***Hydric soil rating:*** **Yes**

Indianola loamy sand, 5 to 15 percent slopes

Map Unit Setting

- *National map unit symbol:* 2t635
- *Elevation:* 0 to 980 feet
- *Mean annual precipitation:* 30 to 81 inches
- *Mean annual air temperature:* 48 to 50 degrees F
- *Frost-free period:* 170 to 210 days
- *Farmland classification:* Prime farmland if irrigated

Map Unit Composition

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

Description of Indianola

Setting

- *Landform:* Terraces, kames, eskers
- *Landform position (three-dimensional):* Riser
- *Down-slope shape:* Linear
- *Across-slope shape:* Linear
- *Parent material:* Sandy glacial outwash

Typical profile

- *Oi - 0 to 1 inches:* slightly decomposed plant material
- *A - 1 to 6 inches:* loamy sand
- *Bw1 - 6 to 17 inches:* loamy sand
- *Bw2 - 17 to 27 inches:* sand
- *BC - 27 to 37 inches:* sand
- *C - 37 to 60 inches:* sand

Properties and qualities

- *Slope:* 5 to 15 percent
- *Depth to restrictive feature:* More than 80 inches
- *Drainage class:* Somewhat excessively drained
- *Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 99.90 in/hr)
- *Depth to water table:* More than 80 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Available water supply, 0 to 60 inches:* Low (about 3.9 inches)

Interpretive groups

- *Land capability classification (irrigated):* 4e
- *Land capability classification (nonirrigated):* 4s
- *Hydrologic Soil Group:* A
- *Ecological site:* F002XA004WA - Puget Lowlands Forest
- *Forage suitability group:* Droughty Soils (G002XS401WA), Droughty Soils (G002XN402WA)
- *Other vegetative classification:* Droughty Soils (G002XS401WA), Droughty Soils (G002XN402WA)
- ***Hydric soil rating:*** **No**

Mukilteo muck, drained

Map Unit Setting

- *National map unit symbol:* 2ndc5
- *Elevation:* 0 to 1,000 feet
- *Mean annual precipitation:* 40 to 70 inches
- *Mean annual air temperature:* 48 to 52 degrees F
- *Frost-free period:* 150 to 250 days
- *Farmland classification:* Prime farmland if drained

Map Unit Composition

- *Mukilteo, drained, and similar soils:* 90 percent
- *Minor components:* 10 percent
- *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Mukilteo, Drained

Setting

- *Landform:* Depressions
- *Parent material:* Herbaceous organic material

Typical profile

- *Oa - 0 to 6 inches:* muck
- *Oe2 - 6 to 60 inches:* mucky peat

Properties and qualities

- *Slope:* 0 to 2 percent
- *Depth to restrictive feature:* More than 80 inches
- *Drainage class:* Very poorly drained
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
- *Depth to water table:* About 0 to 24 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Available water supply, 0 to 60 inches:* Very high (about 26.9 inches)

Interpretive groups

- *Land capability classification (irrigated):* None specified
- *Land capability classification (nonirrigated):* 5w
- *Hydrologic Soil Group:* B/D
- *Ecological site:* R002XA003WA - Puget Lowlands Bogs and Fens
- *Forage suitability group:* Seasonally Wet Soils (G002XS201WA)
- *Other vegetative classification:* Seasonally Wet Soils (G002XS201WA)
- ***Hydric soil rating:*** **Yes**

Minor Components

Shalcar

- *Percent of map unit:* 5 percent
- *Landform:* Depressions
- *Other vegetative classification:* Wet Soils (G002XS101WA)
- *Hydric soil rating:* Yes

Mukilteo, undrained

- *Percent of map unit:* 5 percent
- *Landform:* Depressions
- *Other vegetative classification:* Wet Soils (G002XS101WA)
- *Hydric soil rating:* Yes

Thurston County Geodata Wetland Inventory

The Thurston County Geodata website has a mapping tool that depicts various critical areas such as streams and wetlands. This site shows a large Palustrine Forested and Scrub Shrub and Palustrine Emergent wetlands on and within 305 feet of the subject properties. (**Appendix D**).

USGS 7.5 Minute Topo Map

The USGS has topographical maps that depict natural and artificial features on the landscape including wetlands. This map shows does not show any features on site or within 300 feet of the site (**Appendix E**).

WADNR Forest Practices Stream Type Map

The Washington State Department of Natural Resources has a map that shows Wetlands, Streams and Lakes and their stream type for the purpose of Forest Practices according to WAC 222-16-3 **(Appendix F)**. This map shows a wetland on and within 315 feet of the subject properties.

WDFW Priority Habitats and Species Inventory and Salmonscape Inventory

The Department of Fish and Wildlife maintains an inventory of priority habitats and species information (**Appendix G**). This database shows the Big brown bat, Townsend's big-eared bat and Yuma myotis occurring within 330 ft. These bats may use the many snags in the wetland as borrows for torpur or to hunt macroinvertebrates as they emerge from the wetland. The WDFW Salmonscape shows a seasonal stream far offsite to the west, but it does not show any fish use.

NOAA NOW Precipitation Data

NOAA maintains a database that graphs the current precipitation against the wettest, driest, and normal accumulations of record **(Appendix H)**. This data shows that the precipitation since October 1, 2024, has been much drier than average. This is measured at the nearby Olympia Airport which is southwest of the subject property.

3.3 Field Investigation

Determination Guidelines

Land Services Northwest based its wetland identification and delineation upon the 1987 Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the regional specificity found in Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010). Generally, as outlined in the manuals, wetlands are distinguished from other landforms by three criteria: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology.

General Field Guidelines

Plant species were identified according to the taxonomy in *Flora of the Pacific Northwest* (Hitchcock and Cronquist, 1973), and the wetland status of plant species was assigned according to*: The National Wetland Plant List: 2016* (Lichvar, 2016). Wetland classes were determined by the U.S. Fish and Wildlife Service's system of wetland classification (FGDC, 2013). The wetland determination was based mainly on soils, vegetation, and hydrology characteristics indicative of wetland conditions.

The Corps Manual and Supplement describes soil, vegetation, and hydrological indicators of wetlands. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper par (National Technical Committee for Hydric Soils, 1994). Anaerobic conditions cause redoximorphic features to develop, which can be evidenced through the observation of mottling or gleying in the soil. Soils are hydric if they match the indicators in the supplement or meet the technical definition.

A soils evaluation was performed to determine if the area contained hydric soils. Additional test plots were sampled to gage possible wetland indicators and characteristics. Soils are normally excavated to 18 inches or more below the surface within a test pit to evaluate soil characteristics and hydrological conditions in both wetland and upland areas. Soil chroma (color) is evaluated using the *Munsell Color Chart* (Munsell Color, 1988).

The COE describe a wetland rating system for plants. Each species is assigned a probability of occurrence within wetlands, which is referred to as its wetland status. The wetland plant indicator system is as follows:

Table 1 Indicator Status Ratings

Indicator Status	Abrv.	Definitions - Short Version (ERDC/CRREL TN-12-1)
Obligate	OBL	Almost always occur in wetlands.
Facultative Wetland	FACW	Usually occur in wetlands, but may occur in non-wetlands.
Facultative	FAC	Occur in wetlands and nonwetlands.
Facultative Upland	FACU	Usually occur in non-wetlands, but may occur in wetlands.
Upland	UPL	Almost never occur in wetlands.
		(USACE, 2016)

In general, under the Federal methodology, more than 50 percent of the predominant plant species within a test plot must be rated FAC or wetter (i.e., FACW, OBL) to satisfy the wetland criteria for hydrophytic vegetation. Dominant species are those when ranked comprise 50% of the total or those that have a percent cover greater or equal to 20 percent within the test plot. Only dominant plant species were considered in the data analysis.

If wetland hydrology, including pooling, ponding, and soil saturation, is not clearly evident, hydrological conditions may be observed through surface or soil indicators. Indicators of hydrological conditions include drainage patterns, drift lines, sediment deposition, watermarks, historic records, visual observation of saturated soils, and visual observation of inundation.

3.4 Wetland Study

Field Survey

A wetland reconnaissance was performed on May 8, 2024, and August 16, 2024, to identify wetlands present on the subject property. Observations were made of the general plant communities, wildlife habitats, and the locations of potential streams and wetland areas. Present and past land-use practices were also noted, as were significant geological and hydrological features.

Once likely wetland areas were located, the Routine Onsite Determination Method was used to identify the presence of wetland parameters and to delineate the outer edge of the wetlands using the procedures outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). The Routine Onsite Determination Method was used in areas that maintained normal circumstances, were not significantly disturbed, and were not potential problem areas. A formal wetland delineation was performed on May 8, 2024, and August 16, 2024, to document off-site wetlands and to identify and map off-site wetlands within 315 feet of the subject property as we are able.

Test pits were dug on May 8, 2024, and August 16, 2024 (**Figure 3**) to develop a better understanding of soil profiles onsite. Soils were excavated to 18 inches or more below the surface within a test pit to evaluate soil characteristics and hydrological conditions throughout the site. Soil chroma (color) is evaluated using the *Munsell Color Chart* (Munsell Color, 1988). The result was entered in wetland data sheets **(Appendix I).**

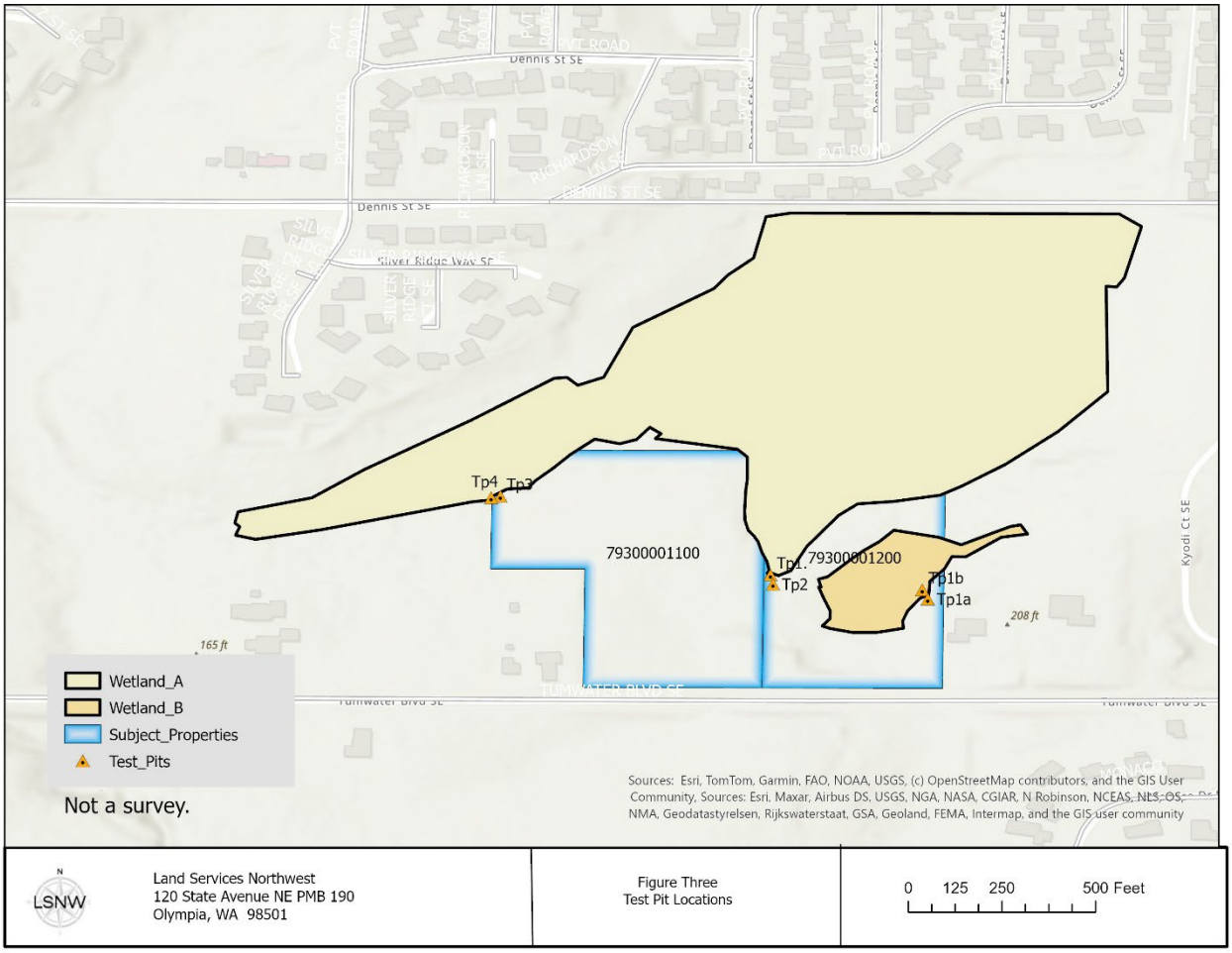


Figure 3 – Test Pit Locations

4.0 RESULTS

4.1 Existing Conditions

Parcel number 79300001100 has a slope from the south to the north with a high point in the south and is a mowed field with 15-20 yr old Douglas fir in the southern portion of the lot along Tumwater Blvd. The slope ends at the wetland that is on the northern border. When the water enters the wetland it drains far offsite to the west. No other wetlands or suspicious areas were found on site. The edge of the property was walked, and other areas were explored during the Mazama pocket gopher study, but there really were no other suspicious areas on site.

Parcel number 79300001200 is predominantly forested with a slope / depressional HGM wetland that starts on the adjacent parcel to the east. There is an upland area that separates the two wetlands, but it was breached by a culvert and short ditch that drains Wetland B into Wetland A.

4.2 Wetlands

Two wetlands were discovered during the reconnaissance and labeled Wetland A and Wetland B.

Wetland A

Wetland A is an aquatic bed, emergent, shrub scrub, forested (Cowardin Class), permanently and seasonally flooded (Hydroperiod) depressional (HGM) wetland with a muck soil. Wetland A was determined to be regulated and was rated using the Wetland Rating System for Western Washington (Hruby et al, 2014).

As mentioned, Wetland A is a large depressional wetland that has developed to the west and north. Its outlet is to the west.

Plants

Red alder (*Alnus rubra*; FAC) Western red cedar (*Thuja plicata*; FAC) Himalayan blackberry (*Rubus armeniacus*; FAC), Skunk cabbage (*Lysichiton americanum*; OBL , slough sedge (*Carex obnupta*; OBL) and Liy pads (*Nuphar polysepala*; OBL) are the primary plants found in the wetland.

Soils

Soils were sampled, and a dark brown 10YR 2/1-2 muck underlain with a 10YR6/2 silt loam.

Hydrology

It was end of the rainy season, so hydrology was directly observed. High groundwater and surface water after rain events sustain wetland hydrology.

Wetland B

Wetland B is a depressional seasonally flooded wetland that drains to Wetland A via a culvert and a very short ditch. Wetland B was determined to be regulated and was rated using the Wetland Rating System for Western Washington (Hruby et al, 2014).

Plants

Western red cedar (*Thuja plicata*; FAC), Red alder (*Alnus rubra*; FAC), Salmonberry *(Rubus Spectabilis*; FAC), Common ladyfern (*Athyrium cyclosorum;* FAC*) and* Skunk cabbage (Lysichiton americanum; OBL) are the primary plants found in the wetland.

Soils

Soils were sampled, and a dark 10YR2/1 underlain with 10YR4/2-4/6 silt loam.

Hydrology

It was end of the rainy season, so hydrology was directly observed on the surface.

5.0 WETLAND FUNCTIONAL VALUES

5.1 Wetland Functional Analysis Methodology

Wetlands, in general, provide many valuable ecological and social functions, including 1) stormwater storage, 2) groundwater recharge, 3) erosion control, 4) water quality improvement, 5) natural biological support, 6) overall habitat functions, 7) specific habitat functions, and 8) cultural and socioeconomic value.

Several procedures have been developed for assessing the importance and magnitude of functions and include the Washington Functional Assessment Method (WAFAM) Wetland Evaluation Technique, the Hydrogeomorphic Assessment Method the Habitat Evaluation Procedure (HEP), and numerous regional and/or local procedures. However, none of these methods were consistent with the needs of this project.

Wetland functions were also semi-quantitatively assessed using information gathered while performing the ECY Wetland Rating System for Western Washington (Hruby, 2014). The scores from the analysis of the wetland are found in Appendix H. This method is a comprehensive approach requiring substantial data input and assessment of onsite and landscape functions. The descriptions of wetland functions and the factors and parameters considered by that method are very helpful in interpreting the functioning of the subject wetlands and buffer areas. The methodology is scientifically based, in that its application requires a prior understanding of how wetlands function. Advanced experience, training and scientific objectivity of a wetland scientist applying the method is essential for an accurate assessment. Alex Callender has attended and received credit for the training in this method.

5.2 Wetland Functions

Wetland A

Wetland A is an approximately 15.77 - acre mostly undisturbed depressional wetland that drains much of the area south of Tumwater Boulevard and south of Dennis street and West of Henderson Boulevard.

Water Quality

Wetland A has constricted outlet and greater than 1/2 of the vegetation is ungrazed as there is aquatic bed vegetation open water in a portion of the wetland. The wetland has mapped organic soils and the area that is seasonally flooded is less than 1/4 of the overall area.

The wetland does not have greater than 10% of the buffer in pollution generating land use. There are septics within 250 feet of the wetland. There are no other pollution generating activities surrounding the wetland.

The wetland discharges within a mile of a 303d waterbody. It has a 303 d water in the basin. There is a TMDL planned for the Deschutes basin.

Hydrologic Functions

Wetland A is a depressional wetland that drains offsite to the west via a constricted outlet. Marks of ponding are 2-3 ft. The contributing basin is 10-100 times the size of the Wetland Unit.

The unit does not receive stormwater. >10% of the wetland is impervious surface. The wetland has more than 25% of the area of the catchment basin in high intensity land use. There is surface flooding in some areas in the wetland drainage basin further downstream, but the wetland is not mentioned in any flood plans or studies as important for this function.

Habitat functions

Wetland A has a high interspersion of structure as there is aquatic bed, emergent, shrub scrub and forested areas. Wetland A does not have a lot of vegetative species diversity with a forested fringe of alders and western red cedars and twinberry, Himalayan blackberry, and an emergent lily pad and cat tail interior. There is not much wetland hydroperiod diversity as it has a hard edge and is permanently flooded with a small band of seasonally flooded area. Wetland A has high density development in the area as there are subdivisions that surround the wetland and the airport rates high for land use in the landscape position, so it rates moderate. Wetland A has little high intensity accessible habitat, so it rates moderate for this feature as well.

There are snags and logs and a stream at its outlet, so it rates high for priority habitats and species. There were no other priority habitats and species found in the area via the PHS Mapping tools, and no pocket gophers or prairie was found onsite.

Wetland B

Wetland B is an approximately 1.06 acre mostly undisturbed forested depressional wetland that drains to Wetland A during periods of high precipitation.

Water Quality

Wetland B has an intermittently flowing stream or ditch. The wetland has mapped organic soil and has persistent ungrazed plants on greater than fifty percent of the area. The area that is seasonally flooded is less than 1/4 of the overall area.

The wetland does not have stormwater discharge and greater than ten percent of the land use within 150 ft. is pollution generating. There are septics within 250 ft. of the wetland.

The wetland discharges within a mile of a 303d waterbody. It has a 303 d water in the basin. There is a TMDL planned for the Deschutes basin.

Hydrologic Functions

Wetland B has an intermittently flowing stream or ditch. Marks of ponding are 2-3 ft. The contributing basin is 10-100 times the size of the Wetland Unit.

The wetland does not receive stormwater discharges. Greater than 10 percent of the area within 150 ft generates excessive runoff. More than 25 percent of the catchment basin of the wetland is covered by intensive human land uses that promote runoff (Land Use Intensity in the basin has >25% in 1 residential unit per acre or greater, or commercial /industrial use.

There is surface flooding in some areas in the basin further downstream, but the site is not mentioned in any local or regional plans as important for this function.

Habitat functions

Wetland B has two vegetative structures – forested and forested with 3 layer's There is one hydroperiods which is seasonally flooded and has moderate diversity with 5 to nineteen plant species. The wetland area has one Cowardin classifications, so it has a low interspersion of habitat. There is large, downed woody debris, snags and logs.

Ten to nineteen percent of the 1km is accessible habitat and the undisturbed habitat is ten to fifty percent of the area in more than three patches. Less than fifty percent in the 1km polygon is high intensity land use.

There were no other priority habitats and species found in the area via the PHS Mapping tools, and no pocket gophers or prairie was found onsite.

6.0 REGULATORY CONSIDERATIONS

6.1 City of Tumwater Regulations

The City of Tumwater regulates wetlands using a combination of land use intensity wetland category and habitat scores.

Wetland A was rated as a Category II wetland with an overall score of 20 and a habitat score of 7 (MMH). Using the impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant can reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet.

Wetland B was rated as a Category III wetland with an overall score of 19 and a habitat score of five (LMM). There are no impacts to the wetland proposed and through the PUD process we will improve the overall buffer by using the buffer impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant will reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet and provide treatments to enhance the buffer function.

Table 16.28.170(2) Explanatory Notes:

(1) No information on other measures for protection was available at the time the 2014 Washington State Wetland Rating System for Western Washington was written. The Washington State Department of Ecology will continue to collect new information for future updates of the 2014 rating system.

Table 16.28.170(3): Category III Wetland Buffer Widths

(Buffers for wetlands scoring sixteen to nineteen points for all functions)

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use	Other Measures Recommended for Protection
Moderate level of function for habitat (score for habitat 5 – 7 points) If wetland scores 8 – 9 habitat points, use Table 16.28.170(2): Category II Wetland Buffer Widths	Low – 75 ft Moderate – 110 ft High – 150 ft	No recommendations at this time (1)
Score for habitat 3 – 4 points	Low – 40 ft Moderate – 60 ft High – 80 ft	No recommendations at this time (1)

Table 16.28.170(3) Explanatory Notes:

16.28.170 Wetland buffers.

A. Standard Buffer Zone Widths. Wetland buffer zones shall be required for all regulated activities adjacent to regulated wetlands.

1. Any wetland created, restored or enhanced as compensation for approved wetland alterations shall also include the standard buffer required for the category of the created, restored, or enhanced wetland.

2. All buffers shall be measured from the wetland boundary as surveyed in the field pursuant to the requirements of TMC 16.28.080.

3. The width of the wetland buffer zone shall be determined according to wetland category, the functions and special characteristics of the wetland, and the proposed land use.

4. Wetlands of high conservation value, bogs, and forested wetlands shall have the buffers shown in the table below independent of points scored for habitat in the rating system.

5. If a wetland meets more than one of the characteristics listed in Tables 16.28.170(1) to 16.28.170(4), the buffer recommended to protect the wetland is the widest one.

C. Buffer Width Reduction. The buffer widths recommended for land uses with high-intensity impacts to wetlands can be reduced to those widths recommended for moderate-intensity impacts under the following conditions:

1. For wetlands that score moderate or high for habitat (five points or more), the width of the buffer around the wetland can be reduced to 110 feet through the PUD process if it is agreed that the project will provide the community with something beyond a typical mitigtation.

As a condition of the PUD application the applicant will maintain:

a. A relatively undisturbed vegetated corridor at least one hundred feet wide is protected between the wetland and any other priority habitats as defined by the Washington State Department of Fish and Wildlife. The corridor must be protected for the entire distance between the wetland and the priority habitat via some type of legal protection such as a conservation easement; and

There is a 110-ft buffer after the reduction. The applicant will maintain this as a condition of the application. In addition, the applicant will implement the measures below as applicable.

b. Measures to minimize the impacts of different land uses on wetlands, such as the examples summarized in Table 16.28.170(5), will also be applied.

Table 16.28.170(5): Measures to Minimize Impacts to Wetlands

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Lights	Direct lights away from wetland	Parking lots, warehouses, manufacturing, residential
Noise	Locate activity that generates noise away from wetland	Manufacturing, residential
Toxic runoff (1)	Route all new runoff away from wetland while ensuring that wetland is not dewatered Establish covenants limiting use of pesticides within 150 ft of wetland Apply integrated pest management	Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, landscaping
Stormwater runoff	Retrofit stormwater detention and treatment for roads and existing adjacent development Prevent channelized flow from lawns that directly enters the buffer	Parking lots, roads, manufacturing, residential areas, commercial, landscaping

Table 16.28.170(5): Measures to Minimize Impacts to Wetlands

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Change in water regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns	Impermeable surfaces, lawns, tilling
Pets and human disturbance	Use privacy fencing Plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion Place wetland and its buffer in a separate tract	Residential areas
Dust	Utilize best management practices to control dust	Tilled fields

Table 16.28.170(5) Explanatory Notes:

(1) These examples are not necessarily adequate to meet the rules for minimizing toxic runoff if threatened or endangered species are present at the site.

The applicant will be able to meet the requirements of the table above. (See section 8.2 for implementation)

The wetlands, and their buffers are depicted below (**Figure 4**).

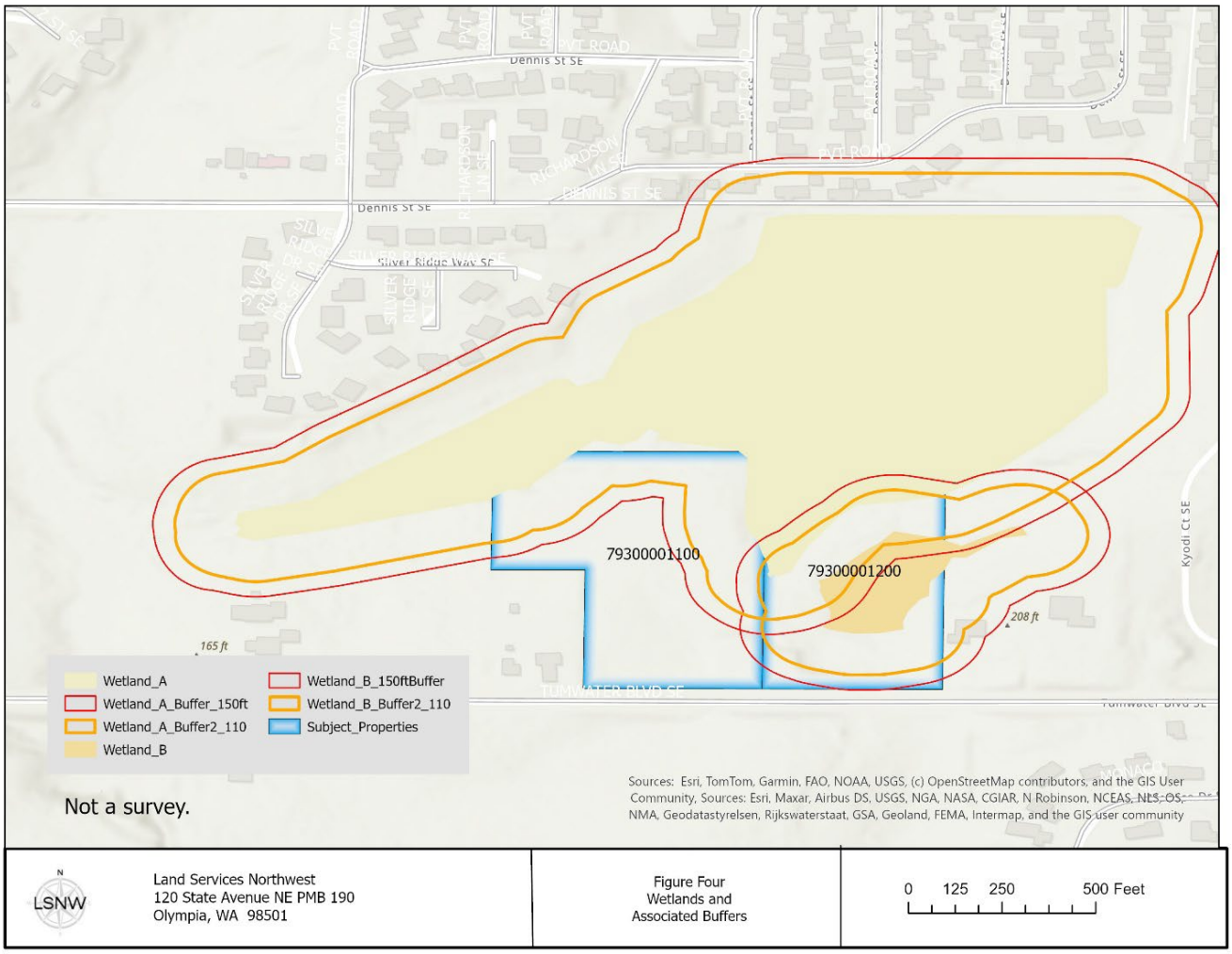


Figure 4 – Standard 150 ft Wetland Buffers and 110 ft Reduced Buffers.

Table 2 - Summary of Wetlands and Streams on or in the Vicinity of the Subject Property

Wetland	Size (Acres)		Category	Habitat Score	Base Buffer Width (feet)	Buffer after rehabilitation	Comments
	On-site	Off-site (estimated)					
Wetland A	0.2894	~15.57	II	7 (MMH)	150	110	Buffer reduction using table and 92,000 sq ft of wetland buffer enhancement and prairie enhancement with rehabilitation to be applied.
Wetland B	.99	0.7	III	5 (LMM)	150	110	No development activity

6.2 Corps Regulations

Wetlands A and B flow offsite and eventually to the Deschutes River and then to the Puget Sound. Therefore, they would be maintained as a Water of the US and regulated under the Clean Water Act. No impacts are proposed to Wetlands A or B beyond the buffer reduction.

6.3 Department of Ecology

Under RCW 90.48, the Washington Department of Ecology (DOE) reserves regulatory authority to regulate “waters of the state” under Section 401 of the Clean Water Act. No wetland impacts are proposed.

7.0 WILDLIFE

Wildlife observed during the field investigations are typical of urban/suburban adapted species (Table 2). The European starling, possum, and other species adapted to urbanization may inhabit or visit the site for food and shelter.

No other Federally-listed, or priority species was observed on the subject property or near the site based on the WDFW Priority Habitats and Species (PHS) and field observations during the

reconnaissance and delineation. During the limited duration of the site reconnaissance and delineation, no evidence of the Federally-listed Bald Eagle, Marbled Murrelet, or Spotted Owl was observed on-site.

No Federally-listed salmonid species are known to occur on-site, based on the WDFW SalmonScape database, the WDFW PHS database, and site reconnaissance.

No wildlife was observed on site during site visit beyond the occasional mole mound and deer and coyote scat.

8.0 PROPOSED PROJECT

8.1 Description

The project proposes a 6 lot quad unit multifamily subdivision with roads, sewer, water, utilities, parking and waste facilities. **(Figure 5 – Site Plan)**

8.2 Development Impacts

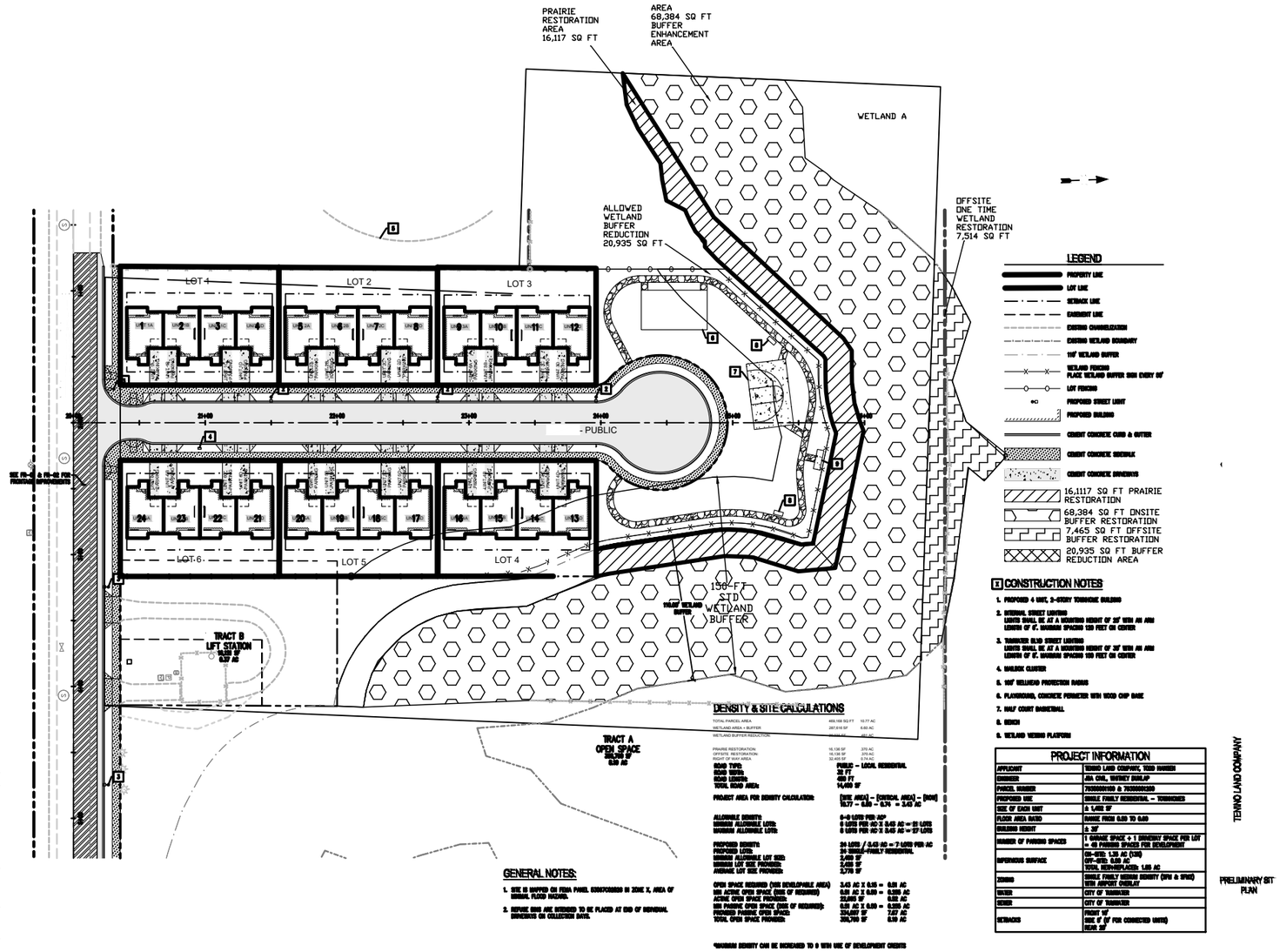
No direct impacts to the wetlands are expected. Wetland buffers will be reduced from 150 ft to 110 feet using measures in code. This will require the special mitigating measures invoked by the PUD process. Specifically, the PUD Public Benefit Point Two – Critical Areas Enhancement:

TMC Section 18.36.010.B.3 "*One point: Go significantly beyond the minimum requirements for critical area protections to preserve, enhance, or rehabilitate critical areas and buffers in the planned unit development. Both the applicant and the city shall agree upon the location, size, and extent of the additional protection, enhancement, or rehabilitation.*"

This project proposes to rehabilitate and enhance the prairie and wetland habitat in the vicinity of Wetland A. Improvements include a one-time improvement of a large area of Himalayan blackberry and Scotch broom, English holly and English hawthorne (invasive plant species). This area is offsite and currently owned by the applicant, but cannot be maintained in the future due to ownership. Native plants will be added in the area where the invasive species are removed to enhance the buffer by improving: screening, food resources, nutrient uptake, and shade for the beneficial uses of the water that benefits the area fauna. The onsite areas immediately next to the Wetland A will have dense native plants installed with a 10 year monitoring plan for maintenance and contingencies. The area beyond the wetland enhancement area will be reserved for a prairie restoration area which will also have maintenance and contingenies provided for up to ten years. Additional habitat features will be installed near the Wetland A to include Three wood duck boxes, three bat boxes, and two Martin houses will be installed in the trees at the edge of Wetland A to enhance wildlife habitat at the site. Outside of the praire rehabilitation area an open space area with walking paths, interpretive signage and viewing platforms will provide additional vegetation and amenities for the community to see a south sound praire and introduce this special habitat only found in this part of the country..

To reduce the impacts of development, other measures will be applied from the table as applicable to include:

- Direct Lights Away
- Locate activity that generates noise away from the wetland
- Route all new runoff away from wetland while ensuring that wetland is not dewatered. (Level Spreader to be Installed)



LAND SERVICES NORTHWEST
120 STATE AVE NE #190
OLYMPIA, WA 98501
360-481-4208

FIGURE 5
SITE PLAN WITH PLANTING AREAS
(NOT A SURVEY)

Scale: 1" = 100'

- HOA to Establish covenants limiting use of pesticides within 150 ft of wetland
- Use integrated pest management (**Appendix K**)
- Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns (level spreader)
- Plant dense native vegetation prairie and buffer plants in the buffer. Remove invasive species where present to include scotch broom and Himalayan blackberries (See Chapter 9).
- Utilize best management practices to control dust (Construction BMP's for Dust.

8.3 Impact Avoidance and Minimization

The development plan should concentrate the development area primarily to the center of the lot which will be designed to maintain stormwater on site. Native plants will maintain the screening that a buffer typically provides along with the erosion control. The mitigating measures mentioned in earlier chapters will minimize the impacts of the project to buffers and maintain no-net-loss of wetland functions and values.

The applicant has identified the area that needs invasive species removal and native plant rehabilitation and will systematically remove blackberries and scotch broom while planting native species that if successful would create a much more resilient and better functioning wetland and buffer. The applicant has avoided all of the wetland impacts and will minimize future impacts by limiting access to the area and by thoughtfully controlling invasive species.

The buffer/prairie rehabilition area is also a place that has native prairie outwash soils that are required for several south sound prairie species such as the Taylors checkerspot butterfly, the Mardon skipper and Mazama pocket gopher. Although these species were not found onsite, they could use this area in the future and the plant species that we are installing to enhance the area are known to be utilized during their life cycles.

8.4 Minimization of Water Quality Impacts

Implementing water quality and sedimentation best management practices (BMPs) will act to minimize sedimentation and protect water quality on-site and any bare areas will be planted with a cover crop. Silt fences and straw waddles will be used where necessary. Splash blocks and infiltration galleries and level spreaders will be used to reduce stormwater impacts from the residences. The increase in vegetation from the proposed buffer and prairie rehabilitation plan will provide for increased surface roughness and nutrient uptake, food sources, and erosion protection.

9.0 Buffer and Prairie Invasive Species Removal and Native Plant Rehabilitation Plan

9.1 PUD Requirements

It was determined that in order to meet the second point of the PUD the applicant will rehabilitate the **buffer** of Wetland A and provide a prairie planting to benefit endangered prairie species. This will require rehabilitation of the buffer by removing invasives and replacement with native plants at a density to provide a resilient buffer that will be self-maintaining once established.

To allow the reduction of the standard 150 ft **buffer** to the reduced 110 ft buffer through the PUD process, the applicant needs to go beyond what is typically required for a buffer reduction. The Department of Ecology BAS has guidance for buffers that are not adequately vegetated, or contain non-native species. They mention that it is generally better to improve the vegetation than widen the buffer (ECY, 2005). Typically, with buffers a 1:1 reduction of buffer, to vegetated buffer rehabilitation ratio is required using native plants. In this case we would like to do more than what is typical, as encouraged by the PUD. This project will require 21,445 sq ft of buffer reduction for the common space and back yards of lots. What is proposed amounts to a buffer rehabilitation plan which will provide ~400 percent more area than the 1:1 improvement typically required for a buffer reduction. No-net-loss of wetland functions and values will be maintained and there will be benefits to prairie habitats as well. The project should be educational too.

The area is mapped with Indianola Loamy Sand 0-3% slopes which is a more preferred MPG soil and Norma Silt loam which is less preferred. Both of these soils are habitat indicators for the Mazama pocket gopher and the Indianola soils are also native prairie soils. To mitigate for the buffer reduction, we propose enhancing the area between the development and the wetland using three different restoration activities which will improve wetland and prairie functions which have both been impacted by invasive species. We will use this unique opportunity to develop a successful wetland and prairie restoration. As mentioned in the now implemented Thurston HCP, sites which exhibit resiliency would be preferred and this has a transition from wetland to upland after planting should provide diversity so that it can maintain itself through adverse climatic conditions.

This Rehabilitation Plan was developed by Alex Callender MS, PWS. He has over 21 years of experience creating, installing and monitoring buffer enhancement mitigation and rehabilitation plans.

The buffer and prairie rehabilitation activities are as follows:

- The applicant proposes to have the non-native scotch broom and non-native blackberry removed and replanted with 16,117 sq ft of native prairie species which will provide numerous benefits to the threatened butterflies and become a landscape amenity that connects the community with the presence of South Sound Prairie.

- 7,035 sq ft of offsite upland area will receive a one-time treatment to remove invasive species. This area is important because it is adjacent to the wetland and is dominated by Himalayan blackberry and scotch broom and left alone, this area would be a source of invasive species recruitment that could impact the new plantings we are proposing for the subject property.

  After treatment the area will be planted with native Garry oaks, Red twig dogwood, and snowberry. These plants are relatively aggressive native plants that should outcompete the blackberries and scotch broom and prevent a resurgence of these species.

  Three Wood duck boxes, three bat boxes and two Martin houses will be installed in the trees at the edge of Wetland A.

- The remaining 68,384 sq ft area between the northern property boundary and the northern edge of the prairie restoration area will have non-native plants removed and native shrubs and trees planted to maintain the screening between the wetland and the development.
- Outside of the main rehabilitation areas will be a 28,380 sq ft of intermediate buffer of ornamental landscaping that can be utilized as buffer as well. This area encompasses a passive foot path with viewing platforms and interpretive signs..

The applicant will combine the mitigating measures found in Table 16.28.170(5). and the qualifications found in TMC Table 16.28.170(2):

As directed, the applicant will do the following in accordance with the objective of meeting the intent of the PUD special

- Lights will be directed away from the wetland and buffers.
- Pesticide limited within 150 ft of wetland.
- Fence off the wetland
- Runoff will be infiltrated onsite to keep from dewatering the wetland
- Use LID infiltration on downspouts.
- 91,555 sq ft of dense native vegetation will be planted in buffer between the development and the wetland area which is approximately a 4 to 1 rehabilitation area to impact area ratio which is well above the typical 1: 1 ratio required in most cases.
- Remove invasive species in the rehabilitation area
- Other mitigation measures from this table will be implemented as applicable.

- **Table 16.28.170(5): Measures to Minimize Impacts to Wetlands**

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Lights	Direct lights away from wetland	Parking lots, warehouses, manufacturing, residential
Noise	Locate activity that generates noise away from wetland	Manufacturing, residential
Toxic runoff (1)	Route all new runoff away from wetland while ensuring that wetland is not dewatered Establish covenants limiting use of pesticides within 150 ft of wetland Apply integrated pest management	Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, landscaping
Stormwater runoff	Retrofit stormwater detention and treatment for roads and existing adjacent development Prevent channelized flow from lawns that directly enters the buffer	Parking lots, roads, manufacturing, residential areas, commercial, landscaping

- **Table 16.28.170(5): Measures to Minimize Impacts to Wetlands**

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Change in water regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns	Impermeable surfaces, lawns, tilling
Pets and human disturbance	Use privacy fencing Plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion Place wetland and its buffer in a separate tract	Residential areas
Dust	Utilize best management practices to control dust	Tilled fields

Table 16.28.170(5) Explanatory Notes:

(1) These examples are not necessarily adequate to meet the rules for minimizing toxic runoff if threatened or endangered species are present at the site.

9.2 Integrated Pest Management

The applicant will use the integrated pest management plan (IPM) methods and utilize management recommendations from the Thurston County IPM Website The primary objectives of the planting plan is to provide shrub species that will shade and outcompete the two main species which require control; Himalayan blackberry, scotch broom, English holly and the Single seeded hawthorne. The applicant will use manual or mechanical means as the preferred method for removal of the Himalayan and Evergreen blackberries on site. If these methods are found to be ineffective or infeasible, Other more aggressive methods will be considered to include use of popular effective herbicides consistent with the recommended label application rates and conducted during the dry season by licensed applicators. Other species which may require control from time to time will use recommendations from the Thurston County Noxious Weed website and the Homeowner IPM recommendations adopted for this particular purpose.

9.3 Functional Analysis

The following planting plan to rehabilitate the buffer will maintain wetland functions and improve the overall landscape as well by:

- providing increase roughness
- increasing nutrient uptake of stormwater
- increasing site plant diversity
- Provide screening for wildlife,
- Provide shade for water quality and habitat,

- Produce food for wildlife and structure.
- Provide nectar for threatened butterflies

Currently, the area that will be impacted is field with invasive Himalayan blackberry and Scotch broom. There is a lack of prairie and tree and shrub vegetation and the screening that it provides. This plan will provide a properly rehabilitated buffer in the area, where it matters most, between the wetland and the residences. The planting plan will provide species diversity and structure as well as roughness.

Areas will be planted with buffer plants, which will not only provide benefits already mentioned, but will also become a landscape amenity that combines the practical plantings with aesthetic attributes of our native flora.

The following analysis uses the qualitative scoring values similar to the values developed in the Wetland Rating System for Western Washington (Hruby, 2014). The best available science has found that the resolution of value can only be rated using a qualitative system and maintain a rapid assessment of less than one day. Therefore, we have examined common buffer functions for wetland protection and other habitats to show the overall expected lift by the rehabilitation plan. The functions we are studying were found in the latest buffer BAS (Hruby, 2013)

TABLE 3 – Buffer Functions Comparison Before and After Rehabilitation

Buffer Perf criteria	**Other Habitats (Bat, Martin and Wood duck habitat**	**Screening**	**Nutrient uptake**	**Invasive Species**	**Structure**	**Surface roughness**	**Temperature attenuation**	**Diversity**
Before mitigating measures	Low	Medium	Medium	High	Low	Medium	Medium	Low
After mitigating measures	Medium	High	Medium	Low	High	Medium	Medium	Medium

The rehabilitation measures once applied should provide new habitat for birds, bats and macroinvertabrates and restore habitat for the Taylor's checkerspot and Mardon skipper.

9.4 Planting Plan

To provide for a higher functioning a wetland and prairie, a wetland invasive removal plan was developed to make the remaining buffer and wetland more resilient and effective. Figure 6 illustrates

the placement area which was created to maximize plant performance by placing species in a position in the landscape where they will thrive and provide the most benefit to the system.

Trees and shrubs will be planted at grade in holes 2-3 times the width of the container or root ball. Mulch will be applied around each tree 2-4 inches deep in a three-foot diameter around the tree with an edge to retain water. Containerized rootbound trees will be cut with sharp shears on the bottom in an x pattern to promote root growth. Four cuts will be made vertically to allow roots to spread. Trees and shrubs will be thoroughly watered after installation.

Table 4 – Clear, Plant, and Leave Area #1 (7,035 sq ft)

Common Name	Scientific Name	Size	Spacing	Quantity	Cost ea.	Total
Oregon white Oak	*Quercus garryana*	1 Gallon	15 ft O.C.	4	$10.00	$40.00
Snowberry	*Symphoricarpos alba*	1 Gallon	5 ft O.C.	60	$10.00	$600.00
Pacific willow	*Salix lasiandra*	1 Gallon	8 ft oc	20	$10.00	$200.00
Red osier dogwood	*Cornus sericea*	1 Gal	8ftnoc	20	$10.00	200.00
Total				**104**		**$1040.00**

Table 5 --Prairie Restoration (16,117 sq ft)

Common Name	Scientific Name	Size	Spacing	Quantity	Cost ea.	Total
Common camas	*Quamash cammassia*	1 Gallon	3 ft O.C.	115	$3.00	$345.00
Buttercup	*ranunculus occidentalis*	1 Gallon	3 ft O.C.	20	$10.00	$200.00
Large-leaved lupine	*Lupinus polyphyllus*	1 Gallon	3 ft O.C.	25	$10.00	$250.00
Common yarrow	*Achillea millefolium*	1 gallon	5 ft oc	20	$10.00	$200.00
Prairie Seed mix to be developed				1 pound		tbd
Total				**180**		**$995.00**

Table 6 – Buffer Rehabilitation Area (68,384 sq ft)

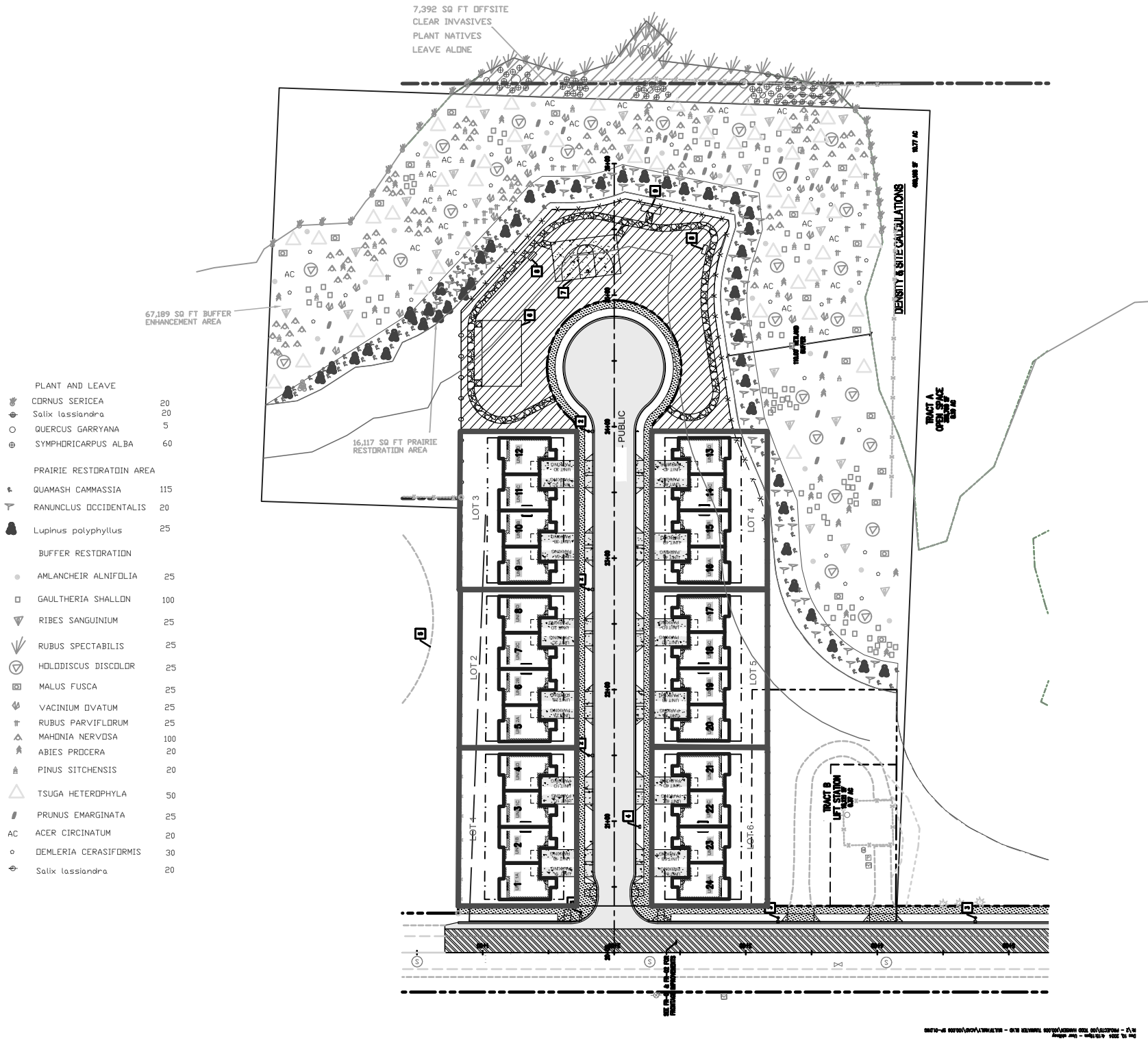
Common Name	Scientific Name	Size	Spacing	Quantity	Cost ea.	Total
Serviceberry	*Almlanchier alnifolia*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Salal	*Gaultheria shallon*	1 Gallon	5 ft O.C.	100	$10.00	$1,000.00
Oregon grape	*Mahonia nervosa*	1 Gallon	5 ft O.C.	100	$3.00	$300.00
Red flowering currant	*Ribes sanguineum*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Salmonberry	*Rubus spectablisi*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Oceanspray	*Holodiscus discolor*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Pacific crabapple	*Malus fusca*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Evergreen huckleberry	*Vaccinium ovatum*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Thimbleberry	*Rubus parviflorum*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Red twig dogwood	*Cornus sericea*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Noble fir	*Abies procera*	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Sitka spruce	Pinus sitchensis	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Western hemlock	Tsuga Heterophylla	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Bitter cherry	Prunus emarginata	1 Gallon	15 ft O.C.	25	$10.00	$250.00
Vine maple	Acer cercinatum	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Osoberry	Oemleria cerasiformis	1 Gallon	15 ft O.C.	30	$10.00	$300.00
Total				**535**		**$4,650.00**

Table 7- Total Costs

Labor	100/hour	$6,500.00
Mulch	$100/5 yards	$200.00
Monitoring w/report	200.00/yr.	$2,000.00

Plants and Materials		$6,685.00
Total		**$13,385.00**

*=Not included in Costs



PROJECT NAME: TENINO LAND CO MULTIFAMILY
PROJECT #
PARCEL # 79300001100 / 79300001200
ADDRESS - XXXX TUMWATER, WA 98501

LAND SERVICES NORTHWEST
120 STATE AVE NE #190
OLYMPIA, WA 98501
360-481-4208

Figure 6
SITE RESTORATION
PLANTING PLAN
(NOT A SURVEY)

Scale: 1" = 100'

9.5 Monitoring Plan

The planting plan will be monitored for 10 years following the as – built (Year 0). Monitoring of the performance standards will be provided each spring, shortly after leafing out, to aid in plant identification. A report that communicates the findings will be provided to the City staff a month following the monitoring.

The report will contain pictures from photo points established during the as built to allow the City personnel to evaluate site conditions and performance standards. The photos in the report will be taken in four cardinal directions, unless there is a direction that provides a better view. Four photo points that will be established during the as-built (Year 0). Management of performance deficiencies or maintenance will occur during the spring or fall season following monitoring and a summary of management actions will be included in the following year's monitoring report to track effectiveness and adaptively manage the site.

9.6 Performance Standards

The performance standards are as follows:

Year 0 an inventory of plants and photo points will be established for monitoring during the monitoring period within 1 month of the installation.

Year 1-2 will have 100% survival of installed plants. Noxious weeds will be less than 10% aerial coverage.

Volunteer trees or shrubs may account for up to 10 percent of the overall count of surviving plants. Dead plants will be replaced in kind unless a volunteer is a replacement.

Year 2 -10 will have a survival rate of 80 percent of the original count. Volunteers can account for 10 percent of the total if present. Noxious weeds such as Himalayan blackberry, scotch broom, Reed canary grass, and other invasives will not have more than 10 percent aerial coverage of the planting area.

If the area meets the survival and aerial coverage performance measure in year five. The applicant can be given approval to end monitoring.

Japanese knotweed, yellow flag iris, or hogweed will have a zero percent tolerance and be removed or sprayed using an appropriate herbicide approved for aquatic use by a licensed applicator.

The aerial coverage will be 70% by year 5, 80% by year seven and 90% by year 10. If these coverage measures are not met, and it does not appear that they will meet performance measures because of neglect, more plants may be planted to make up the difference.

Failure to meet standards by year 10 will require an additional year of monitoring.

9.7 Contingency Plans

If the site does not meet performance standards. Contingencies may be developed to adapt to the site-specific conditions. Contingencies may include:

- Increased watering

- Mulching
- Integrated Pest Management
- Microtopography changes
- Species substitution
- Herbivory protection
- Bark wrap

The area is frequented by deer and the choice of plants were chosen to avoid herbivory issues, but exclusion fencing may be necessary until the plants reach maturity. This is not expected to be needed to be a permanent fixture if required. Any contingencies will be developed in conjunction with landscapers, nursery staff, and other experts. The city would be notified in advance of the contingency plans. No contingencies will be applied without city consent.

9.6 Performance Bonds and Demonstration of Competence.

A demonstration of financial resources, administrative, supervisory, and technical competence and scientific expertise of sufficient standing to successfully execute the compensation project shall be provided. A compensation project manager shall be named and the qualifications of each team member involved in preparing the rehabilitation plan and implementing and supervising the project shall be provided, including educational background and areas of expertise, training and experience with comparable projects. In addition, bonds ensuring the fulfillment of the compensation project, monitoring program, and any contingency measure shall be posted pursuant to TMC 16.28.210 in the amount of one hundred twenty percent of the expected cost of compensation.

The applicant will provide a bond for the fullfillment, monitoring program, contingency measures in the amount of one hundred twenty percent of the expected cost which is given in this report.

The funds are to comply with the surety provisions in Tumwater code.

10.0 SUMMARY AND CONCLUSIONS

The project proposes a 6 lot quad unit multifamily subdivision with roads, sewer, water, utilities, parking and waste facilities.

Two wetlands were identified within 315 feet of the subject property.

Wetland A is a Category II wetland maintaining a 150-foot-high intensity land use buffer. This buffer can be reduced to the 110-foot moderate intensity land use buffer using the mitigation measures in the Table 16.28.170(5): Measures to Minimize Impacts to Wetlands.

Wetland B is a Category III 150-foot-high intensity land use buffer. This buffer can be reduced to the 110-foot moderate intensity land use buffer using the mitigation measures in the Table 16.28.170(5).

A wetland and prairie rehabilitation that will go beyond the requirements for wetland buffer impacts due to the project has been provided to meet the conditions for a PUD project. The project will create a new prairie and wetland buffer that will be educational and improve overall ecological functions in the

area while providing a unique opportunity to restore south sound prairie for the endangered Taylor checkerspot butterfly and Mardon skipper butterfly. The plantings will improve food cover, structure and diversity.

No impacts to wetlands is proposed, and the applicant will provide a robust rehabilitation with wetland and prairie enhancement in order to improve the habitat and wetland functions. Tumwater will soon have a property that can sustainably exist in concert with the nearby critical areas, without impacting wetland functions to the benefit of the citizens of the City of Tumwater.

11.0 LIMITATIONS

This report was created with care and best professional judgment using the current best available science, but the report is subject to interpretation by local state and federal regulators who have the final regulatory authority on wetlands and other boundary determinations. No outcomes are warranted by this report.

12.0 REFERENCE

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Washington State Department of Fish and Wildlife. 1999. Species of concern: State candidate species. WDFW. Olympia, WA.

Appendix A – Photographs

LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

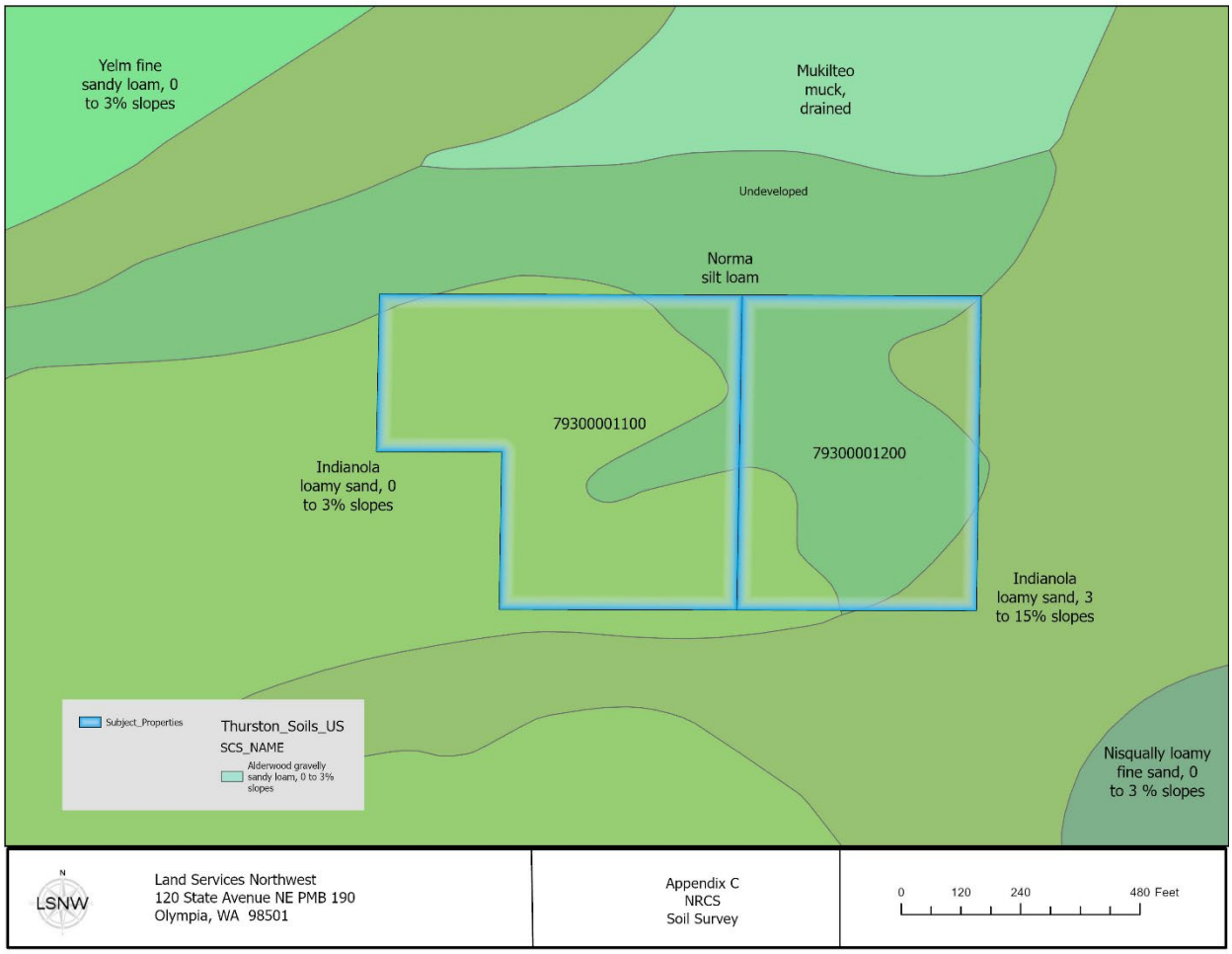
LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
Oswet a
934 Tumwater Blvd SE, Olympia, WA 98501

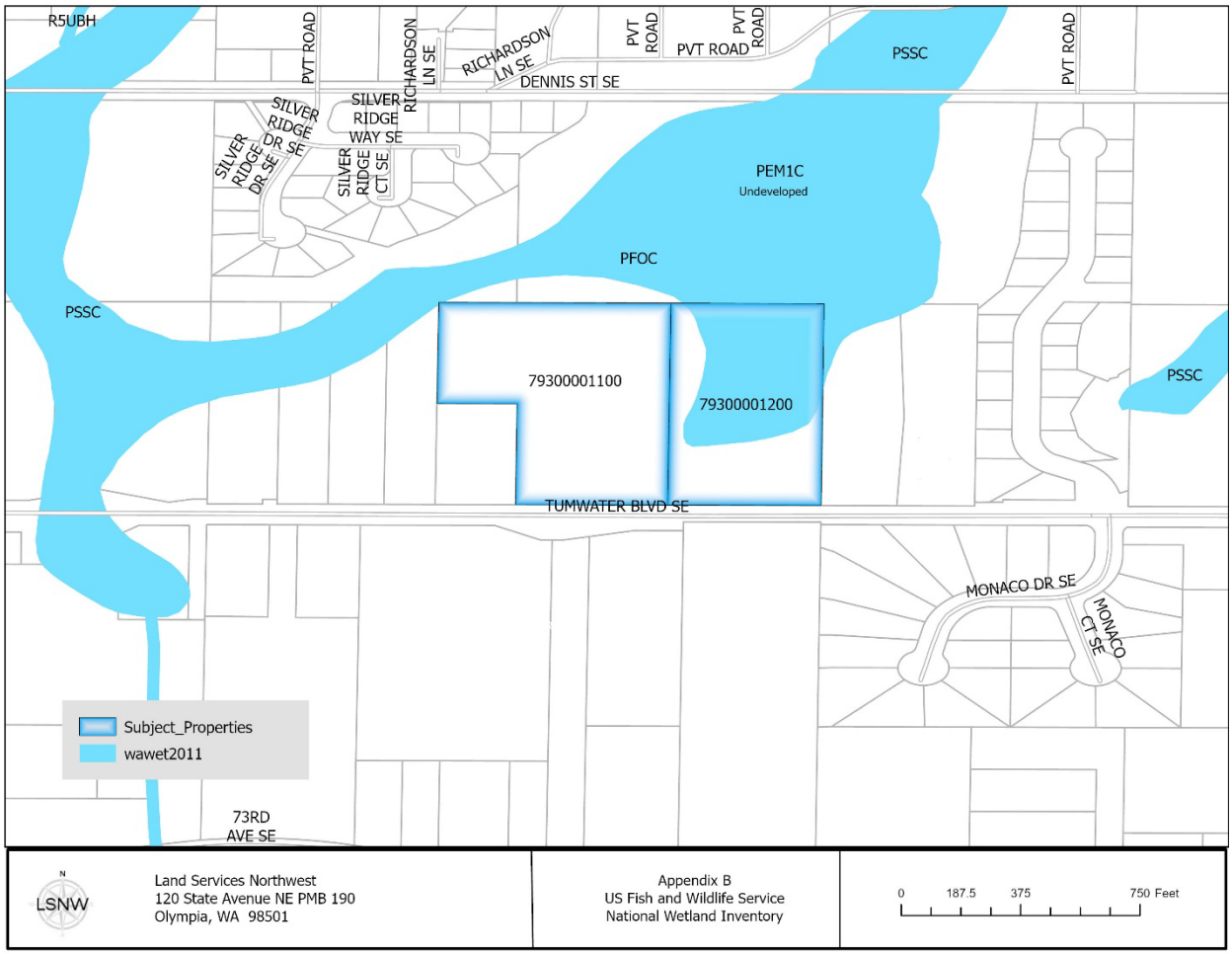
LSNWw5
Project: Tenino LAND
Tp1
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
Tp2
934 Tumwater Blvd SE, Olympia, WA 98501

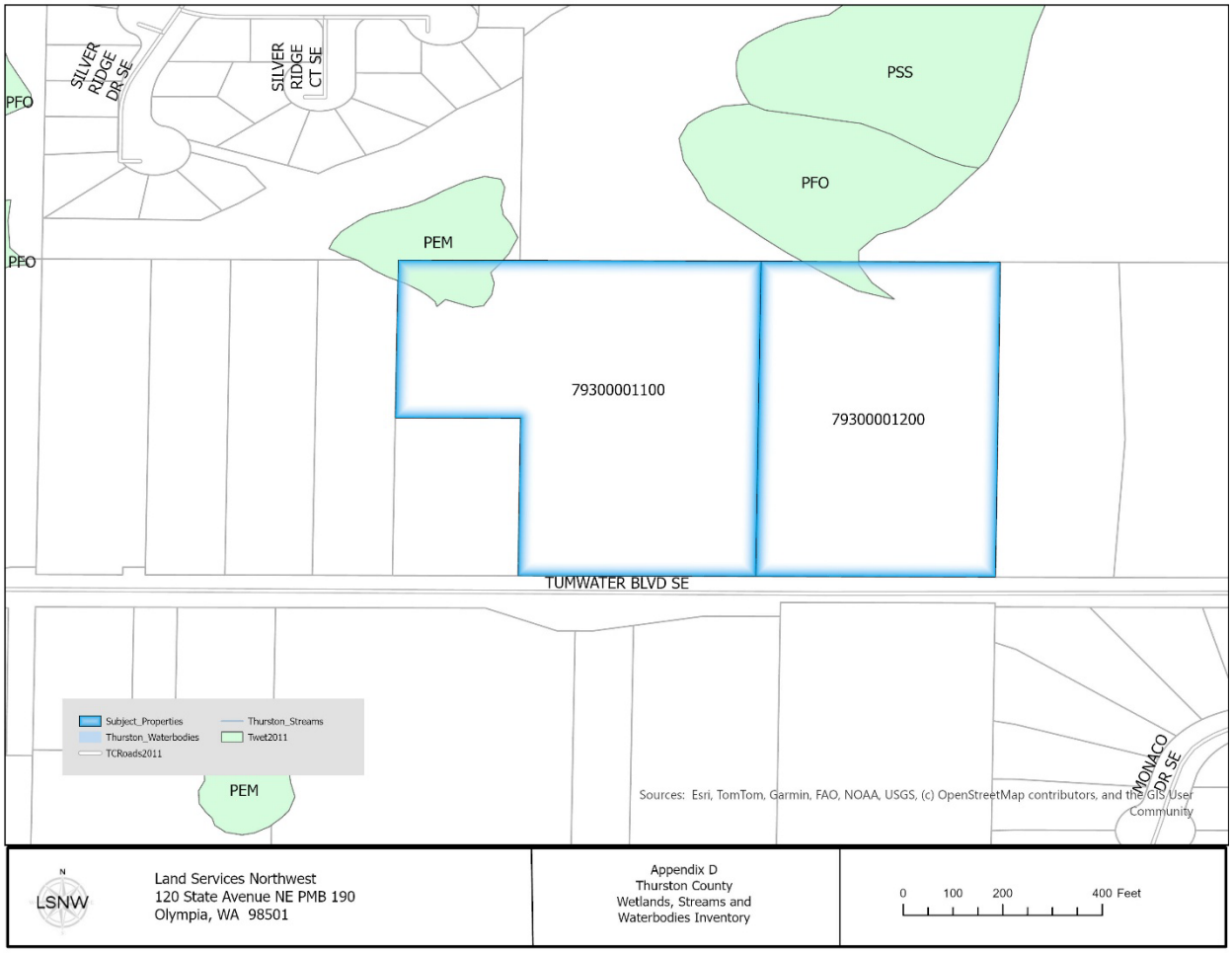
Appendix B - U.S. Fish and Wildlife Service NWI MAP



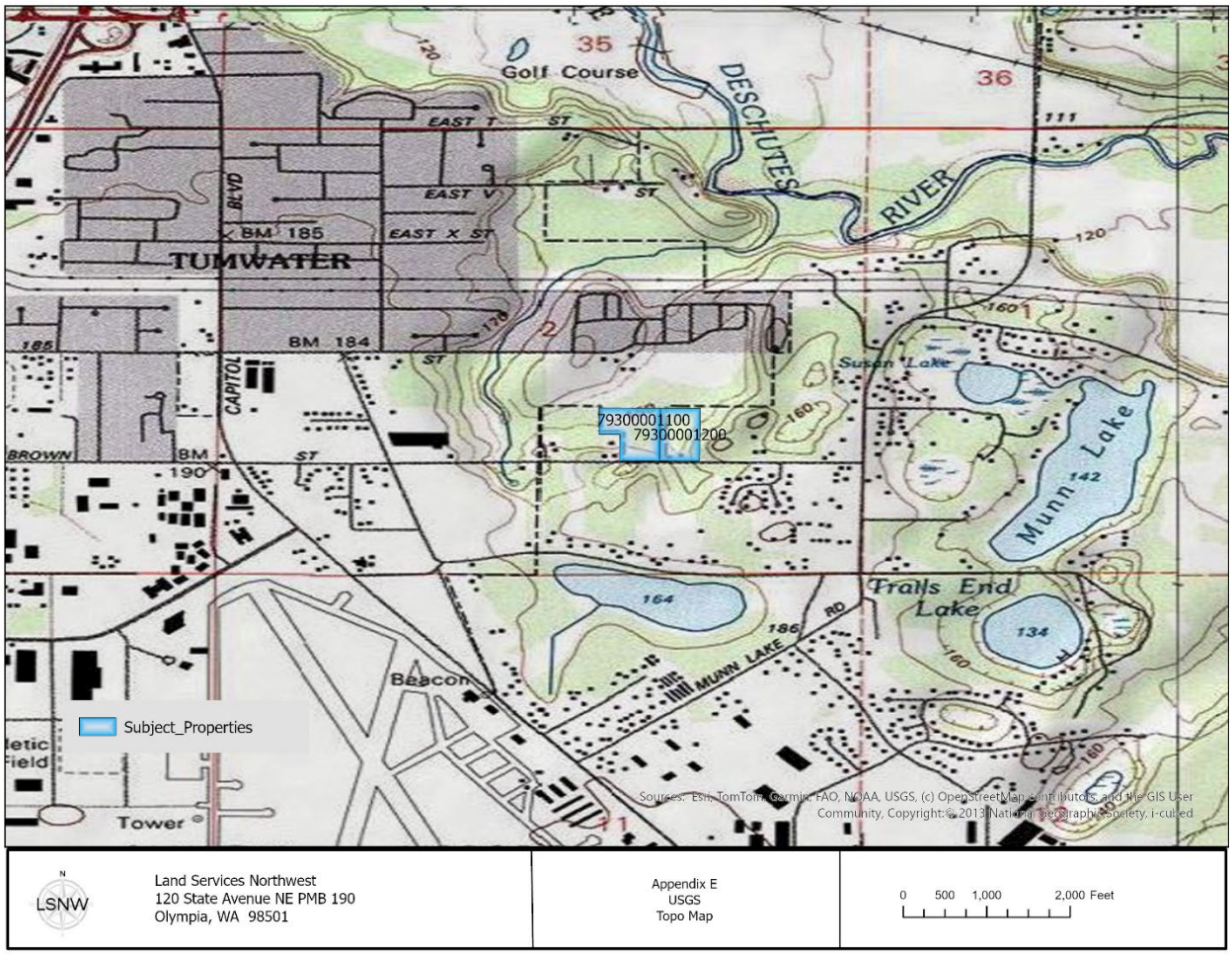
Appendix C - NRCS Soil Survey Map for Thurston County



Appendix D - Thurston County Stream and Wetland inventory

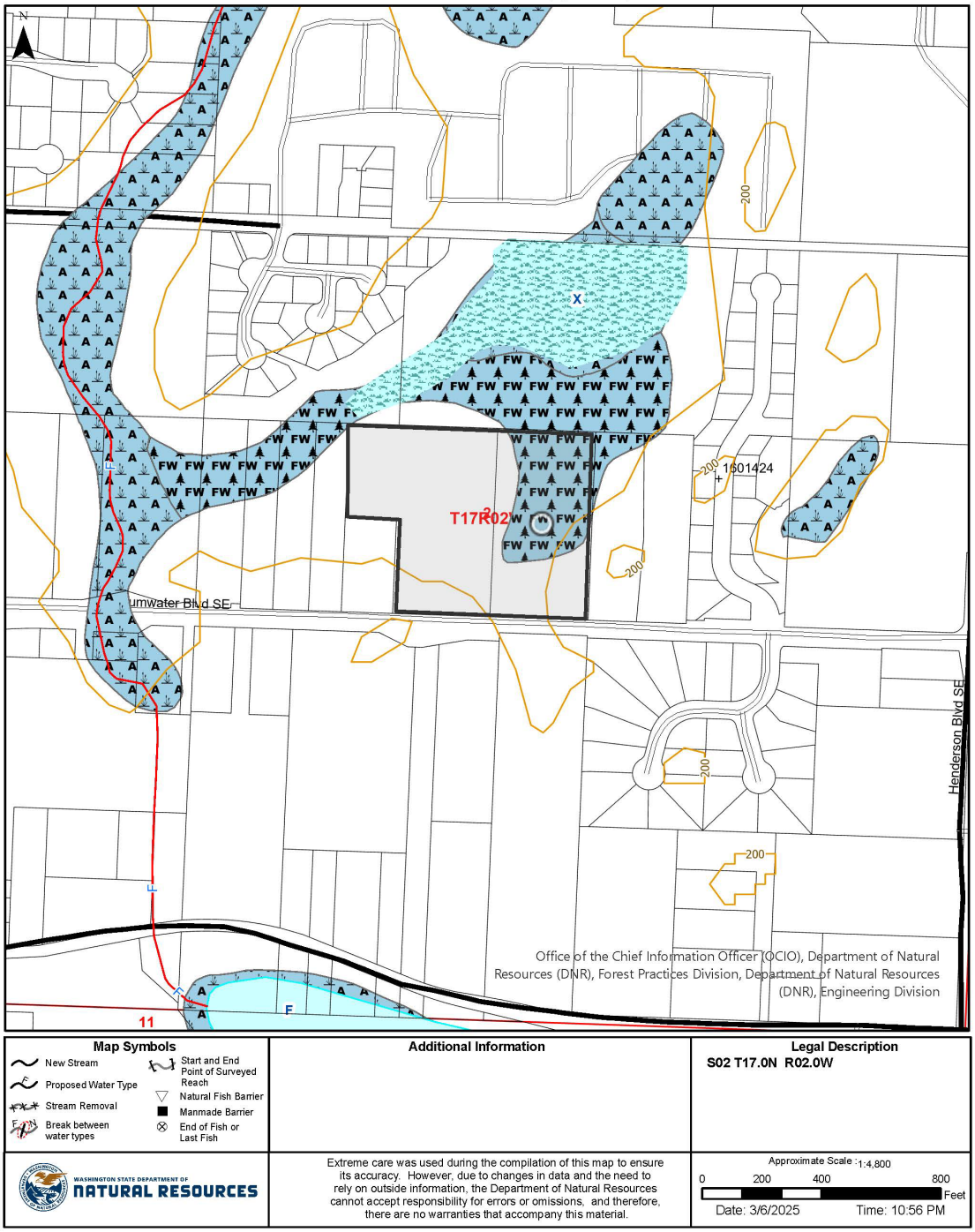


Appendix E – USGS 7.5 Minute Topographic Map



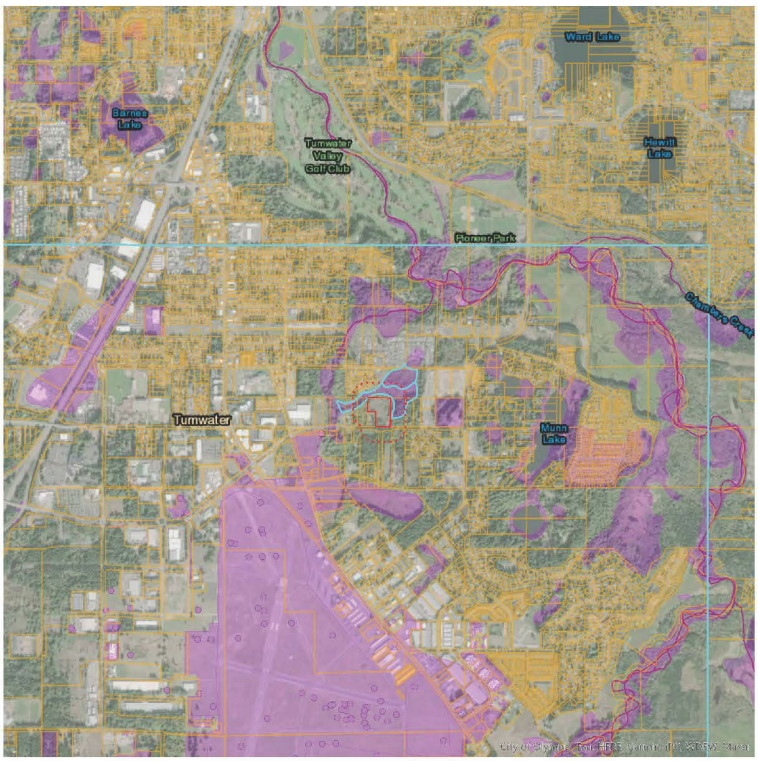
Appendix F – WADNR Forest Practices Stream Type Map

Forest Practices Water Type Map



Appendix G – WDFW Priority Habitats and Species Map and Salmonscape Map

Priority Habitats and Species on the Web



Buffer radius: 330 Feet

Report Date: 05/13/2024, Parcel ID: 79300001100

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Freshwater Emergent Wetland	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No
Big brown bat			Yes
myotis spp			Yes
Townsend's Big-eared Bat		Candidate	Yes

PHS Species/Habitats Details:

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

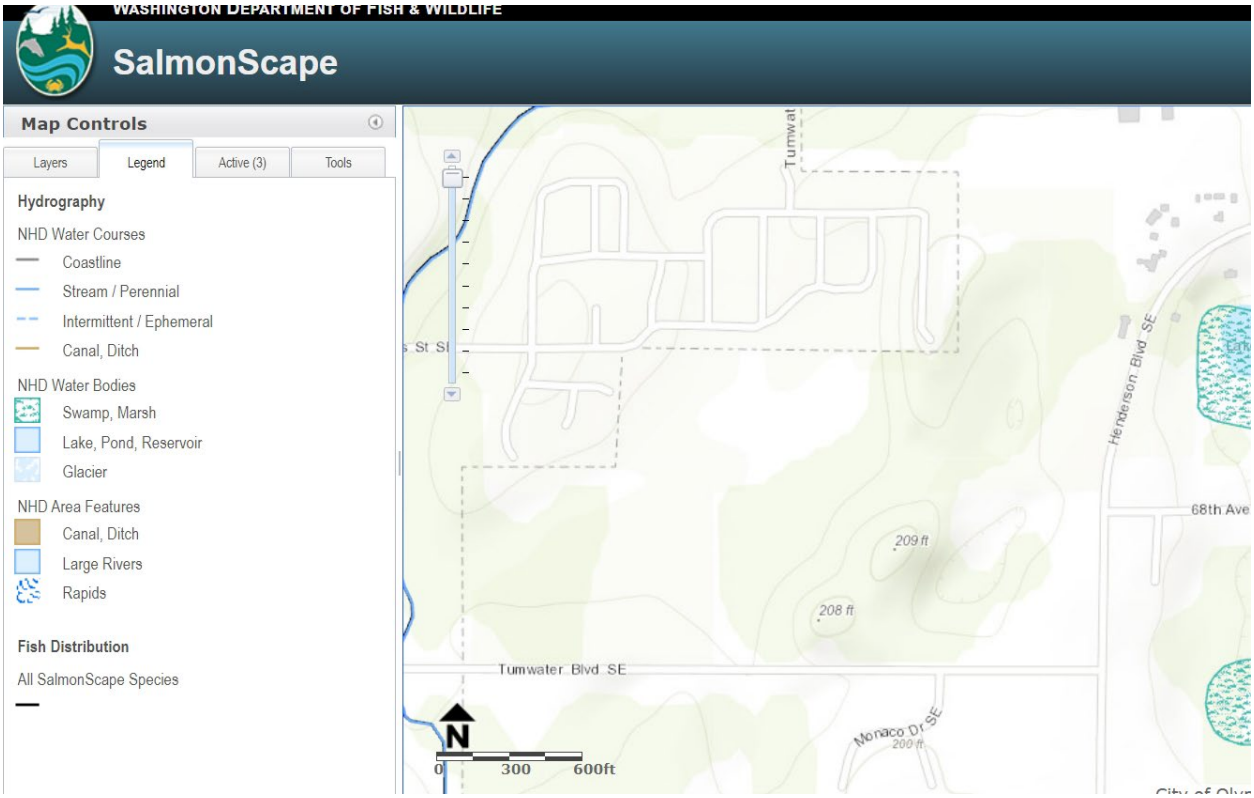
Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PFOC
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing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

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

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

Townsend's Big-eared Bat	
Scientific Name	*Corynorhinus townsendii*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

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


WASHINGTON DEPARTMENT OF FISH & WILDLIFE
SalmonScape
Map Controls
Layers
Legend
Active (3)
Tools
Hydrography
NHD Water Courses
Coastline
Stream / Perennial
Intermittent / Ephemeral
Canal, Ditch
NHD Water Bodies
Swamp, Marsh
Lake, Pond, Reservoir
Glacier
NHD Area Features
Canal, Ditch
Large Rivers
Rapids
Fish Distribution
All SalmonScape Species
Henderson Blvd SE
68th Ave
209 ft
208 ft
Tumwater Blvd SE
Monaco Dr SE
200 ft
N
0
300
600ft

Appendix H - USACE WMVC Soil Data Sheets

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP1
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No	

Is the Sampled Area within a Wetland? **Yes x No**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	25	Y	FAC
2.			
3.			
4.			
	25	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. *Rubus spectabilis*	10	Y	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	

Herb Stratum (Plot size:)			
1. *Lysichiton americanus*	25	Y	OBL
2. *Athyrium cyclosorum*	20	Y	FAC
3. *Equisetum arvense*	3	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	47	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

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 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes x No**

Remarks: 100% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP1

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR2/1	100					Sandy loam	
16-18	10YR4/2	85	10YR4/6	15			Sandy 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)
- x 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** x **No** ___

Remarks: Hydric soil F3 indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- x 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 x No ___ Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks: Hydro at surface.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 8.16.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP1A
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No	

Is the Sampled Area within a Wetland? Yes x No

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	35	Y	FAC
2. *Alnus rubra*	55	Y	FAC
3.			
4.			
	90	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. *Rubus spectabilis*	25	Y	FAC
2.			
3.			
4.			
5.			
	25	= Total Cover	

Herb Stratum (Plot size:)			
1. *Lysichiton americanus*	20	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

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 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No

Remarks: Greater than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP1A

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
0-2	10YR2/1	100						Silt loam
2-20	10YR6/2	90	10YR6/8	10				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)
- x 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** x **No** ___

Remarks: Depleted matrix present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X 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)
- x 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)
- X 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 X No ___ Depth (inches): _____

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks: Water-stained leaves present. Hydro at surface

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 8.16.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP1B
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	___	No	x
Hydric Soil Present?	Yes	___	No	x
Wetland Hydrology Present?	Yes	___	No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	IndicYator Status
1. *Acer circinatum*	35	Y	FAC
2. *Thuja plicata*	25	Y	FAC
3.			
4.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___	= Total Cover	

Herb Stratum (Plot size: ___)			
1. *Gaultheria shallon*	35	Y	FACU
2. *Rubus ursinus*	25	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___	= Total Cover	

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	60	x 3 =	180
FACU species	60	x 4 =	240
UPL species		x 5 =	
Column Totals:	120 (A)		420 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks: Less than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP1B

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR3/2	100						Fine sand
4-14	10YR4/3	100						Fine sand
14-18	10YR4/2	100						Fine sand

[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** x

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks: No wetland hydrology indicators present.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP2
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	___	No	x
Hydric Soil Present?	Yes	___	No	x
Wetland Hydrology Present?	Yes	___	No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga heterophylla*	95	Y	FACU
2. *Acer circinatum*	5	N	FAC
3.			
4.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___	= Total Cover	

Herb Stratum (Plot size: ___)			
1. *Polystichum munitum*	10	Y	FACU
2. *Maianthemum dilatatum*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	

Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___	= Total Cover	

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks: Less than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP2

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	Organic	100						
2-16	10YR4/3	100					Sandy loam	
16-18	10YR4/2	100					Sandy 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** x

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks: No wetland hydrology indicators present.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP3
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes		No	x
Wetland Hydrology Present?	Yes		No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus rubra*	75	Y	FAC
2.			
3.			
4.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size:)			
1. *Urtica dioica*	15	Y	FAC
2. *Equisetum arvense*	10	Y	FAC
3. *Galium aparine*	5	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (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 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks: Greater than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP3

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Sandy loam	
16-18	10YR4/2	100					Sandy 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** x

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks: No wetland hydrology indicators present.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP4
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No	

Is the Sampled Area within a Wetland? **Yes x No**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size:)			
1. *Rubus spectabilis*	25	Y	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size:)			
1. *Athyrium cyclosorum*	45	Y	FAC
2. *Lysichiton americanus*	35	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes x No**

Remarks: 100% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP4

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	10YR2/1	100					Sandy loam	
14-18	10YR4/2	90	10YR4/6	10			Sandy 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)
- x 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** x **No** ___

Remarks: Hydric soil F3 indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- x 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 x No ___ Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

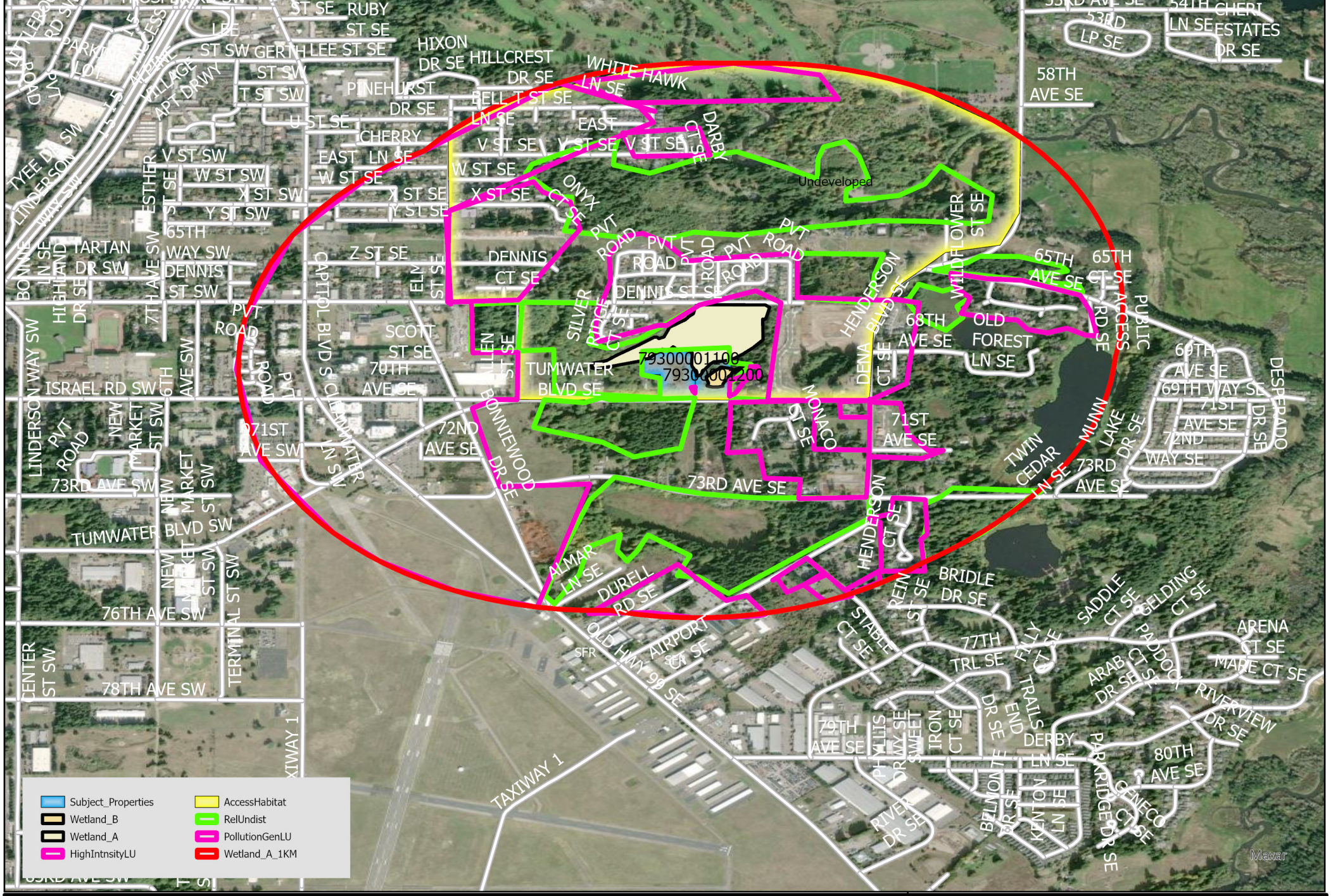
Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks: Hydro at surface.

Appendix I - ECY Wetland Rating Forms for Western Washington



Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

1KM Land Use Intensity Map
Wetland A

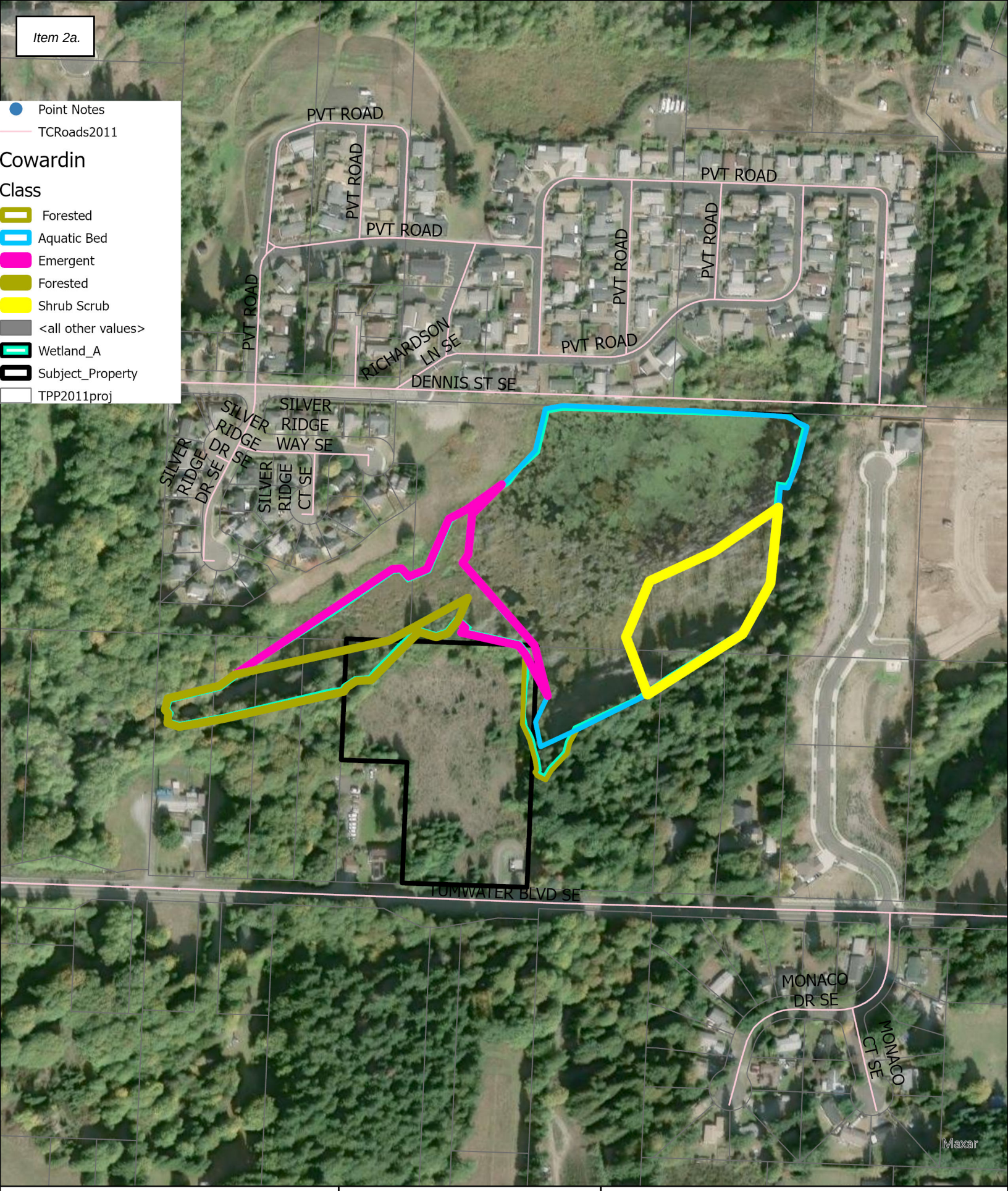
0 500 1,000 2,000 Feet

Item 2a.

Land Use Calculations

	ACRES	%	
1KM	874		
Wetland A	2.19		
1KM-Wetland A	871.81	100	
High Intensity	36	0.041293	4.12934
Relatively Undisturbed	415	0.476021	47.60212
Low Medium Use	423	0.485197	48.51975

Accessible Habitat	848		
Wetland A	2.19	0.002583	0.258255
Accessible-WetA	845.81	0.970177	97.0177
RU	135	0.154462	15.44622
Low/Medium LU	677	0.776545	77.65453
High Intensity	36	0.041293	4.12934



Land Services NW
120 State Avenue PMB190
Olympia, WA 98501
360-701-4208

N
LSNW

Cowardin Classification Map

0 155 310 620 US Feet

Land Services Northwest
State Avenue NE PMB 190
mpia, WA 98501
481-4208

N
LSNW

Hydroperiod Classification Map

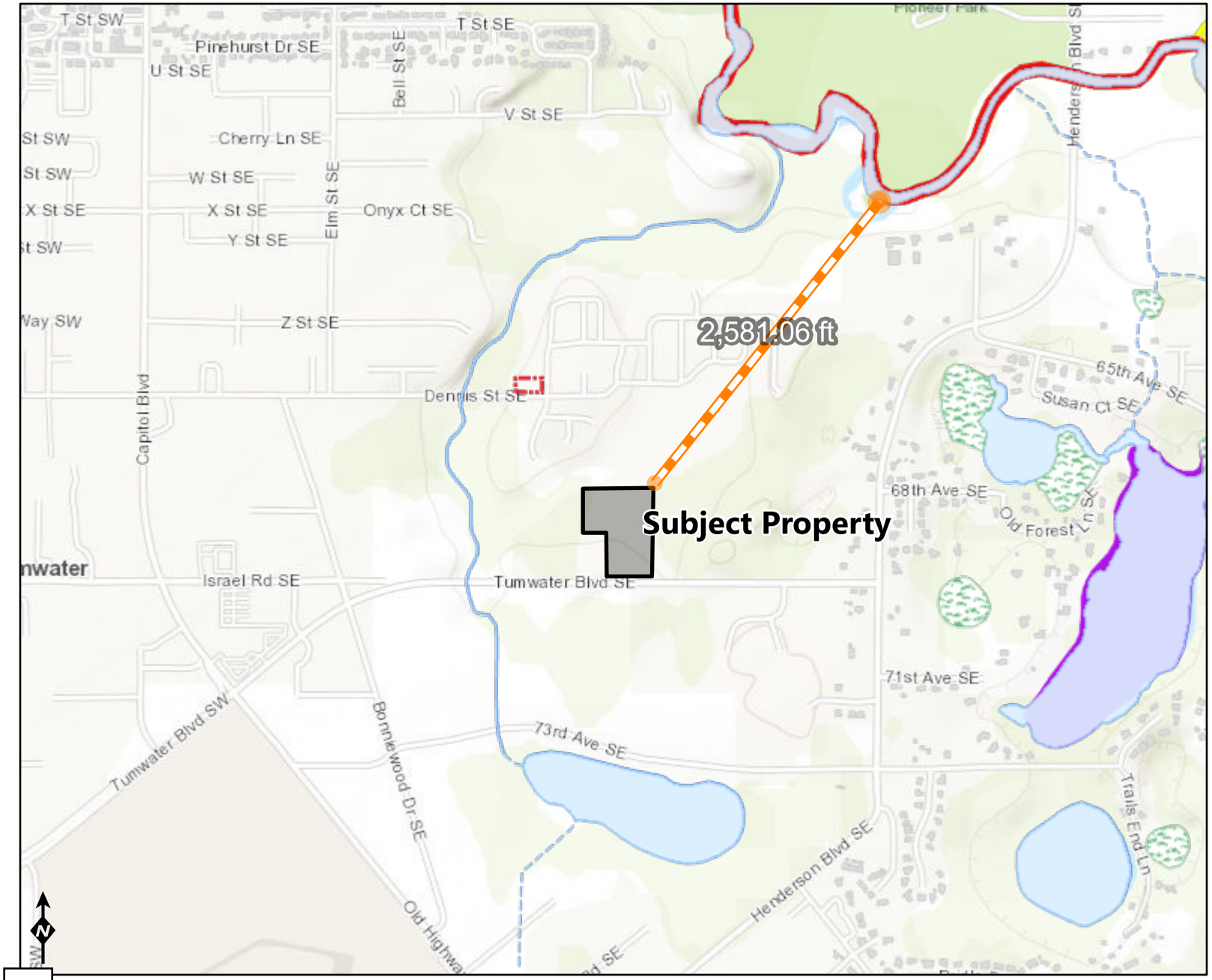
0 50 100 200 Feet

TENINO LAND CO

Item 2a.

May 13, 2024

303d Water Quality Atlas Map



Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

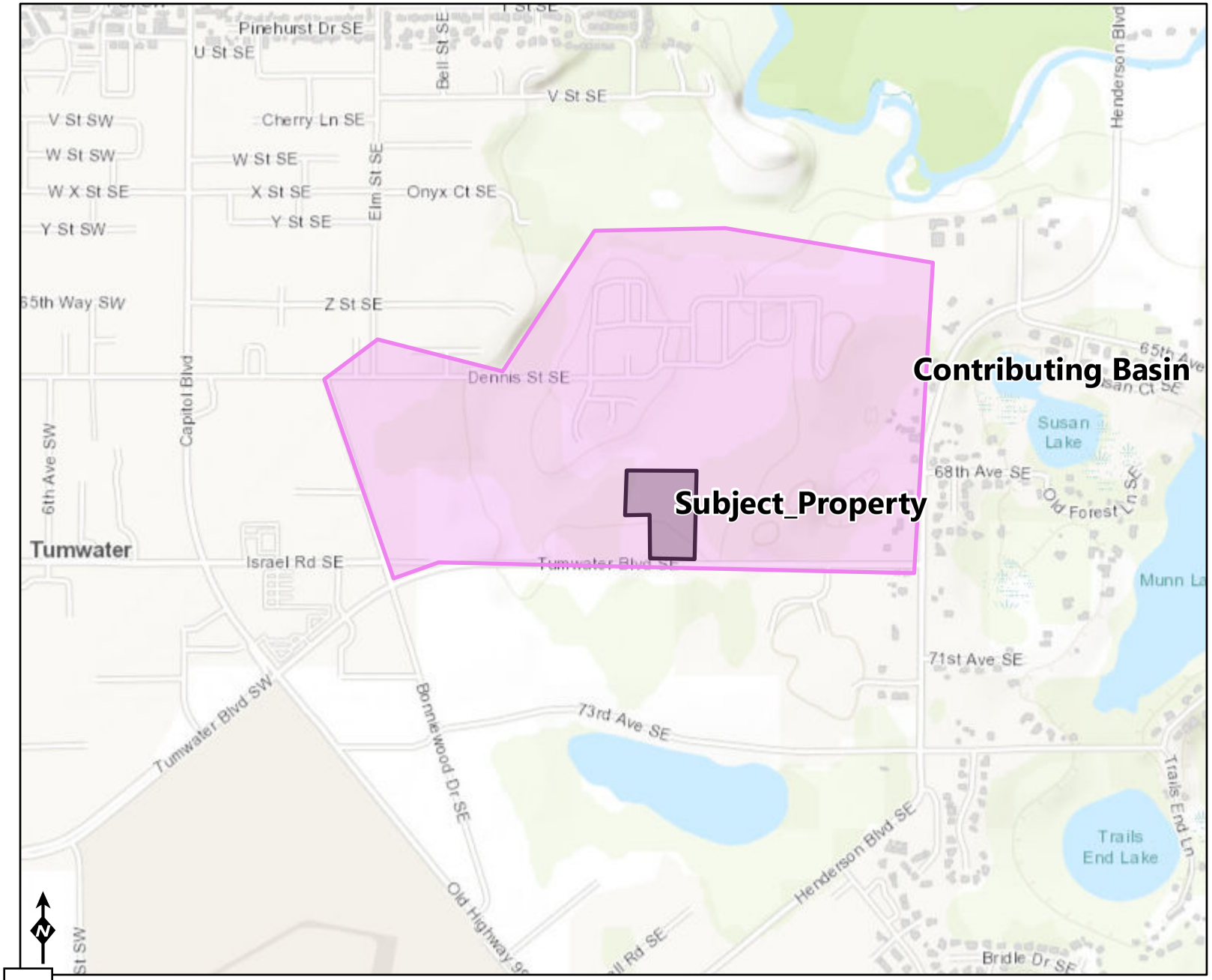
Cities
- City limits

Parcels
- Parcel boundary

Esri Community Maps Contributors, City of Olympia, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA,

Item 2a.

Contributing Basin



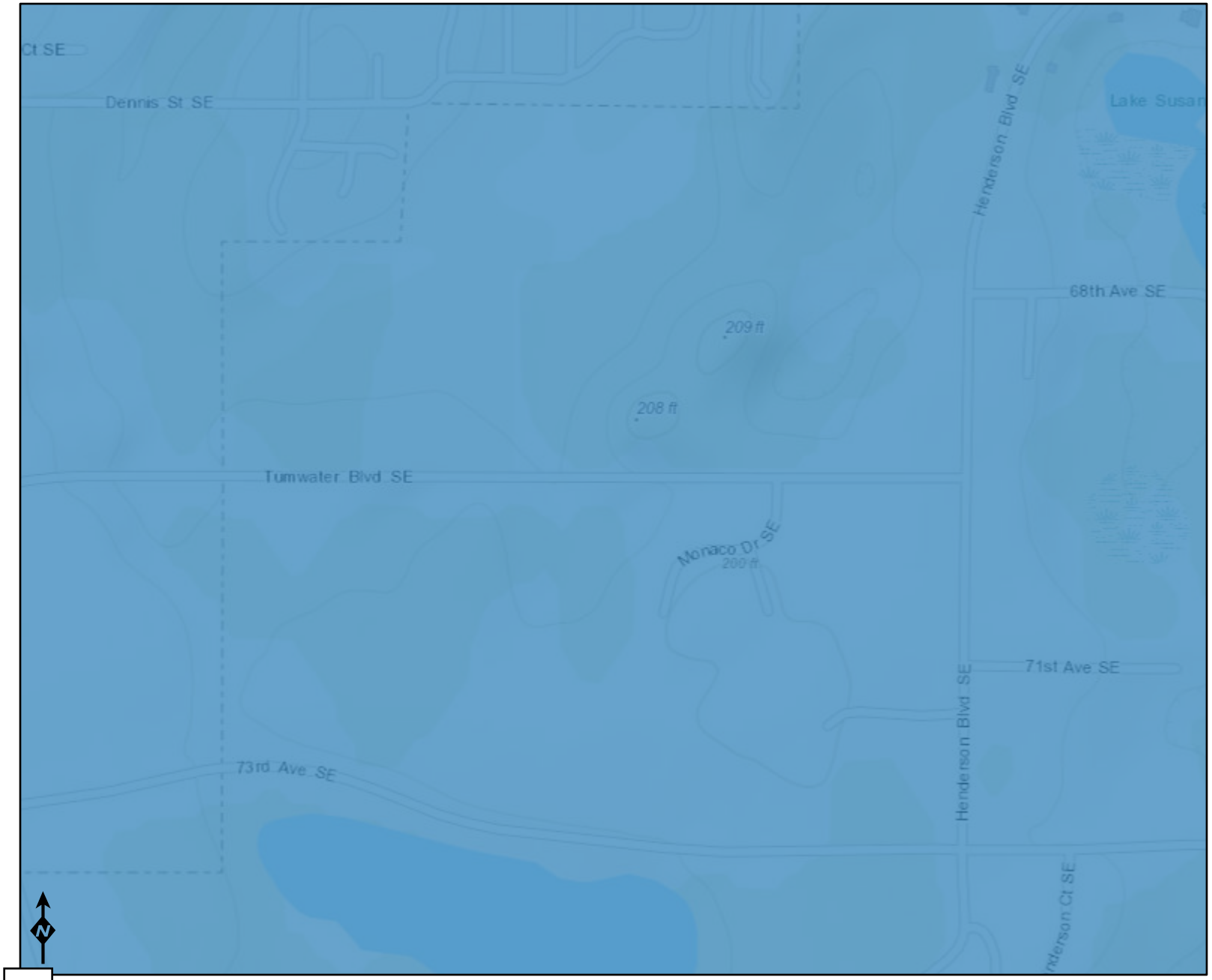
Parcels
Parcel boundary

Subbasins (12 digit HUCs)
HUC boundary

Miles
0 0.1 0.2 0.4

Esri Community Maps Contributors, City of Olympia, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA,

TMDL Projects



WQ Improvement Projects

- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Miles
0 0.05 0.1 0.2

Esri, NASA, NGA, USGS, FEMA
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Tumwater Boulevard Date of site visit: 5.8.24

Rated by Alex Callender Trained by Ecology? x Yes ___No Date of training 12.13

HGM Class used for rating Depression Wetland has multiple HGM classes? ___Y x ___N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map 2024 Esri Aerial

OVERALL WETLAND CATEGORY 11___ (based on functions x__ or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

x_____**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	7	20

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	x

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	Cowardin
Hydroperiods	D 1.4, H 1.2	Hydro
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	Outlet
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	150 ft
Map of the contributing basin	D 4.3, D 5.3	303d
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	1km
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	303d
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

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	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	4
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	0
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	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	1
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	

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	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	5
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	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 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

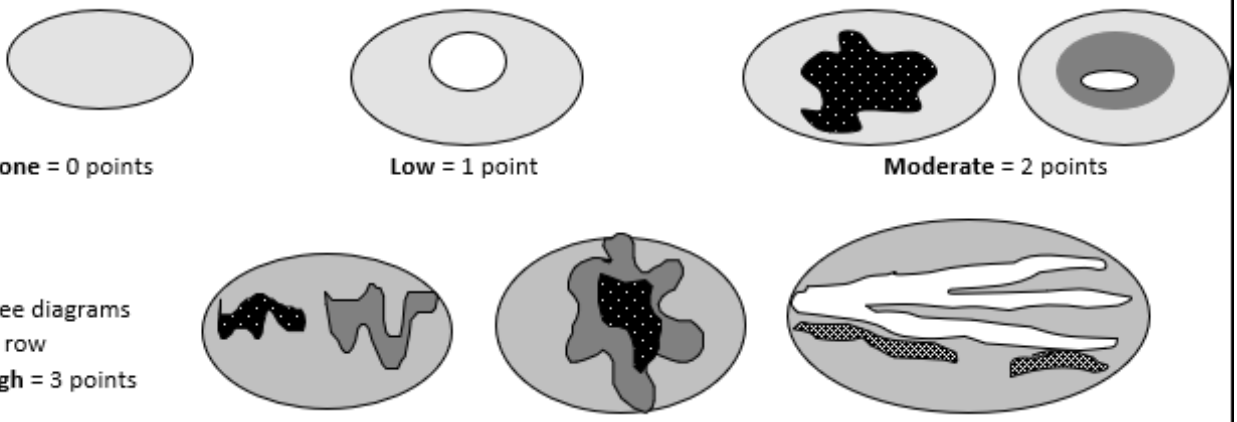
Rating of Landscape Potential If score is: **__3 = H** **√ 1 or 2 = M** **___0 = L** *Record the rating on the first page*

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 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. x Aquatic bed — 4 structures or more: points = 4 x Emergent — 3 structures: points = 2 x Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 x Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* x 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). x Permanently flooded or inundated — 4 or more types present: points = 3 x 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	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	3

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. x Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). x 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) x 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) x 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	13

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 12 **+** [(% moderate and low intensity land uses)/2] 5 **=** 14.5 % 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 10 **+** [(% moderate and low intensity land uses)/2] 44 **=** 32 % 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	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

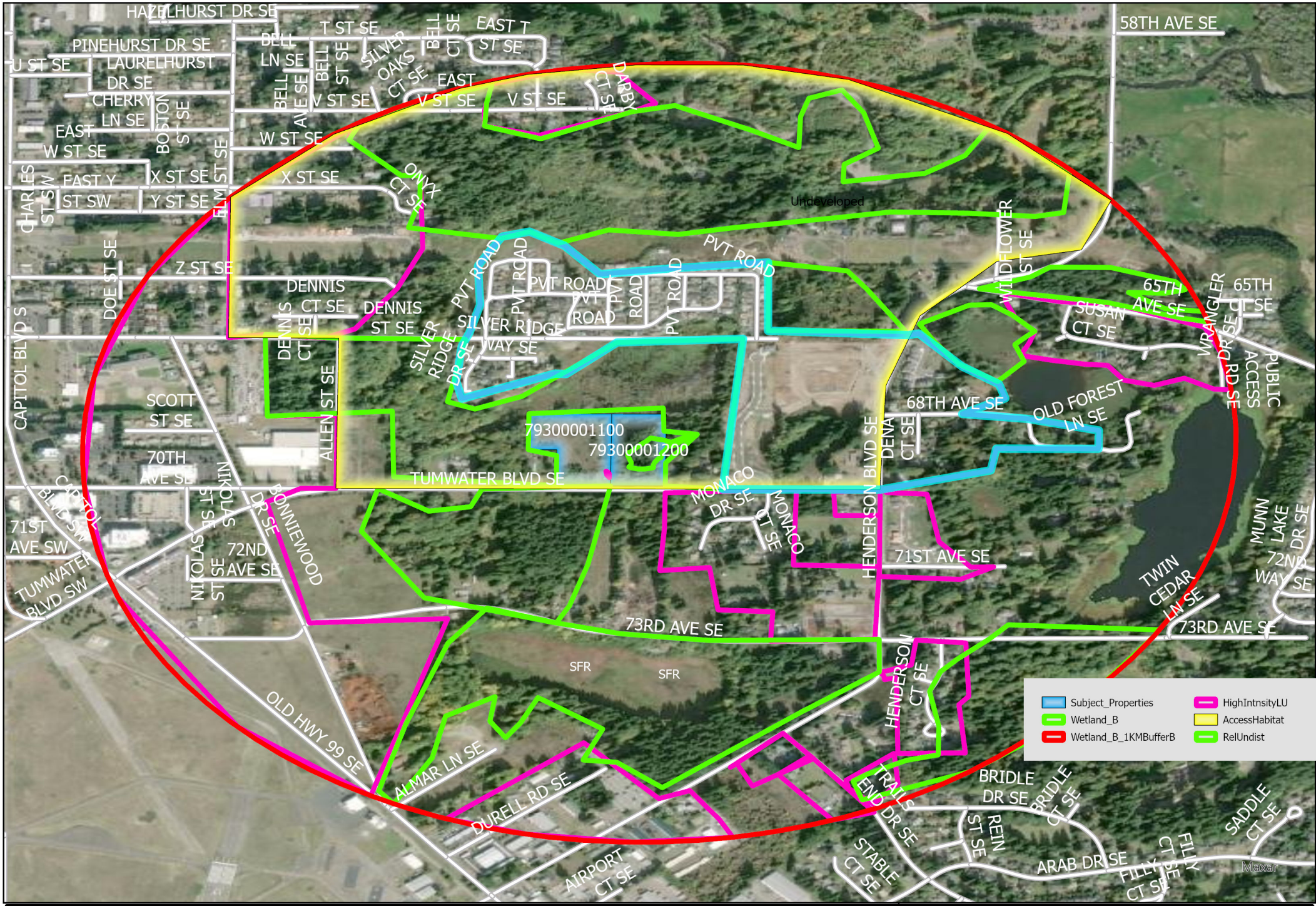
CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

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	



Item 2a.

Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

1KM Land Use Intensity Map

0 475 950 1,900 Feet

Land Use Calculations

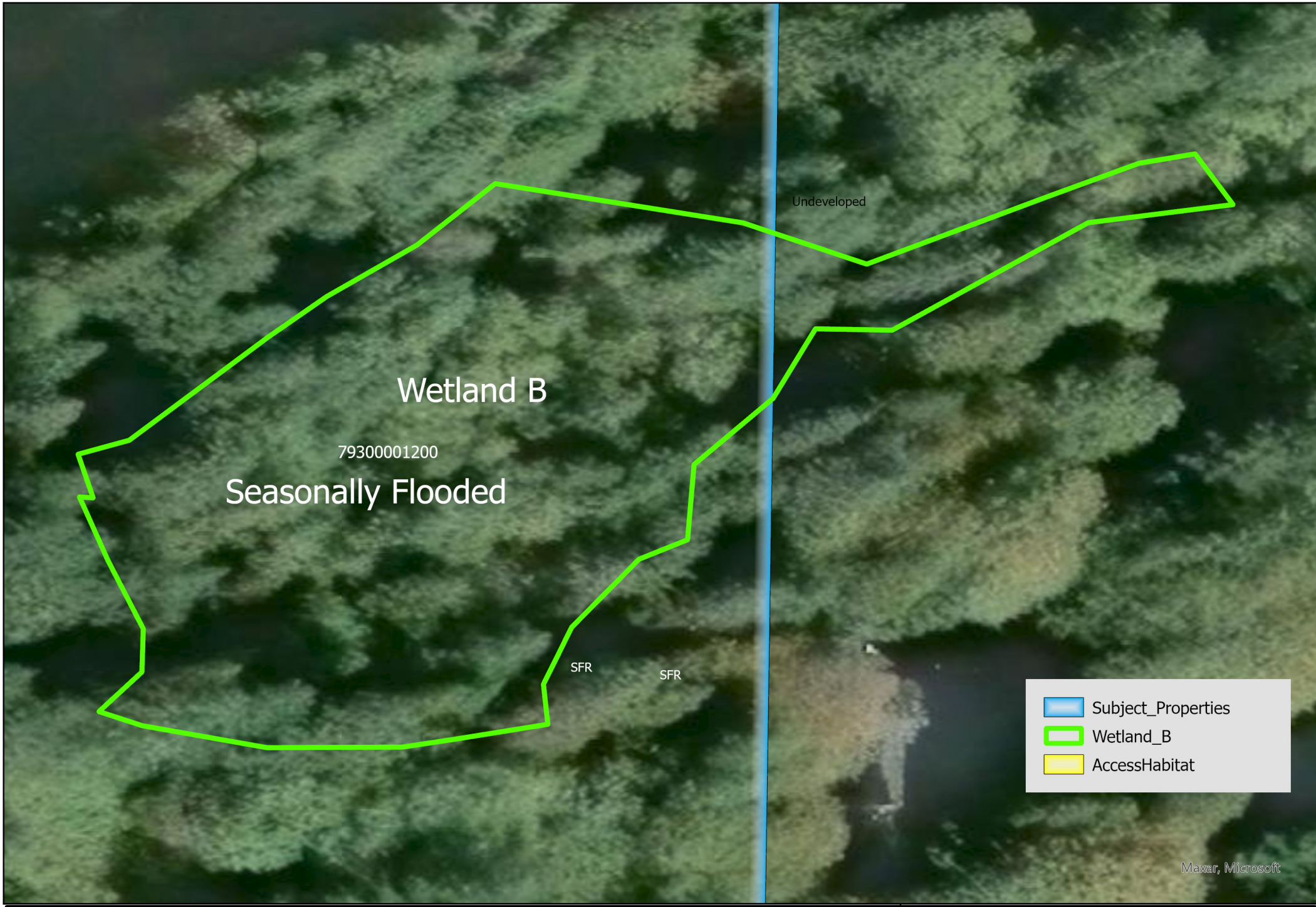
	ACRES		%
1KM	857		
Wetland B	1.06		
1KM-Wetland B	855.94		100
High Intensity	309	0.361007	36.10066
Relatively Undisturbed	260	0.30376	30.37596
Low Medium Use	286.94	0.335234	33.52338
Accessible Habitat	401	0.467911	
Wetland B	1.06		
Accessible Habitat-Wet B	399.94	0.467252	
RU	138	0.161226	16.12263
Low/Medium LU	160.94	0.188173	18.81731
High Intensity	101	0.117853	11.7853

Item 2a.

Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

Cowardin Classification Map

0 26.5 53 106 Feet



Item 2a.

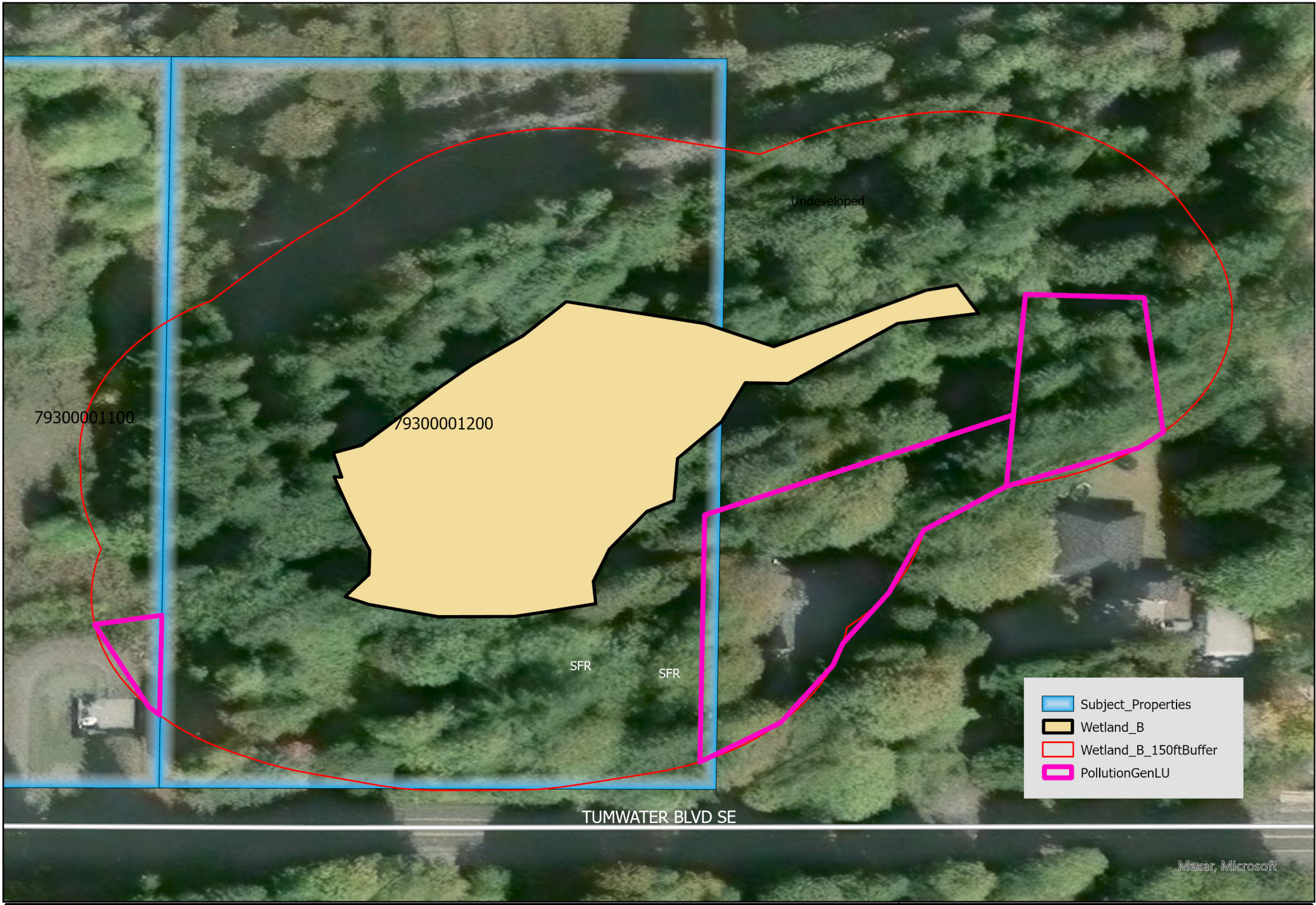
N

SNW

Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

Hydroperiod Classification Map

0 26.5 53 106 Feet



Item 2a.

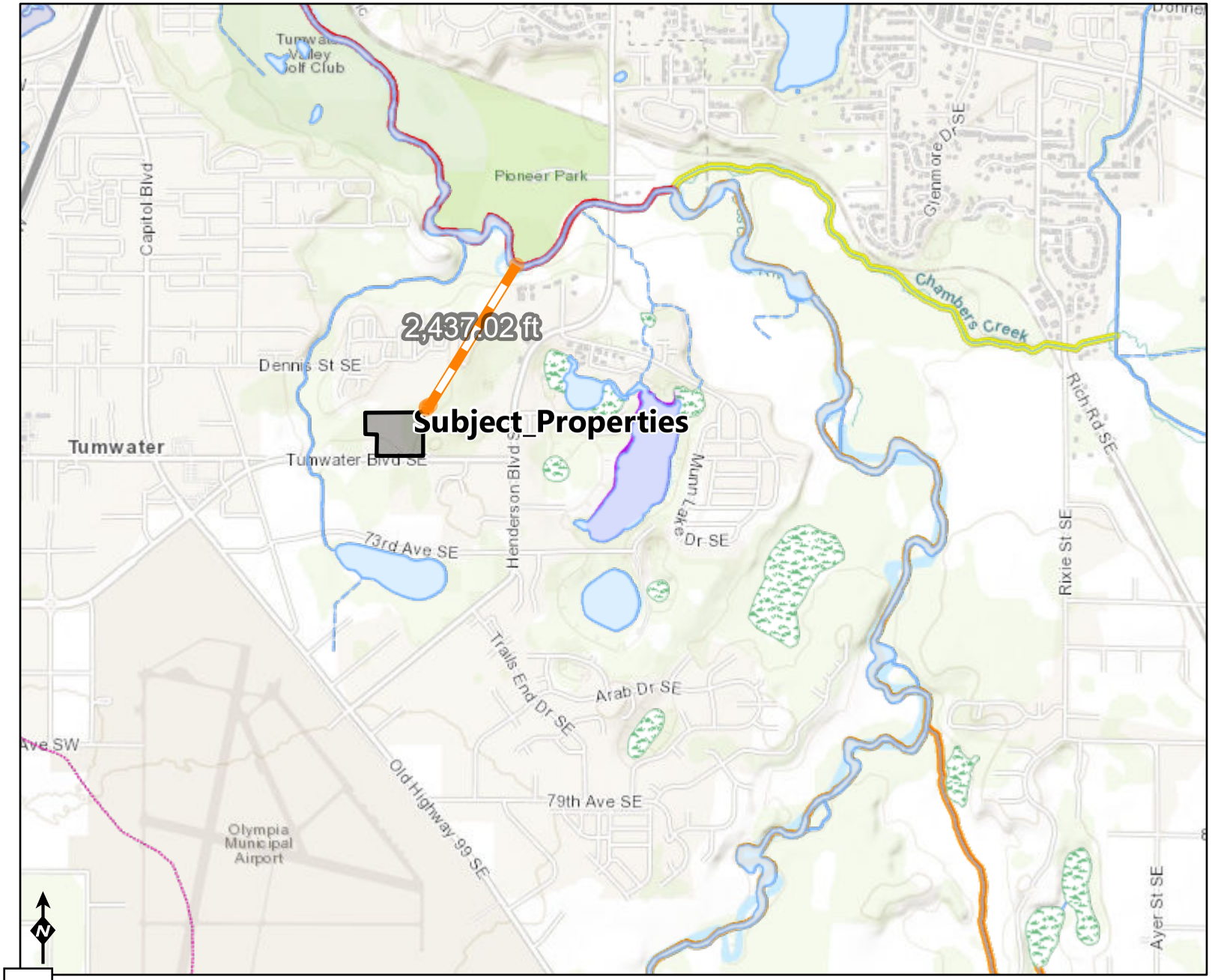
Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

150ft Pollution Generating Land Use

0 47.5 95 190 Feet

March 6, 2025

303d Water Quality Atlas Map



Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

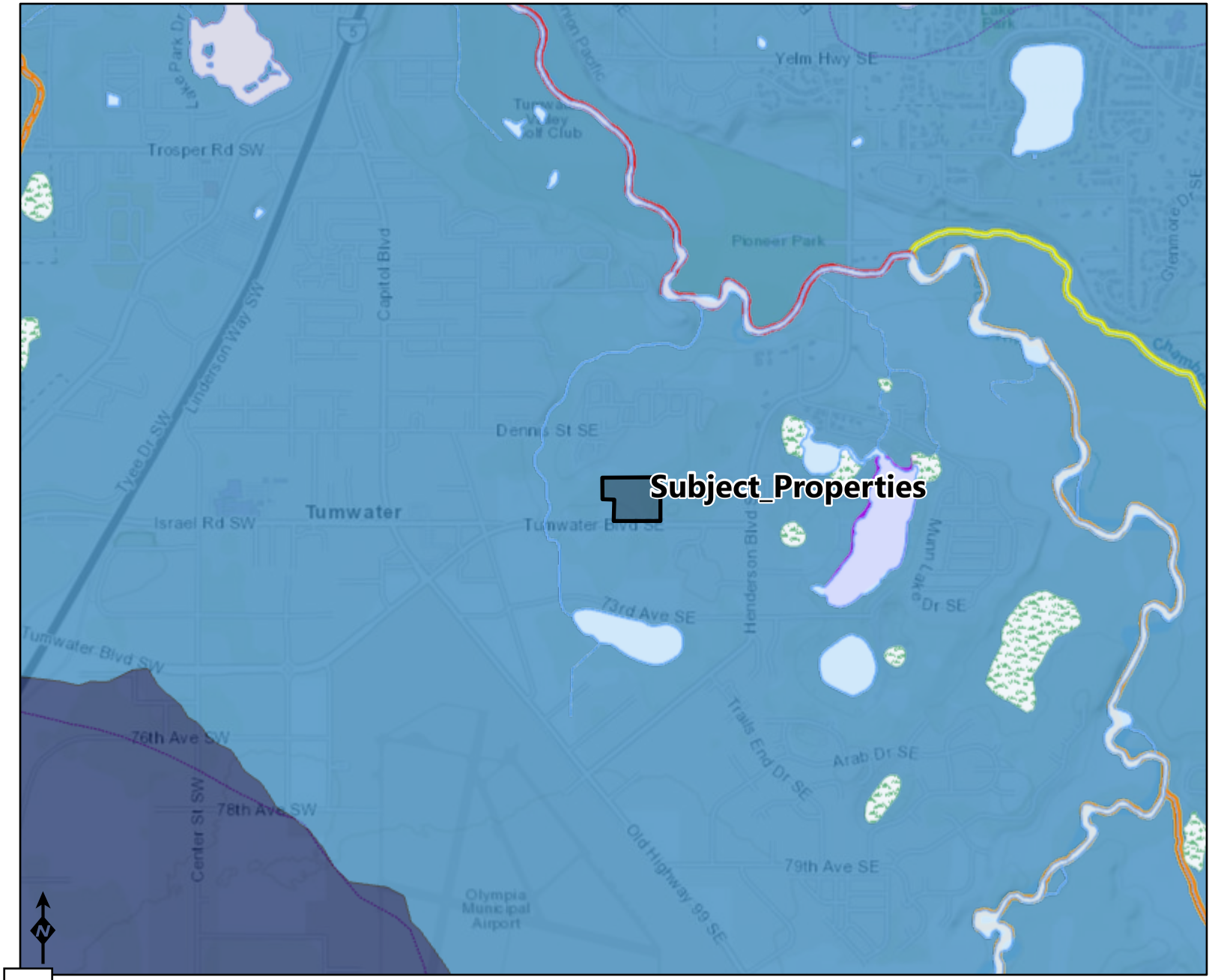
Parcels
- Parcel boundary

Miles
0 0.23 0.45 0.9

City of Olympia, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS

March 6, 2025

TMDL In Basin



Assessed Water/Sediment

Water
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

Sediment
- Category 5 - 303d
- Category 4C
- Category 4B
- Category 4A
- Category 2
- Category 1

WQ Improvement Projects
- TMDL - Approved
- 4B - Approved
- STI - Approved
- ARP - Approved
- TMDL - In Development
- STI - In Development
- ARP - In Development

Parcels
- Parcel boundary

Miles
0 0.23 0.45 0.9

City of Olympia, WA State Parks GIS, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, USFWS

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 8/16/2024

Rated by Alexander Callender Trained by Ecology? X Yes ___No Date of training 12/13

HGM Class used for rating Depression Wetland has multiple HGM classes? ___Y X N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map 2024 ESRI Aerial

OVERALL WETLAND CATEGORY ____ (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

X_____**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	5	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	X

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	Cowardin
Hydroperiods	D 1.4, H 1.2	Hydro
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	Outlet
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	150 Ft
Map of the contributing basin	D 4.3, D 5.3	303d
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	1 Km
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	303d
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	TMDL

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	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	0
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	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 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	0
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	1
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	0
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: 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	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	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	0
Total for D 5 Add the points in the boxes above	2 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

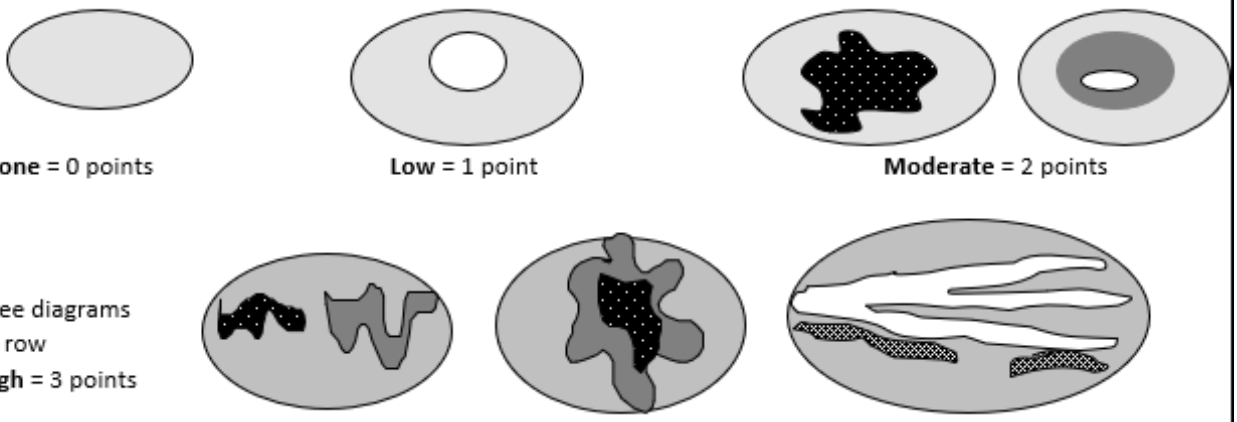
Rating of Value If score is: **__2-4 = H** ✓ **1 = M** **___0 = L** *Record the rating on the first page*

Wetland name or number 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 X Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* X 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 X 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. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). X 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) X 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	5

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 16 **+** [(% moderate and low intensity land uses)/2] 9 = 25 % 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	2
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 30 **+** [(% moderate and low intensity land uses)/2] 16.5 = 46.5 % 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	3

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**

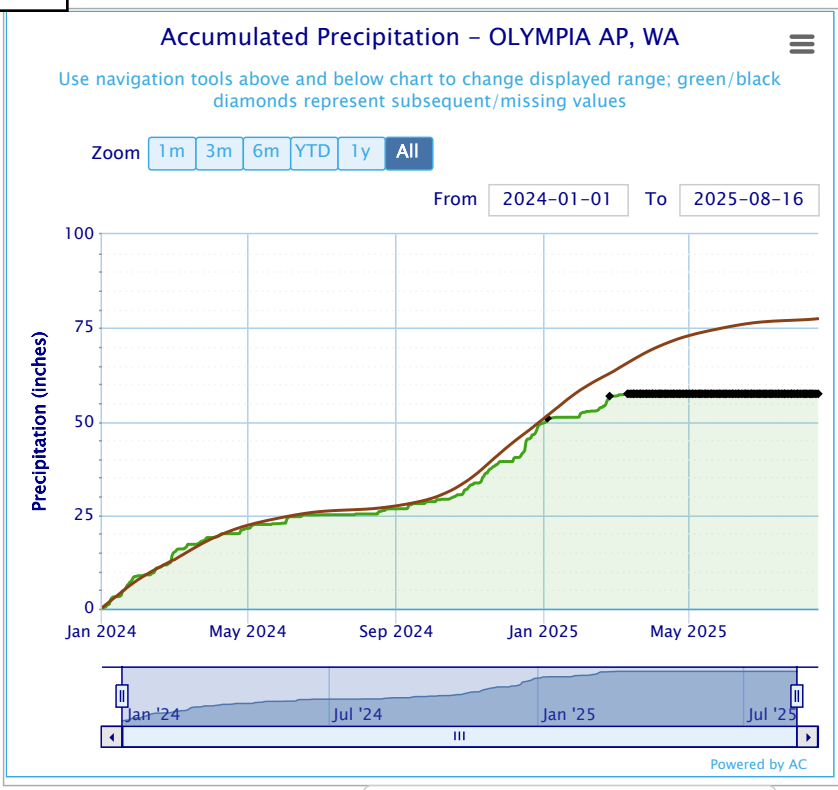
[135] https://www.dnr.wa.gov/NHPdata

[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** 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	

Appendix J - NOAA NOW DATA



Note regarding subsequent/missing values

Mazama Pocket Gopher (*Thomomys Mazama)* and Regulated Prairie Absence Report

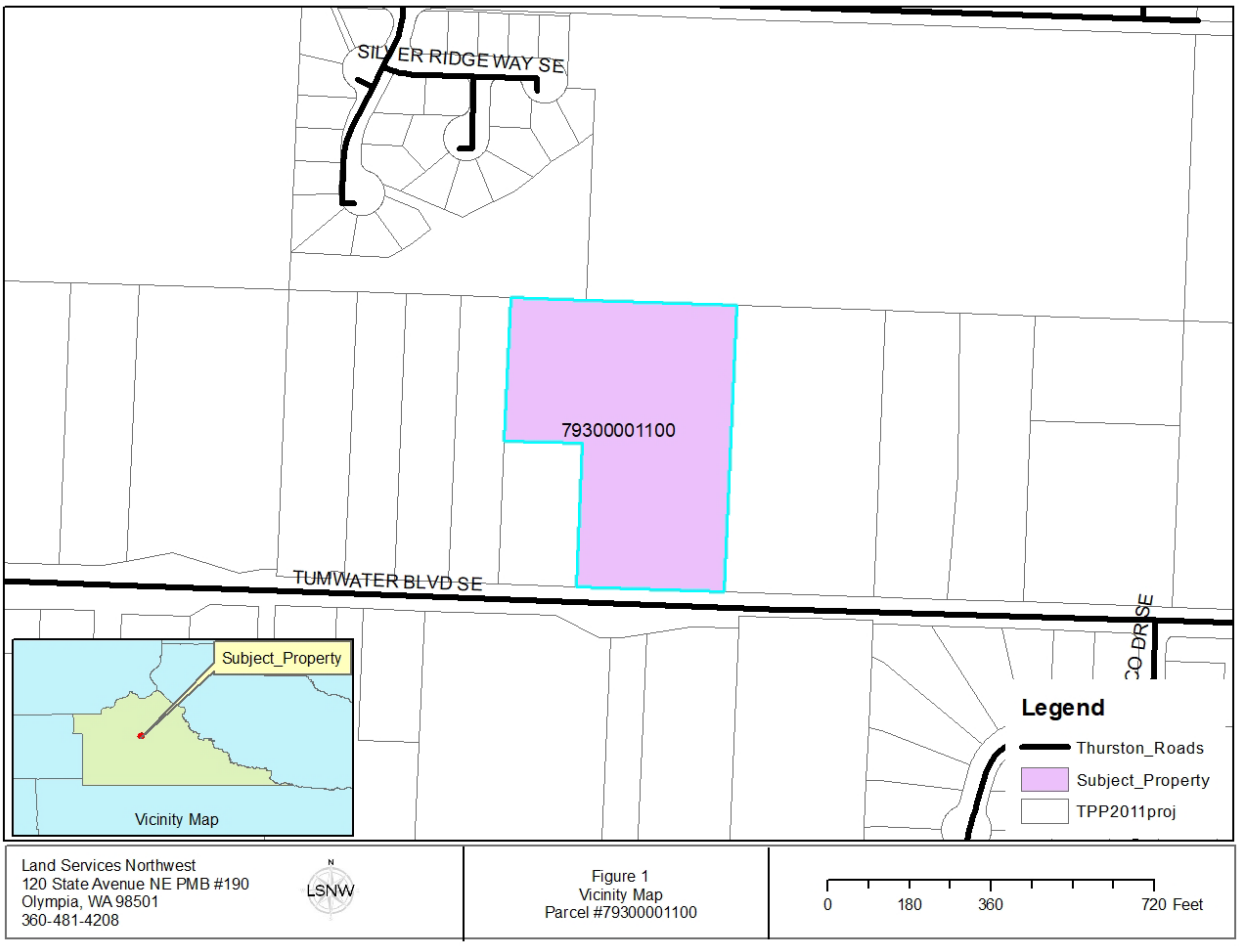
Prepared for
Todd Hanson
Tenino Land Company LLC

Land Services Northwest
Alex Callender MS, PWS
120 State Ave NE PMB 190, Olympia, WA, 98501
360.481.4208

1.0 INTRODUCTION

This report is the result of a Mazama Pocket Gopher Survey of the 5.86-acre parcel #79300001100 at 715 DENNIS ST SE Tumwater, WA with the partial legal description of Section 02 Township 17 Range 2W Quarter NW SE Plat THOMPSONS TO BRIGHTON PARK LL-0605 LT 3 Document 004/413.
. **(Figure 1)**

The Purpose of this report is to provide a study of the presence or absence of indicators of the Mazama Pocket Gopher (*Thomomys Mazama*) (MPG) and Regulated Prairie as required by the most current City of Tumwater Critical Areas Code.



Mazama Pocket Gopher

Four subspecies of Mazama pocket gophers found in Thurston County are listed as threatened under the Endangered Species Act (ESA). Impacts to Mazama pocket gophers should be avoided or addressed through USFWS permitting processes. The presence of this species on a property may have regulatory implications that may limit the amount or type of development that can occur on a property in order to

avoid "take" of the species. Take is defined under the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect any threatened or endangered species.

This study should allow the reader to assess whether the Mazama pocket gopher is likely to be found on site and what the implications of its presence or absence may have with regard to permitting a residence or other structures or development.

Regulated Prairie, Garry Oaks and Mima Mounds

The parcel contains soil types associated with prairies as defined in the Thurston County Critical Areas Ordinance (CAO 24.25). Transects were walked throughout the parcel (or at least throughout the building envelope and 50-foot buffer area). A list of plant species encountered during the survey was recorded and CAO target prairie plants were noted. Regulated prairie can be either wet or dry outwash prairie and is critical habitat for the Taylors checkerspot butterfly and the Mardon skipper butterfly. Prairie habitat is regulated if three indictor species are found within 5 meters (15 feet) of each other with 25 or more of each species in the plot.

2.0 METHODS

2.1 Review of Existing Information

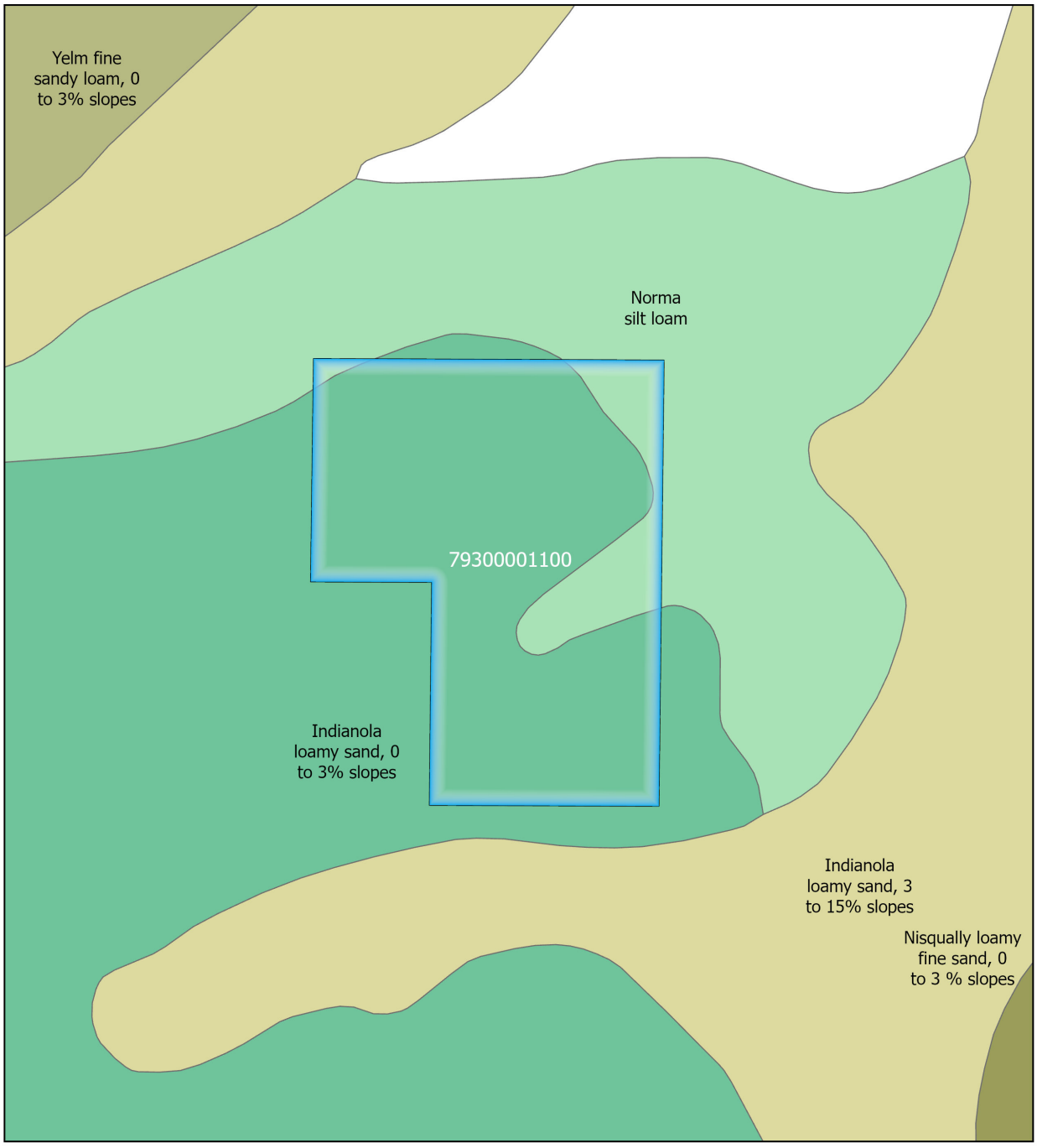
Background Review

Background information on the subject property was reviewed prior to field investigations and included the following:

- Thurston County Geodata Gopher Soils Shapefiles
- WDFW Priority Habitats and Species Information
- USFWS species list information
- WDFW species information

2.2 Summary of Existing Information

The existing information shows Indianola loamy sand 0 to 3 percent slopes, Indianola loamy sand 3 to 15 percent slopes and Norma silt loam on and within 300 feet of the subject property, which are more and less preferred by the MPG. (**Figure 2) and (Attachment A).**



N LSNW Land Services Northwest 120 State Avenue NE PMB 190 Olympia,WA 98501	Figure Two MPG Soils	0 90 180 360 Feet

Attachment A

Table 1. Soils known to be associated with Mazama pocket gopher occupancy.

Mazama Pocket Gopher Preference	Soil Type
More Preferred (formerly High and Medium Preference Soils)	Nisqually loamy fine sand, 0 to 3 percent slopes Nisqually loamy fine sand, 3 to 15 percent slopes Spanaway-Nisqually complex, 2 to 10 percent slopes Cagey loamy sand Indianola loamy sand, 0 to 3 percent slopes Spanaway gravelly sandy loam, 0 to 3 percent slopes Spanaway gravelly sandy loam, 3 to 15% slopes
Less Preferred (formerly Low Preference Soils)	Alderwood gravelly sandy loam, 0 to 3 percent slopes Alderwood gravelly sandy loam, 3 to 15 percent slopes Everett very gravelly sandy loam, 0 to 3 percent slopes Everett very gravelly sandy loam, 3 to 15 percent slopes Indianola loamy sand, 3 to 15 percent slopes Kapowsin silt loam, 3 to 15 percent slopes McKenna gravelly silt loam, 0 to 5 percent slopes Norma fine sandy loam Norma silt loam Spana gravelly loam Spanaway stony sandy loam, 0 to 3 percent slopes Spanaway stony sandy loam, 3 to 15 percent slopes Yelm fine sandy loam, 0 to 3 percent slopes Yelm fine sandy loam, 3 to 15 percent slopes

The Washington State Department of Fish and Wildlife Priority Habitat and Species Database does not show any occurrences of the MPG within 600 feet of the subject parcel since 2014. (**Appendix B**).

2.3 2024 Mazama Pocket Gopher Protocol

A. General Information – 2024 Approach

1. The MPG review season will run June 1-October 31, 2024.

2. The protocol described in this memorandum will only apply to properties not known to be occupied by MPG since April 2014, the date of the federal listing.

The property was not known to be occupied by the MPG since April 2014.

3. Negative determinations will be valid for the length of the underlying City permit or approval, per City code.

The determination is negative.

4. Qualified consultants may perform field reviews and submit results for City evaluation, per the CAO. Consultants must have received training from USFWS at one of the two trainings offered in May/June 2019 and is certified to conduct these surveys.

Alex Callender is qualified as a consultant as he received training and certification during the May 2019 class conducted by the United States Fish and Wildlife Service.

B. In-Office Procedures

1. Staff will review land use applications to determine if the MPG field screening protocols described in this memorandum must be initiated for the following:

a. Within 600 feet of a site known to have positive MPG occurrence ; or

b. On or within 300 feet of a soil type known to be associated with MPG occupancy.

The existing information shows Indianola loamy sand 0 to 3 percent slopes, Indianola loamy sand 3 to 15 percent slopes and Norma silt loam on and within 300 feet of the subject property, which are more and less preferred by the MPG.

2. City staff will determine if other factors preclude the need for field screening. See Preliminary assessment below.

3. City staff will notify applicants if their application cannot be excluded from further review.

4. City staff will review critical area reports submitted by consultants.

5. For sites where no MPG activity is observed, the City will provide applicants with a project condition that requires them to stop construction activity and alert the County and USFWS if evidence of MPG occupancy is observed.

N/A - No activity observed

C. Preliminary Assessment

As land use applications are received, properties mapped with or within 300 feet of gopher and/or prairie soils undergo the following preliminary assessment in-office.

1. For properties or project areas that appear to meet City criteria below, an internal review is conducted by staff biologist to determine if the project may be released from the full gopher review process. The following criteria may release a project from further gopher review:

- Locations west of the Black River, or on the Steamboat Island or Cooper Point

peninsulas.
N/A

- Sites submerged for 30 consecutive days or more since October 31, 2017.
  N/A
- Sites covered with impervious surfaces (as defined in CAO Chapter 17.15 and Title 24).
- Fully forested (>30%) sites with shrub and fern understory.
  Portions of the parcel are forested and excluded areas are shown on the transect maps in Appendix C.
- Sites that consist of slopes greater than 40 percent, or that contain landslide hazard areas (per existing County regulations).
  N/A
- Sites on less preferred MPG soils north of Interstate 5.
  N/A
- Building to take place in the footprint of an existing structure (also mobile home replacements in the same footprint).
  N/A
- Mobile home replacements in existing lots in an existing mobile home park.
  N/A
- Heating oil tank removal
  N/A
- Foundation repair
  N/A
- Projects which lie >300 feet from mapped gopher soils.
  The parcel is within 300 feet of mapped gopher soils.

2. If a property and/or project area do not meet internal review criteria, the project is put on a list to be scheduled for full MPG review during the appropriate seasonal review period.

3. In addition to the in-office preliminary assessment, the biologist may, if time allows, visit properties prior to the first gopher review in order to screen for prairie habitat. This screening process focuses on the presence or absence of native prairie plants, Oregon white oak trees (Quercus garryana), or Mima mounds protected under the Critical Areas Ordinance (CAO).

+

The site was evaluated for Regulated prairie plants on May 8, 2024, and during the two gopher studies on June 5 and July 5, 2024. None the target prairie plant species identified in the Thurston County CAO were detected in species number our quantity to meet the criteria on the parcel.

D. Implementation Measures

In order to ensure the review process runs efficiently, the following measures will be implemented as part of the 2024 screening approach. These are intended to reduce costs and staff time, and ensure that MPG screening requests, especially those associated with building permit applications, are screened during the screening season.

1. No soil verification will be required in conjunction with MPG field screening.

2. Site mowing or brushing will be required to initiate first site visits, where necessary and feasible, and completed two to four weeks in advance of the site visit.

The ground was visible.

3. No further screening will be conducted in 2024 following the detection of MPG mounds on a property. The City will notify landowners that MPG evidence has been detected within two weeks.

*The Mazama pocket gopher mounds were **not** found.*

4. At the end of the 2024 season, City staff will provide data regarding MPG occupancy to USFWS.

5. No additional site visit will be required if indeterminate mounds are detected, if the full number of required visits has been completed.

N/A

6. The City will prioritize project specific applications over non-project applications. This will help ensure that applicants that have projects ready for construction will receive necessary permits and may initiate construction in a timely manner.

E. Site Visit Overview

Hired consultants will conduct field observations to determine MPG presence on sites with potential habitat. These site visits will be conducted as follows:

1. All valid site visits must be conducted from June 1 through October 31, 2024. Site visits outside that survey window will not be considered valid.

Site visits were conducted on June 5 and July 5, 2024.

2. A site or parcel is considered to be the entire property, not just the footprint of the proposed project.

Portions of the property are forested, and the excluded areas are shown on the transect maps in Appendix C.

3. Sites with less preferred soils (see Attachment A) will be visited two (2) times, at least 30 days apart.

The existing information shows Indianola loamy sand 0 to 3 percent slopes, Indianola loamy sand 3 to 15 percent slopes and Norma silt loam on and within 300 feet of the subject property, which are more and less preferred by the MPG

The site was visited two times during the proper study period 30 days apart.

4. Sites with more preferred soils (see Attachment A) will be visited two (2) times, at least 30 days apart.

5. Site conditions must be recorded on a data sheet or similar information documented in narrative form. A template data sheet can be found on the County website at http://www.co.thurston.wa.us/permitting/gopher-reviews/index.html

The data sheets are provided in Appendix C.

6. Document and describe which areas of the parcel cannot be screened due to limited accessibility and/or dense understory. This should be depicted on an aerial or site plan submitted to the County.

The excluded forested areas are shown on the transect maps in Appendix C.

7. The ground must be easily visible to ensure mound observation and identification. Request mowing if necessary to ensure visibility. Wait two to three weeks after mowing before beginning screening.

The ground was visible.

http://www.co.thurston.wa.us/permitting/gopher-reviews/index.html F. Detailed Field Methodology

1. The survey crew orients themselves with the layout of the property using aerial maps, and strategizes their route for walking through the property.

2. Start GPS to record survey route.

3. Walk the survey transects methodically, slowly walking a straight line and scanning an area approximately 2-3 meters to the left and right as you walk, looking for mounds. Transects should be no more than five (5) meters apart when conducted by a single individual.

4. If the survey is performed by a team, walk together in parallel lines approximately 5 meters apart while you are scanning left to right for mounds.

The survey was conducted according to the protocol.

5. At each mound found, stop and identify it as a MPG or mole mound. If it is a MPG mound, identify it as a singular mound or a group (3 mounds or more) on a data sheet to be submitted to the City.

The mounds found on site were typical of moles which are round, clumpy and the show was in a linear fashion. No MPG mounds were found.

6. Record all positive MPG mounds, likely MPG mounds, and MPG mound groups in a GPS unit that provides a date, time, georeferenced point, and other required information. Submit GPS data in a form acceptable to the City.

N /A

7. Photograph all MPG mounds or MPG mound groups. At a minimum, photograph MPG mounds or MPG mound groups representative of MPG detections on site.

No MPG mounds found.

8. Photos of mounds should include one that has identifiable landscape features for reference. In order to accurately depict the presence of gopher activity on a specific property, the following series of photos should be submitted to the County:
   - At least one up-close photo to depict mound characteristics
     No MPG mounds were found.
   - At least one photo depicting groups of mounds as a whole (when groups are encountered).
     N/A
   - At least one photo depicting gopher mounds with recognizable landscape features in the background, at each location where mounds are detected on a property
     N/A
   - Photos can be taken with the GPS unit or a separate, camera, preferably a camera with locational features (latitude, longitude)
     N/A
   - Photo point description or noteworthy landscape or other features to aid in relocation. Additional photos to be considered.
     Photos are found in Appendix A
   - The approximate building footprint location from at least two cardinal directions.
     N/A
   - Landscape photos to depict habitat type and in some cases to indicate why not all portions of a property require gopher screening.
     Appendix A Photos

9. Describe and/or quantify what portion and proportion of the property was screened, and record your survey route and any MPG mounds found on either an aerial or parcel map.

A portion of the parcel is forested and the excluded areas are shown on the transect maps in Appendix C.

10. If MPG mounds are observed on a site, that day's survey effort should continue until the entire site is screened and all mounds present identified, but additional site visits are not required.

No mounds were found.

11. In order for the County to accurately review Critical Area Reports submitted in lieu of County field inspections the information collected in the field (GPS, data sheets, field notes, transect representations on aerial, etc.) shall be filed with the County. GPS

No mounds were found, the information was submitted in an acceptable format.

2.4 Regulated Prairie Survey Protocol

1. Prairie Review Method

The parcel contains soil types associated with prairies as defined in the Thurston County Critical Areas Ordinance (CAO 24.25). Transects were walked throughout the parcel (or at least throughout the building envelope and 50-foot buffer area).

2. A list of plant species encountered during the survey was recorded and CAO target prairie plants were noted.

3. Confirmation that CAO prairie plants were surveyed for and either found or not found, prairie criteria met or not met, etc. An example statement of your findings could be:

None of the target prairie plant species identified in the Thurston County CAO were detected on the parcel.

4. If prairie habitat is identified onsite, provide either a GPS map or hand-drawn aerial map indicating location of prairie plants on the parcel in relation to the proposed building area.

5. A full species list of plants (prairie and non-prairie) found at the time of survey. Attached is a blank checklist and data sheet if you choose to use. Even if no CAO prairie plants were detected, a complete species list of vegetation observed helps characterize site conditions.

A full species list of plants found is in Appendix C.

6. Color photos of plant species encountered.

Color photos are in Appendix A.

9. Mima mounds, if observed onsite, must also be documented, mapped, and included in the prairie plant survey. Provide either a GPS map or hand-drawn aerial map indicating location of Mima mounds on the parcel in relation to the proposed building area.

No Mima mounds were observed.

3.0 CURRENT CONDITIONS AND METHODS

Land Services Northwest conducted a survey on May 8, 2024 for prairie habitat and June 5 and July 5, 2024 for the MPG surveys walking the area and looking for signs of the MPG and regulated prairie in accordance with the protocol.

4.0 RESULTS

No Mazama pocket gophers were found on site. *The mounds found on site were typical of moles which are round, clumpy and the show was in a linear fashion*

No CAO prairie plants, Garry oaks or Mima mounds were found.

The parcel is predominantly an undeveloped field. There are undeveloped properties and single family residences to the east and west. Tumwater Boulevard is to the south and a subdivision with small lots and an undeveloped parcel to the north.

Appendix A - Photos

Hanson
06.05.2024 11:05 AM
46.98809, -122.89338
816 70th Ave SE, Tumwater, WA 98501

Hanson
06.05.2024 11:05 AM
46.9881, -122.89336
816 Tumwater Blvd SE, Tumwater, WA 98501

Hanson
06.05.2024 11:06 AM
46.98828, -122.89354
816 Tumwater Blvd SE, Tumwater, WA 98501

Hanson
06.05.2024 11:07 AM
46.98829, -122.89361
816 Tumwater Blvd SE, Tumwater, WA 98501

Hanson
06.05.2024 11:10 AM
46.98796, -122.89431
816 Tumwater Blvd SE, Tumwater, WA 98501

Hanson
06.05.2024 11:13 AM
46.98824, -122.89328
816 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:13 AM
46.98813, -122.89313
934 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:14 AM
46.98809, -122.89291
934 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:15 AM
46.9882, -122.89287
934 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:19 AM
46.98929, -122.89314
934 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:35 AM
46.98934, -122.89394
6704 Silver Ridge Dr SE, Tumwater, WA 98501

Hanson
06.05.2024 11:51 AM
46.98935, -122.89471

Hanson
06.05.2024 11:56 AM
46.98879, -122.89408
804 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:57 AM
46.9888, -122.89408
804 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:57 AM
46.9888, -122.89408
804 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 11:57 AM
46.98881, -122.89409
804 Tumwater Blvd SE, Olympia, WA 98501

Hanson
06.05.2024 12:00 PM
46.99054, -122.89566
804 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 10:32 AM
46.98554, -122.89364
816 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 10:39 AM
46.98554, -122.89364
816 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 10:40 AM
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934 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 10:41 AM
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934 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 10:41 AM
46.98627, -122.8933
934 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 10:43 AM
46.98705, -122.89339
934 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 11:01 AM
46.98697, -122.89408
804 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 11:01 AM
46.98697, -122.89403
804 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 11:18 AM
46.98685, -122.8946
804 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 11:18 AM
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804 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 11:20 AM
46.98694, -122.89475
804 Tumwater Blvd SE, Olympia, WA 98501

TLC Henderson
07.05.2024 11:23 AM
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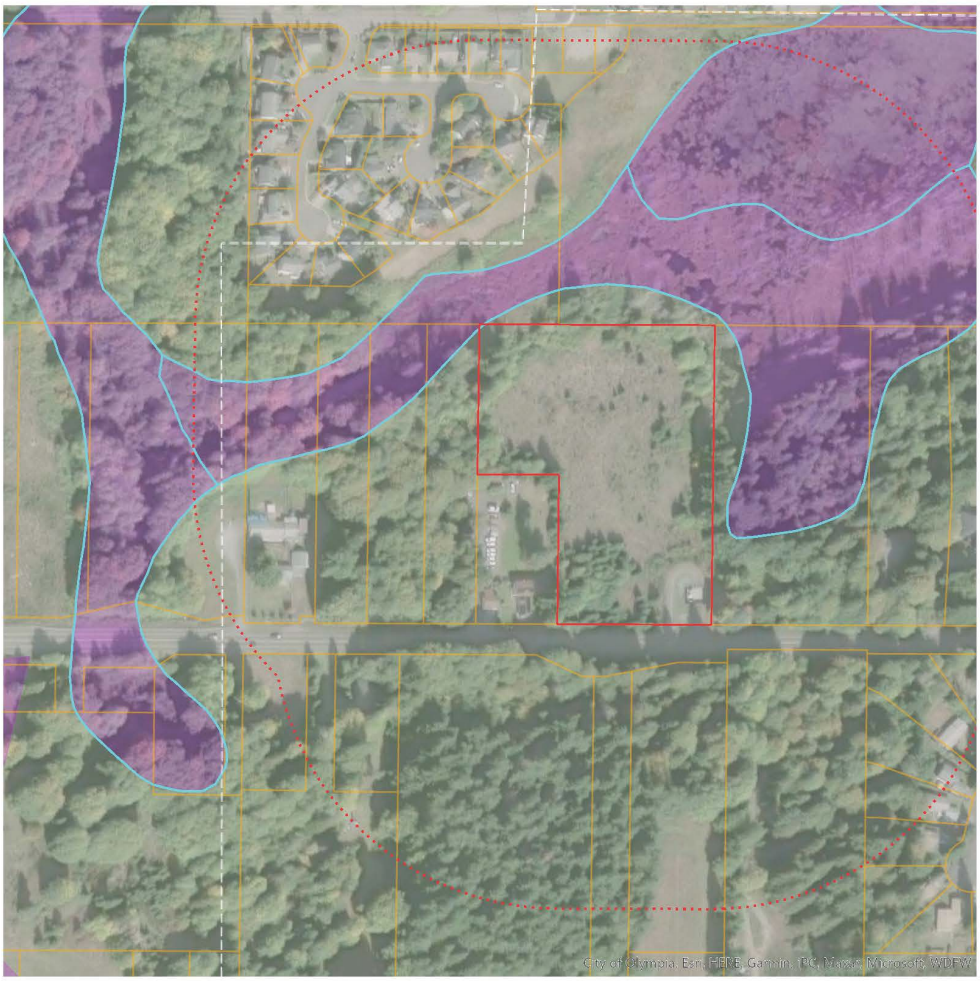
6689 Silver Ridge Ct SE, Tumwater, WA 98501

Appendix B - WDFW Priority Habitats and Species Map

Priority Habitats and Species on the Web



Buffer radius: 600 Feet

Report Date: 07/02/2024, Parcel ID: 79300001100

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Freshwater Emergent Wetland	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No
Big brown bat			Yes
myotis spp			Yes
Townsend's Big-eared Bat		Candidate	Yes

PHS Species/Habitats Details:

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

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

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

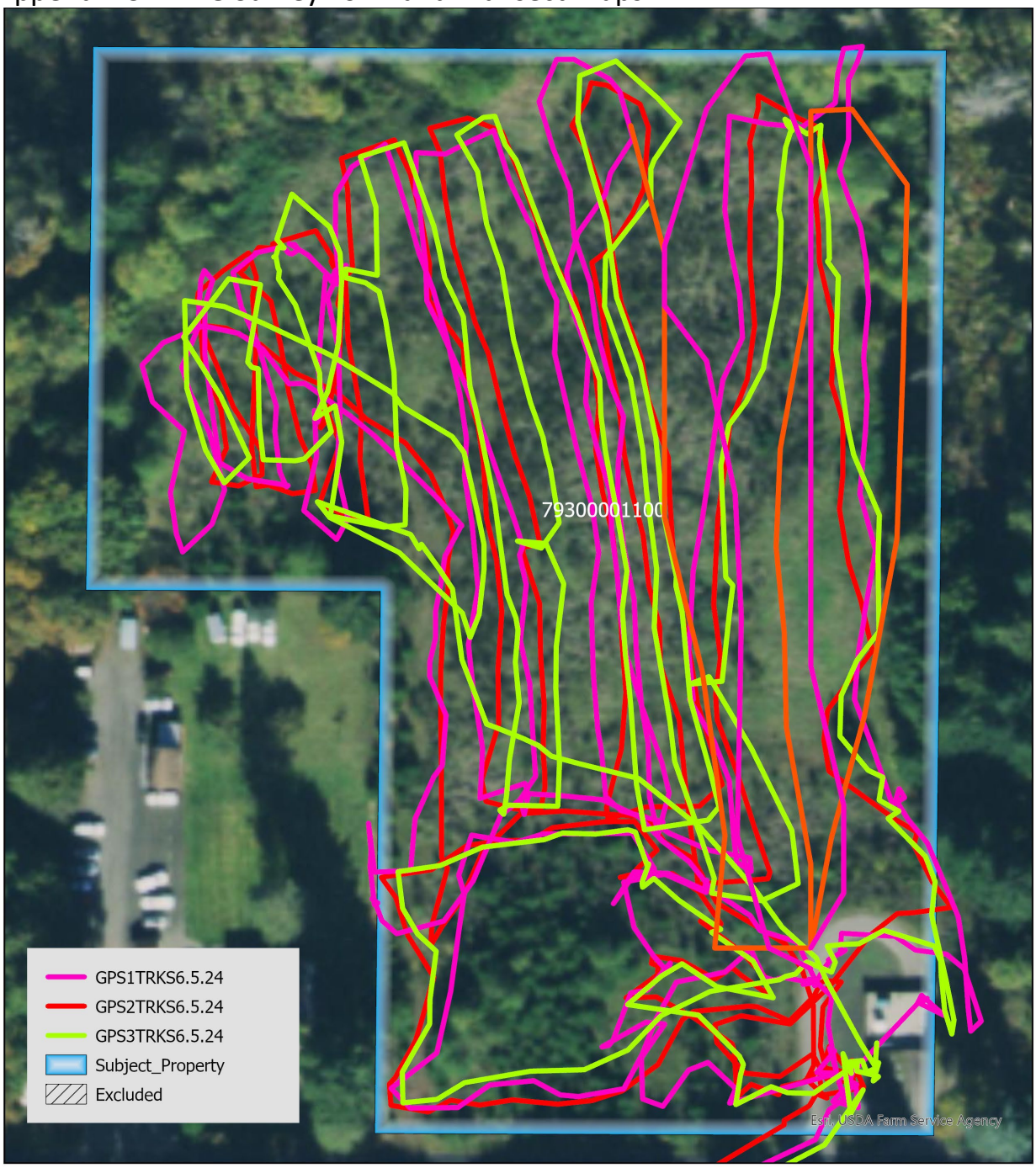
Big brown bat	
Scientific Name	*Eptesicus fuscus*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
PHS Listing Status	PHS Listed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

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

Townsend's Big-eared Bat	
Scientific Name	*Corynorhinus townsendii*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

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

Appendix C - MPG Survey Form and Transect Maps



N LSNW Land Services Northwest 120 State Avenue NE PMB 190 Olympia, WA 98501	Appendix C Transect Map 6.5.24	0 50 100 200 Feet

2021 Thurston County Mazama Pocket Gopher Screening Field Form **Site Visit Date:** 6.5.24

Site Name and Parcel #	**Parcel #:** 79300001100 **Project #:** _____ **Site/Landowner:** Tenino Land Compay
How were the data collected? **(circle the method for each)**	**Transect:** Trimble (Garmin) Aerial **Mounds** Trimble Garmin Aerial **Notes:** _____
Field Team Personnel: **(Indicate all staff present, CIRCLE who filled out form)**	**Name:** Alex Callender **Name:** (Susan Callender) **Name:** Craig Graber
Others onsite (name/affiliation)	
Site visit # **(CIRCLE all that apply)**	(1st) 2nd Unable to screen **Notes:**
Do onsite conditions preclude the need for further visits?	Yes (No) **Dense woody cover that encompasses the entire site (trees/shrubs) that appears to preclude any potential MPG use.** Impervious Compacted Graveled Flooded Other _____ **Notes:**
Describe visibility for mound detection:	Poor Fair (Good) **Notes:**
Request mowing? **(CIRCLE and DESCRIBE WHERE MOWING IS NEEDED and SHOW ON AERIAL PHOTO**	Yes No (N/A) **Notes:**

Page 1 of 2

Mounds observed over the whole site are characteristic of: **Quantify or describe amount of each type and approx. # of mounds** ***Group = 3 mounds or more***	**MPG Mounds**	**Likely MPG Mounds**	**Indeterminate**	**Likely Mole Mounds**	**Mole Mounds**
	0	0	0	0	25
	No MPG mounds (circle)				
MPG mounds in GPS? **(CIRCLE and DESCRIBE)** **If MPG mounds present, entered in GPS?**	**None All Most Some** **Notes:** **Yes No (N/A)**				
Does woody vegetation onsite match aerial photo?	**(Yes) No - describe differences and show on parcel map/aerial:**				
What portion(s) of the property was screened? **(CIRCLE and DESCRIBE)**	**All (Part) - describe and show on parcel map/aerial:** The parcel is partially forested and the excluded areas are shown on the transect maps in Appendix C.				
Notes -	**Describe, and show on parcel map/aerial if applicable:**				
Team reviewed and agreed to data recorded on form? **(CIRCLE, and EXPLAIN if "No")**	**(Yes) No Reviewed by initials:** AC SC CG ____ **Notes:**				

2021 Thurston County Mazama Pocket Gopher Screening Field Form **Site Visit Date:** 7.5.24

Site Name and Parcel #	**Parcel #:** 79300001100 **Project #:** _____ **Site/Landowner:** Tenino Land Compay
How were the data collected? **(circle the method for each)**	**Transect:** Trimble (Garmin) Aerial **Mounds** Trimble Garmin Aerial **Notes:** _____
Field Team Personnel: **(Indicate all staff present, CIRCLE who filled out form)**	**Name:** Alex Callender **Name:** (Susan Callender) **Name:**
Others onsite (name/affiliation)	
Site visit # **(CIRCLE all that apply)**	**1st** (2nd) **Unable to screen** **Notes:**
Do onsite conditions preclude the need for further visits?	**Yes** (No) **Dense woody cover that encompasses the entire site (trees/shrubs) that appears to preclude any potential MPG use.** **Impervious Compacted Graveled Flooded** **Other** _____ **Notes:**
Describe visibility for mound detection:	**Poor Fair** (Good) **Notes:**
Request mowing? **(CIRCLE and DESCRIBE WHERE MOWING IS NEEDED and SHOW ON AERIAL PHOTO**	**Yes No** (N/A) **Notes:**

Mounds observed over the whole site are characteristic of: Quantify or describe amount of each type and approx. # of mounds *Group = 3 mounds or more*	MPG Mounds	Likely MPG Mounds	Indeterminate	Likely Mole Mounds	Mole Mounds
	0	0	0	0	25
	No MPG mounds (circle)				
MPG mounds in GPS? (CIRCLE and DESCRIBE) If MPG mounds present, entered in GPS?	None All Most Some Notes: Yes No N/A				
Does woody vegetation onsite match aerial photo?	Yes No - describe differences and show on parcel map/aerial:				
What portion(s) of the property was screened? (CIRCLE and DESCRIBE)	All Part - describe and show on parcel map/aerial: The parcel is partially forested and the excluded areas are shown on the transect maps in Appendix C.				
Notes -	Describe, and show on parcel map/aerial if applicable:				
Team reviewed and agreed to data recorded on form? (CIRCLE, and EXPLAIN if "No")	Yes No Reviewed by initials: AC SC _____ _____ Notes:				

Information provided by Thurston County Government

Page 2 of 2

Appendix D - CAO Prairie Data Sheet

2019 Thurston County Critical Areas Ordinance (CAO) Prairie Screening Data Sheet

Parcel Number: 79300001100		**CAO prairie criteria met?**	Yes or (No)
Property Owner: Tenino Land Company		**Mima mounds present?**	Yes or (No)
Surveyor(s): Alex Callender		**Oaks (*Quercus garryana*) present?**	Yes or (No)
Date: 5.8.24		Mature:	
Composition of Vegetation:		Sapling:	
		Seedling:	

X	Target species	Class* (circle)
	Apocynum androsaemifolium	1 2 3 4 5 N/A
	Balsamorhiza deltoidea	Present / Absent
	Bistorta bistortoides	Present / Absent
	Brodiaea coronaria	1 2 3 4 5 N/A
	Camassia leichtlinii	1 2 3 4 5 N/A
	Camassia quamash	Present / Absent
	Carex densa	Present / Absent
	Carex feta	1 2 3 4 5 N/A
	Carex inops ssp. *inops*	1 2 3 4 5 N/A
	Carex tumulicola	1 2 3 4 5 N/A
	Carex unilateralis	1 2 3 4 5 N/A
	Castilleja hispida	1 2 3 4 5 N/A
	Castilleja levisecta	Present / Absent
	Danthonia californica	1 2 3 4 5 N/A
	Delphinium menziesii	1 2 3 4 5 N/A
	Delphinium nuttallii	1 2 3 4 5 N/A
	Deschampsia cespitosa	1 2 3 4 5 N/A
	Deschampsia danthonioides	1 2 3 4 5 N/A
	Dodecatheon hendersonii	1 2 3 4 5 N/A
	Downingia yina	1 2 3 4 5 N/A
	Erigeron speciosus	1 2 3 4 5 N/A
	Eriophyllum lanatum	Cover: ___ m^2 N/A
	Eryngium petiolatum	Present / Absent
	Festuca roemeri (F. idahoensis)	1 2 3 4 5 N/A
	Fragaria virginiana	Cover: 3 m^2 N/A
	Fritillaria affinis	1 2 3 4 5 N/A
	Hieracium scouleri	1 2 3 4 5 N/A
	Hosackia pinnata *(Lotus pinnatus)*	Present / Absent
	Koeleria macrantha (K. cristata)	1 2 3 4 5 N/A
	Leptosiphon bicolor (Linanthus b.)	1 2 3 4 5 N/A
	Lomatium bradshawii	Present / Absent
	Lomatium nudicaule	1 2 3 4 5 N/A
	Lomatium triternatum	1 2 3 4 5 N/A
	Lomatium utriculatum	Present / Absent

	Lupinus albicaulis	1 2 3 4 5 N/A
	Lupinus lepidus var. *lepidus*	1 2 3 4 5 N/A
	Lupinus polyphyllus	1 2 3 4 5 N/A
	Micranthes integrifolia (Saxifraga i.)	Present / Absent
	Micranthes oregana (Saxifraga o.)	1 2 3 4 5 N/A
	Microseris laciniata	Present / Absent
	Perideridia gairdneri	1 2 3 4 5 N/A
	Plagiobothrys figuratus	1 2 3 4 5 N/A
	Plectritis congesta	Present / Absent
	Polemonium carneum	Present / Absent
	Potentilla gracillis	Present / Absent
	Ranunculus alismifolius	1 2 3 4 5 N/A
	Ranunculus occidentalis	Present / Absent
	Ranunculus orthorhynchus	1 2 3 4 5 N/A
	Sericocarpus rigidus	Present / Absent
	Sidalcea malviflora* var. *virgata	Present / Absent
	Silene scouleri	Present / Absent
	Sisyrinchium idahoense	1 2 3 4 5 N/A
	Solidago missouriensis	1 2 3 4 5 N/A
	Solidago simplex (S. spathulata)	1 2 3 4 5 N/A
	Toxicoscordion venenosum var. venenosum (Zigadenus venenosus)	1 2 3 4 5 N/A
	Trifolium willdenowii (T. tridentatum)	1 2 3 4 5 N/A
	Triteleia grandiflora	1 2 3 4 5 N/A
	Triteleia hyacinthina	1 2 3 4 5 N/A
	Veratrum californicum	1 2 3 4 5 N/A
	Veratrum viride	1 2 3 4 5 N/A
	Viola adunca	1 2 3 4 5 N/A
	Viola praemorsa var. *nuttallii*	1 2 3 4 5 N/A

*Species Count Class:
1 = < 25
2 = 25 - 49
3 = 50 - 74
4 = 75 - 100
5 = >100

Prairie Plant Manual:
https://www.thurstoncountywa.gov/planning/planningdocuments/cao-prairie-plant-manual-4.23.2018.pdf

Non-CAO vegetation

	Species or codons (i.e. "HYPRAD" for *Hypochaeris radicata*)	Notes
1	Hairy cats ear (*Hypochaeris radicata*)	
2	Himalayan blackberry (*Rubus armeniacus*)	
3	Ox eye daisey (Leucanthemum vulgare)	
4	Hairy brackenfern *(Pteridium aquilinum)*	
5	Trailing blackberry (Rubus ursinus)	
6	Scotch broom *(Cytisus scoparius)*	
7	Orchard Grass *(Dactylis glomerata)*	
8	Reed canary grass (Phalaris arundinacea)	
9	Hawkweed (Hieracium spp.)	
10	Dovefoot geranioum *(Geranium molle))*	
11	Western dock (Rumex occidentalis)	
12	Bitter dock *(Rumex obtusifolius)*	
13	Common velvetgrass *(Holcus lanatus)*	
14	Red fescue *(Festuca rubra)*	
15	Common chichweed *(Stellaria media)*	

Prairie Habitat Criteria: If at any point at least three target species, totaling in general at least 25 plants each are encountered within about 5 meters of each other (WDFW 2015), the area in question meets the criteria to be established as occurrence of prairie. For certain plants such as WNHP rare plants (indicated here in bold), or species which serves as nectar or host plants for both TCB and either SCC or SGCN butterflies (indicated here with underline), presence is enough to meet prairie habitat criteria for such species, even if their count is less than 25 individual plants. CAO wet and dry prairie plant lists can be found in Tables 24.25-7 and 24.25-8, respectively. More info available at: https://www.thurstoncountywa.gov/planning/Pages/hcp-prairie-review.aspx
Mima mounds and oak habitat definitions can be found in TCC 24.03.010

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Tumwater Townhomes
Arborist Report
Tumwater, WA

Prepared For: Brandon Johnson, JSA Civil
Owner's Representative

Prepared By: Colin Owen, SCJ Alliance
ISA Certified Arborist PN-9606A
ISA Tree Risk Assessment Qualified

Date: December 6, 2024

Project Address: 715 Dennis St SE, Tumwater, Washington 98501

Parcel #: 79300001100 & 79300001200

Introduction

The following tree report has been developed as part of the permit package for the proposed Tumwater Townhomes multi-family residential project located at 715 Dennis St SE in Tumwater, Washington.

This Report will fulfill the requirements outlined in the Tumwater Municipal Code section 16.08 *Protection of Trees and Vegetation*, an online version of which can be found here: https://www.codepublishing.com/WA/Tumwater/html/Tumwater16/Tumwater1608.html

Project Narrative

The proposed project site consists of two parcels with a combined size of 10.5 acres. Parcel #79300001100 (henceforth referred to as the "west parcel" or "developed parcel") will be developed while parcel #79300001200 (henceforth referred to as the "east parcel" or "undeveloped") will be left in its natural state. The development of the west parcel will include the addition of 24 multi-family townhomes, as well as associated driveways, sidewalks, and shared open spaces. Additional landscaping will be provided around the townhomes, open spaces, perimeter, and along street frontage improvements to meet city code requirements (*TMC 18.47 Landscaping*). The southeast corner of this parcel is occupied by an existing wastewater lift station and gravel access drive. A wetland occupies part of the northeast corner of the site. The east parcel will be designated tree tract / open space (along with the north portion of the west parcel) and will not be developed.

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Scope of Work

This site evaluation was conducted to achieve the following goals:

1.) Complete a full tree inventory of existing trees 6" in diameter or larger on parcel #79300001100 and a plot sample tree inventory on parcel #79300001200 of existing trees 6" in diameter or larger;
2.) Make recommendations for tree retention and/or replacement per the City of Tumwater tree code;
3.) Prepare a tree protection plan;
4.) Provide information on and procedures for tree protection of on-site and off-site trees (where CRZ extends on-site) that meet, at minimum, the standards set forth by the City of Tumwater tree code; and
5.) Provide any other recommendations necessary to meet the minimum standards set forth by the City of Tumwater tree code.

Methodology

On **November 25, 2024**, SCJ conducted a site visit for the purpose of inventorying existing trees on site. All significant trees down to a caliper size of 6" were surveyed on the west parcel. On the east parcel, plot sampling was used to estimate the quantity of trees down to a caliper size of 6". Red Alders were not surveyed and are not included in this report, as they are not considered significant trees and do not count toward tree retention standards (*TMC 16.08.070*). Off-site trees that have the potential to be impacted by construction were also surveyed and are included in the inventory of this report

Trees were evaluated for health and general condition only, based on a limited visual inspection (no core sampling, root excavation, or aerial inspection). A tree risk assessment was not included as part of this report. This tree evaluation used methodology developed by Matheny and Clark (1998)[1] and the International Society of Arboriculture.

Existing Conditions

The proposed project site consists of two parcels with a combined size of 10.5 acres. The west parcel (#79300001100) is 5.86 acres and is currently vacant; it consists of a large grass field consisting largely of Scotch broom (*Cytisus scoparius*). The field appeared to have been mechanically cleared up to the property lines, likely within the last few months based on the limited plant regrowth. A grove of young (3-8" DBH) Douglas fir trees is located to the south of the parcel, adjacent to Tumwater Blvd. Smaller groves follow the property line shared with the adjacent commercial property to the west. Individual groups of one to six trees can be found scattered throughout the parcel. Total tree canopy coverage is approximately 15% of the total vegetative cover for this parcel. A wetland occupies part of the northeast corner of the site, with evidence of beaver activity on the property. The border with the wetland consists of dense thickets of Himalayan blackberry (*Rubus armeniacus*), which is covering the remnants of a dilapidated chain link fence. There are currently no structures or concrete

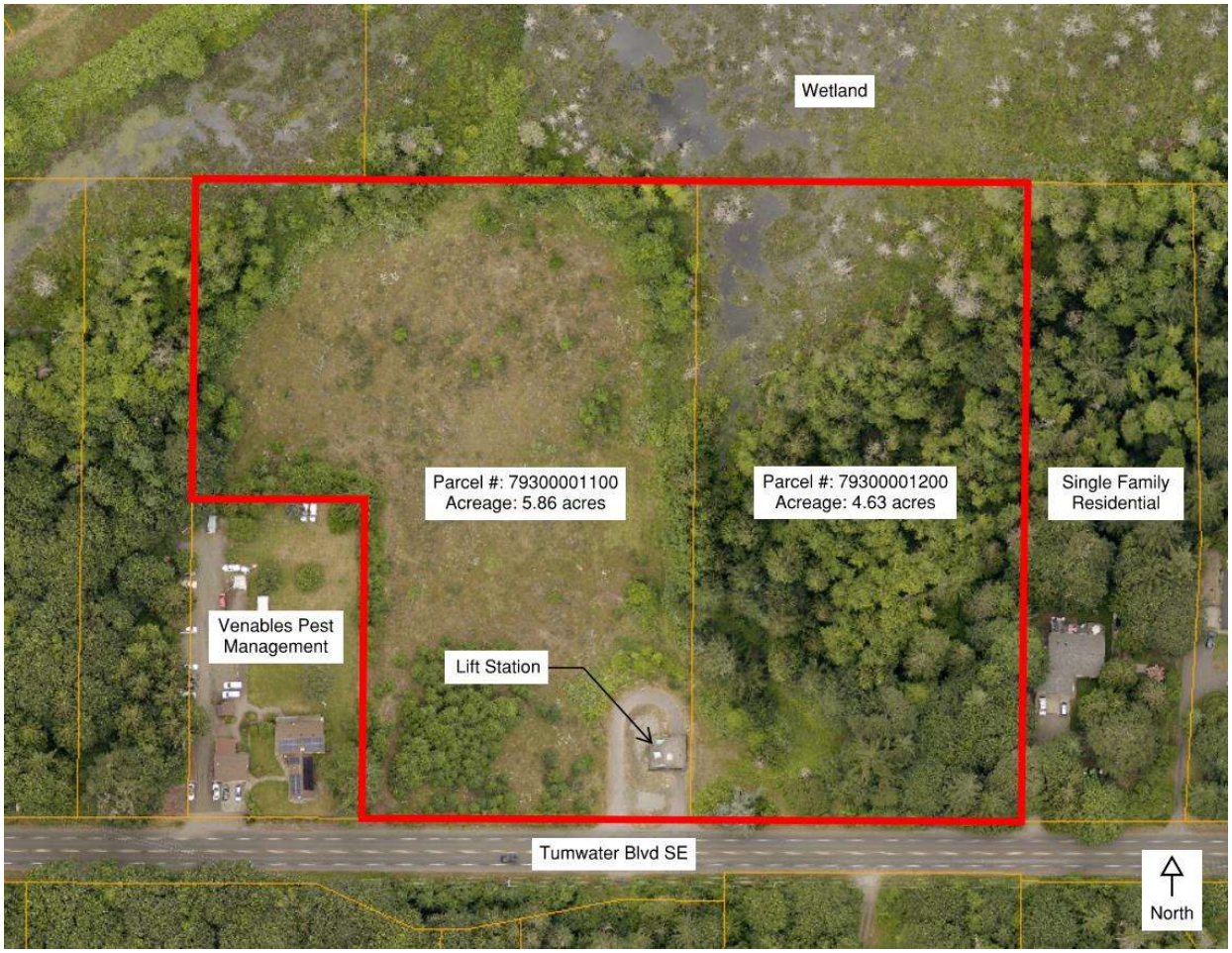
[1] Matheny, Nelda and Clark, James R. Trees and Development: A Technical Guide to Preservation of Trees During Land Development, International Society of Arboriculture, Champaign, Il, 1998.

pads located on the parcel. The locations of inventoried trees for this parcel can be found on the attached site plan *(Appendix A: Locations of Existing Trees In and Adjacent to West Parcel).*

The east parcel (#79300001200) is 4.63 acres and is heavily wooded, consisting primarily of native tree species such as Douglas fir (*Pseudotsuga menziesii*), Western hemlock (*Tsuga heterophylla*), Western redcedar (*Thuja plicata*), and big leaf maple (*Acer macrophyllum*). Understory vegetation is moderately dense. Total tree canopy coverage is approximately 70% of the total vegetative cover for this parcel. This parcel also contains approximately 25% wetland in its northernmost portion. This parcel will be designated as a tree tract / open space and will not be developed. The quantity of trees 6" or larger this parcel was determined by plot sampling. An inventory of trees for this parcel can be found in *Table B: Inventory of Trees In East Parcel*.

The entire project site is bordered to the north by a large wetland. To the west it is bordered by a commercial property occupied by a pest management company and, to the east, a single family residential property. To the south, the property fronts Tumwater Boulevard. (See *Figure A: Aerial View of Project Site* below)

Figure A: Aerial View of Project Site



(Image source: Thurston County GeoData Center)

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Soils

According to the Thurston County Soil Survey, there may be two soil types present on site: Indianola loamy sand (55-60% of site) and Norma silt loam (40-45% of site).

Indianola series soils consist of very deep, somewhat excessively drained soils formed in sandy glacial drift. The slope range for this soil type is estimated to be between 0% and 15% at this project site.

Norma series soils consist of deep, poorly drained soils formed in old alluvium in depressions on glacial till plains and drainageway. The slope range for this soil type is estimated to be between 0% and 3% at this project site. These soils are associated with a high water table, as high as 1 foot above to 1 foot below the surface of the soil. Runoff is slow and prone to ponding.

Windthrow Potential

Prevailing winds at this location generally approach from the southwest. Given the western orientation of the existing forest edge which is not expected to be impacted by development, future windthrow hazard is estimated to be negligible under normal weather conditions.

Vegetation

There are five distinct types of vegetated landscapes on the site (see *Figure B* below):

Type 1 is located primarily at the center of the developed west parcel and consists of a vacant grass field, interspersed with patches of Scotch broom and weedy perennials. Small clusters of 2-4” Douglas fir trees are located throughout this area. Trees in this area were inventoried individually.

Type 2 is located primarily at the southwest corner of the developed parcel and consists of young (3” to 8”) Douglas fir (*Pseudotsuga menziesii*) trees with negligible understory or vegetative groundcover present. Trees in this area were inventoried individually.

Type 3 is located on approximately 75% of the undeveloped east parcel and along the western edge of the developed west parcel. It consists of the native tree, understory and groundcover species typical of this part of Western Washington. Dominant tree species include Douglas fir, Western hemlock, Western redcedar, and big leaf maple. The understory is heavily shaded, with fern species such as Western sword fern (*Polystichum munitum*) and deer fern (*Struthiopteris spicant*) dominating. Trees in and adjacent to the west parcel were inventoried individually, while trees in the east parcel were inventoried via plot sampling.

Type 4 is located on around the perimeter of the developed west parcel and consists primarily of invasive Himalayan blackberry.

Type 5 is a wetland. Assessment of wetlands and the inventory of plants therein is not included in the scope of this report.

No ornamental landscaping is present on the site.

The locations of individually inventoried trees can be found on the attached site plan *(Appendix A: Locations of Existing Trees In and Adjacent to West Parcel).*

Figure B: Locations of Vegetation Types

(Image source: Thurston County GeoData Center)

Tree Inventory

On November 25, 2024, SCJ conducted an inventory of 100% of the trees (6" DBH or larger) within the west parcel (#79300001100) of the project site. Select off-site trees that may be impacted by development were also inventoried. Trees on the east parcel (#79300001200) were estimated via plot sampling, as this parcel is not anticipated to be impacted by development of the site.

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Our survey recorded species, diameter at breast height (DBH), location, and general condition only. A risk assessment of surveyed trees was not included.

Those trees are listed in the table below, with their approximate locations noted on the attached *Appendix A: Locations of Existing Trees In and Adjacent to West Parcel*. Those trees slated for removal due to construction impact are noted on the attached *Appendix B: Locations of Existing Trees to be Removed*.

Table A: Inventory of Trees In and Adjacent to West Parcel

Tree ID	Tree Species	DBH (Inches)	Tree Condition	Retain/ Remove	Tree Credit Value	Remarks
33	Red Oak	20.5	Good	Remove	1	
34	White Fir	26	Good	Remove	2	
35	White Fir	31	Good	Remove	2	
36	Yew	8	Good	Retain	0	Multi-stem; moderate likelihood of impact to CRZ from construction
37	Yew	10	Good	Retain	0	Multi-stem; low likelihood of impact to CRZ from construction
38*	Unknown Deciduous	30	Poor	Remove	0	Completely obscured by English Ivy
39	Douglas Fir	6.5	Good	Retain	1	
40	Douglas Fir	6.7	Good	Remove	1	
42	Douglas Fir	6	Good	Remove	1	
43	Douglas Fir	7.5	Good	Retain	1	
44	Douglas Fir	7.5	Good	Retain	1	
45	Douglas Fir	7.5	Good	Retain	1	
46	Douglas Fir	7	Good	Retain	1	
47	Douglas Fir	7	Good	Retain	1	
48	Douglas Fir	8	Good	Retain	1	
49	Western Hemlock	13	Good	Retain	1	Located adjacent to wetland
50	Douglas Fir	8.5	Good	Retain	1	
51	Douglas Fir	8.5	Good	Retain	1	
52	Douglas Fir	6	Good	Remove	1	
53	Douglas Fir	7.5	Good	Retain	1	
54	Douglas Fir	6.5	Good	Retain	1	
55	Douglas Fir	6.5	Good	Retain	1	
56	Western Hemlock	11.5	Good	Retain	1	
57	Douglas Fir	10	Good	Retain	1	
58	Western Redcedar	21	Good	Retain	1	

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59	Western Hemlock	22	Good	Retain	1	On fence
60	Western Redcedar	37	Good	Retain	2	
62*	Western Hemlock	16	Good	Retain	0	Located off-site; low likelihood of impact to CRZ from construction
63	Big Leaf Maple	22.5	Good	Retain	1	
64*	Western Hemlock	16.5	Good	Retain	0	Located off-site; low likelihood of impact to CRZ from construction
66	Big Leaf Maple	12	Good	Retain	1	
67	Douglas Fir	8	Good	Retain	1	
68	Douglas Fir	6	Good	Retain	1	
69	Douglas Fir	6	Good	Retain	1	
70	Douglas Fir	7	Good	Retain	1	
71	Douglas Fir	7.5	Good	Retain	1	
72	Douglas Fir	7.5	Good	Retain	1	
73	Douglas Fir	6	Good	Retain	1	
74	Douglas Fir	6	Good	Retain	1	
75*	Douglas Fir	30	Good	Retain	0	Off property; High likelihood of impact to CRZ from construction
76	Douglas Fir	6	Good	Retain	1	
77	Douglas Fir	6	Good	Retain	1	
78	Douglas Fir	6.5	Good	Retain	1	
79	Douglas Fir	6.5	Good	Retain	1	
80	Douglas Fir	6	Good	Remove	1	
81	Douglas Fir	6	Good	Remove	1	
82	Douglas Fir	6.5	Good	Remove	1	
83	Douglas Fir	7	Good	Remove	1	
84	Douglas Fir	7.5	Good	Retain	1	
85	Douglas Fir	6	Good	Retain	1	
86	Douglas Fir	6.5	Good	Retain	1	
87	Douglas Fir	6	Good	Remove	1	
88	Douglas Fir	6.5	Good	Remove	1	
89*	Douglas Fir	30	Good	Retain	0	Off property; High likelihood of impact to CRZ from construction
90*	Douglas Fir	24	Good	Retain	0	Off property; High likelihood of impact to CRZ from construction
91*	Douglas Fir	30	Good	Retain	0	Off property; High likelihood of impact to CRZ from construction
92*	Lodgepole Pine	14	Good	Retain	0	Off property; High likelihood of impact to CRZ from construction
93	Douglas Fir	6	Good	Retain	1	On fence
94	Douglas Fir	7.5	Good	Remove	1	

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95	Douglas Fir	6	Good	Remove	1	
96	Douglas Fir	6	Good	Remove	1	
97	Douglas Fir	7	Good	Remove	1	
98	Douglas Fir	7	Good	Remove	1	
99	Douglas Fir	7	Good	Remove	1	
100	Douglas Fir	6.5	Good	Remove	1	
101	Douglas Fir	6.5	Good	Remove	1	
102	Douglas Fir	6	Good	Remove	1	
103	Douglas Fir	6	Good	Remove	1	
104	Douglas Fir	7	Good	Remove	1	
105	Douglas Fir	6	Good	Remove	1	
106	Douglas Fir	6.5	Good	Remove	1	
107	Douglas Fir	6	Good	Remove	1	
108	Douglas Fir	7	Good	Remove	1	
109	Douglas Fir	7	Good	Remove	1	
110	Douglas Fir	6.5	Good	Remove	1	
111	Douglas Fir	7	Good	Remove	1	
112	Douglas Fir	6	Good	Remove	1	
113	Douglas Fir	8	Good	Remove	1	
114	Douglas Fir	8.5	Good	Remove	1	
115	Douglas Fir	7	Good	Remove	1	
116	Douglas Fir	7.5	Good	Remove	1	
117	Douglas Fir	7.5	Good	Remove	1	
118	Douglas Fir	7	Good	Remove	1	
119	Douglas Fir	6.5	Good	Remove	1	

*Does not count toward tree calculations due to either size, condition, or location (off property).

Notes:

1.) A “Significant tree” means a tree at least six inches at DBH, excluding trees of the following genera: *Populus sp., Alnus spp.,* and *Salix spp. (TMC 16.08.070)*
2.) For multi-stem trees, an average DBH was calculated by adding the total caliper inches of all stems at breast height and dividing that number by the total number of stems. *Ex: (5”+6”+8”)/3 stems = 6” DBH*
3.) For the purpose of calculating tree retention standards, trees twenty-four inches or greater in diameter measured four and one-half feet above ground level shall count as two trees. *(TMC 16.08.070)*

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Table B: Inventory of Trees In East Parcel

Tree Species	DBH (Inches)	Estimated % of Trees	Estimated # of Trees	Tree Credit Value
Douglas Fir	1”-6”	5%	18	0
	6”-12”	15%	53	53
	12”-24”	15%	53	53
	24”-36”	10%	36	71*
	36”-42”	0%	0	0*
Western Hemlock	1”-6”	5%	18	0
	6”-12”	5%	18	18
	12”-24”	10%	36	36
	24”-36”	5%	18	36*
	36”-42”	0%	0	0*
Western Redcedar	1”-6”	5%	18	0*
	6”-12”	8%	28	28
	12”-24”	5%	18	18
	24”-36”	5%	18	36*
	36”-42”	0%	0	0*
Big Leaf Maple	1”-6"	0%	0	0
	6”-12”	5%	18	18
	12”-24”	2%	7	7
	24”-36”	0%	0	0*
	36”-42”	0%	0	0*

Notes:

1. Estimated tree quantities are based on a 50’ x 50’ sample plot size.
2. Trees with a DBH of less than 6” are not considered significant and do not count toward the tree credit total.
3. Totals with an asterisk (*) indicate trees twenty-four inches or greater in diameter which count as two trees per *TMC 16.08.070*.

Landmark Trees

There are no trees on the project site that I would consider to be specimen or “Landmark” trees.

Tree Density Calculations

Due to direct conflicts with the proposed site improvements, some on-site trees will be removed. These trees are indicated with red X’s on the attached site plan *(Appendix B: Locations of Existing Trees to be Removed).*

Total Acreage of Project Site:	10.5 Acres
Existing Significant Trees in West Parcel:	73 Trees
Existing Significant Trees in East Parcel:	374 Trees*
Required 20% Tree Retention:	90 Trees
-or-	
Required 12 Trees/Acre Retention:	126 Trees
Existing Significant Trees to be Removed for Construction:	40 Trees
Total On-site Trees to be Retained:	407 Trees
Replacement Trees Required:	**0 Trees**

*Estimate based on plot sample

Notes:

1.) For the purpose of calculating tree retention standards, trees twenty-four inches or greater in diameter measured four and one-half feet above ground level shall count as two trees. *(TMC 16.08.070)*

2.) When land clearing is performed in conjunction with a specific development proposal, not less than twenty percent of the trees, or not less than twelve trees per acre (whichever is greater), shall be retained. (*TMC 16.08.07*)

Following the necessary removal of 34 significant trees due to construction, the total number of remaining trees on-site will remain greater than the minimum retention required by code. Therefore, no replacement trees will be required.

Off-Site Trees / Tree Protection

There are several trees throughout the property and along the property boundary that have the potential of being impacted by the project and/or the removal of adjacent trees. It is recommended that tree protection fencing be installed according to the attached detail (*Appendix D: Tree Protection Fencing Detail*) in the locations indicated on the attached map (*Appendix C: Locations of Tree Protection Fencing*). The farther the tree protection fencing can be placed away from the potentially affected off-site trees, the greater the area of critical root zone that will be protected and, thus, the greater the likelihood that these trees will recover from the impact of construction.

Respectfully submitted,

Colin W. Owen, SCJ Alliance
ISA Certified Arborist (PN-9606-A)
ISA Tree Risk Assessment Qualified

Appendices

Appendix A – Locations of Existing Trees
Appendix B – Locations of Existing Trees to be Removed
Appendix C – Locations of Tree Protection Fencing
Appendix D – Tree Protection Fencing Detail
Appendix E – Definitions
Appendix F – Assumptions and Limiting Conditions

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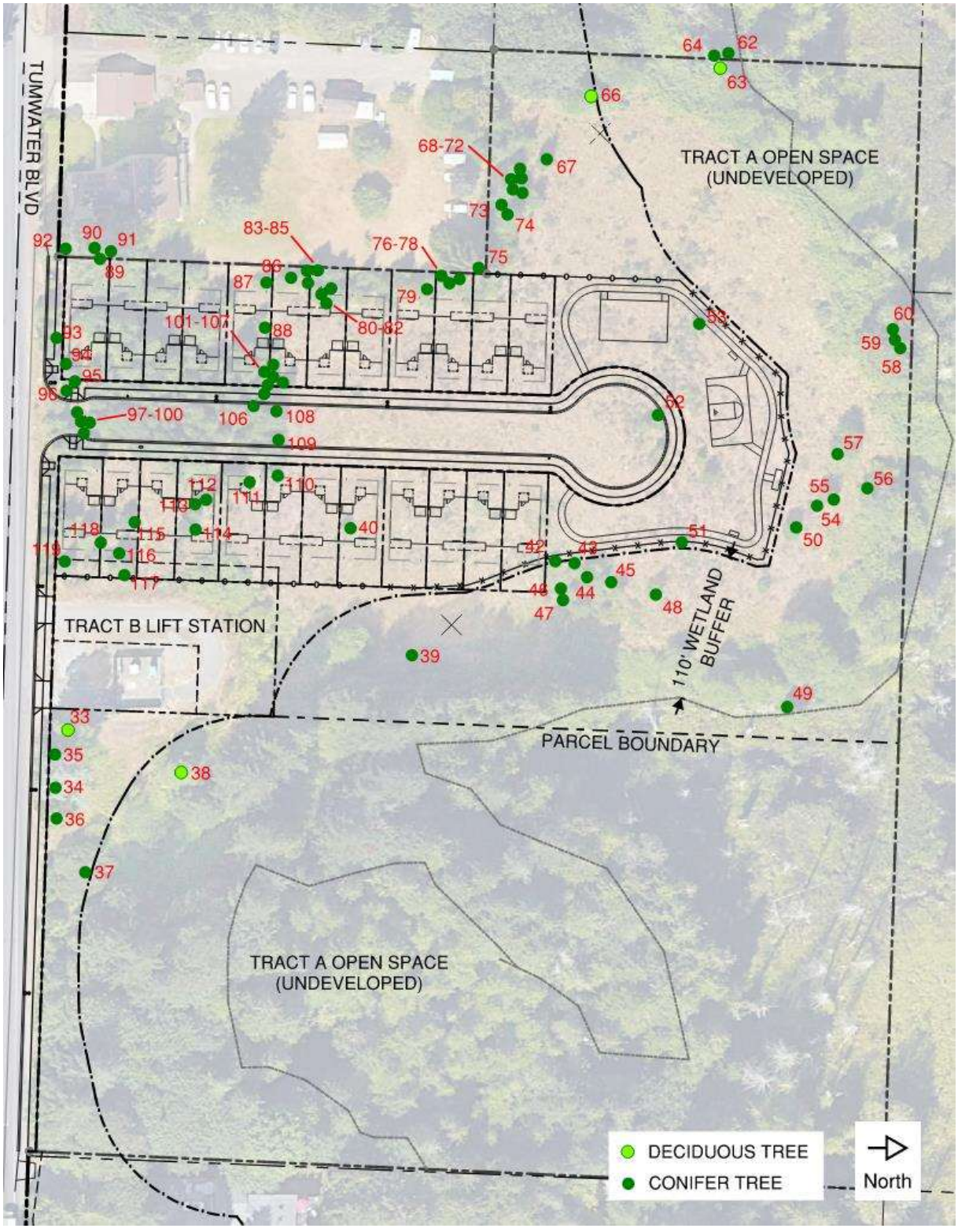
Appendix A: Locations of Existing Trees In and Adjacent to West Parcel



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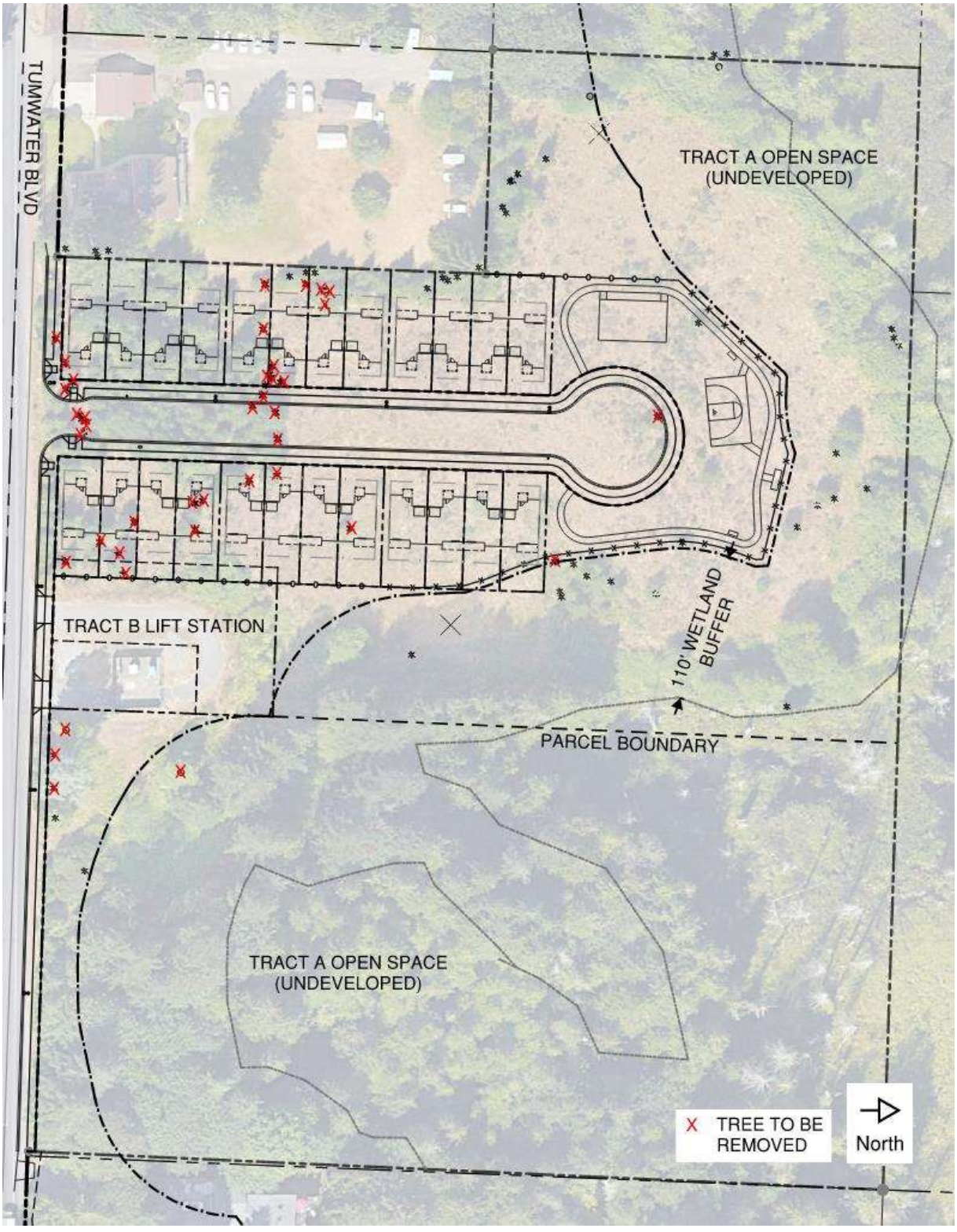
Appendix B: Locations of Existing Trees to be Removed



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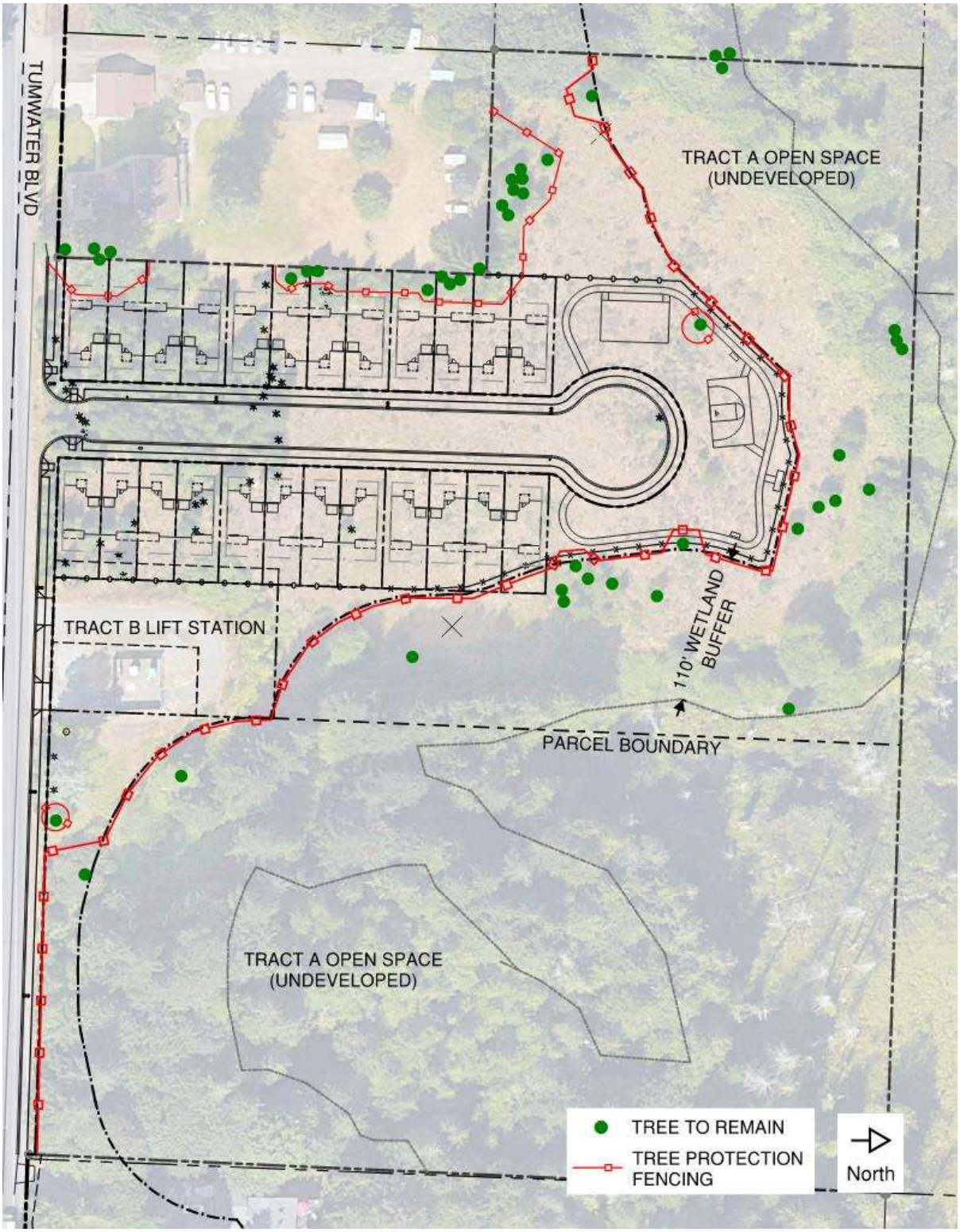
Appendix C: Locations of Tree Protection Fencing



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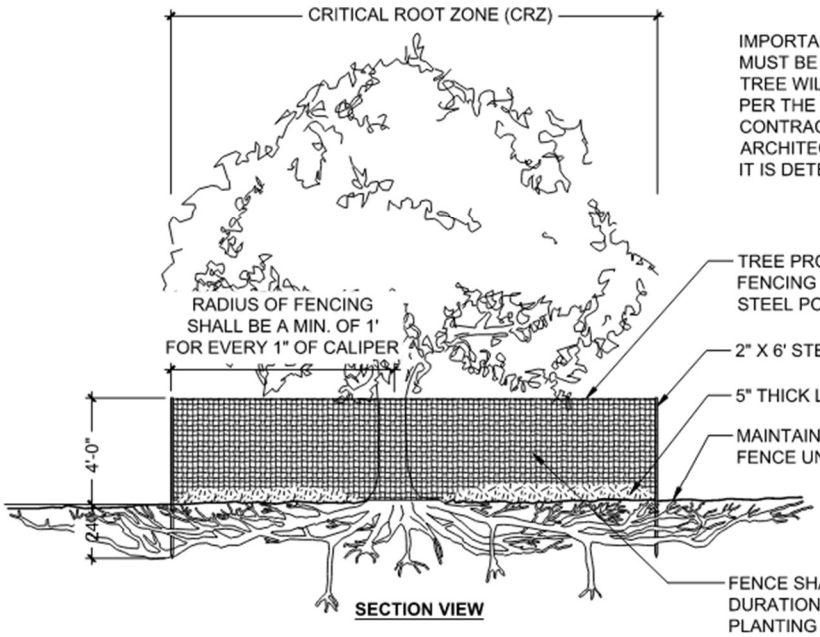
Appendix D: Tree Protection Fencing Detail



IMPORTANT: ALL TREES INDICATED AS "TO REMAIN" MUST BE RETAINED. FAILURE TO RETAIN ANY INDICATED TREE WILL RESULT IN CONTRACTOR REPLACING TREE PER THE CITY OR OTHER REQUIREMENTS. CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT, FORESTER AND/OR CITY (AS APPLICABLE) IF IT IS DETERMINED THAT A TREE CANNOT BE RETAINED.

TREE PROTECTION FENCE: HIGH DENSITY POLYETHYLENE FENCING WITH 3.5" X 1.5" OPENINGS; COLOR- ORANGE. STEEL POSTS INSTALLED AT 8' O.C.

2" X 6' STEEL POSTS OR APPROVED EQUAL

5" THICK LAYER OF MEDIUM BARK MULCH

MAINTAIN EXISTING GRADE WITH THE TREE PROTECTION FENCE UNLESS OTHERWISE INDICATED ON THE PLANS

FENCE SHALL BE MAINTAINED THROUGHOUT DURATION OF CONSTRUCTION. ALL CLEARING AND PLANTING WITHIN THE ROOT ZONE SHALL BE DONE BY HAND.

TREE PROTECTION NOTES

1. NO PRUNING SHALL BE PERFORMED EXCEPT BY CERTIFIED ARBORIST.
2. NO EQUIPMENT SHALL OPERATE INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
3. PLACING MATERIALS NEAR TREES: NO PERSON MAY CONDUCT ACTIVITY WITHIN THE CRITICAL ROOT ZONE (CRZ) OF ANY EXISTING TREE TO BE RETAINED. THIS INCLUDES, BUT IS NOT LIMITED, TO: PARKING EQUIPMENT, PLACING SOLVENTS, STORING BUILDING MATERIAL AND SOIL DEPOSITS, DUMPING CONCRETE WASH OUT AND LOCATING BURN HOLES.
4. PROTECTIVE BARRIER. BEFORE DEVELOPMENT, LAND CLEARING, FILLING OR ANY LAND ALTERATION, THE CONTRACTOR:
   A. SHALL FIELD VERIFY LOCATION, SIZE AND SPECIES TO DETERMINE CRZ.
   B. SHALL ERECT TREE PROTECTION FENCING AROUND THE CRZ OF THE TREE, AS DESCRIBED IN THE TEMPORARY TREE PROTECTION FENCE DETAIL. THE FENCING SHALL BE RETAINED THROUGHOUT CONSTRUCTION.
   C. SHALL PROHIBIT GRADING, TRENCHING, CUTTING, IMPERVIOUS SURFACING, OTHER CONSTRUCTION, COMPACTION OF EARTH, OR OTHER POTENTIALLY DAMAGING ACTIVITIES WITHIN THE CRZ OF EXISTING TREES.
   D. SHALL ENSURE THAT ANY CLEARING OR LANDSCAPING DONE WITHIN THE DRIP LINE SHALL BE ACCOMPLISHED WITH HAND LABOR ONLY.
   E. SHALL ENSURE NO ROOTS GREATER THAN 2" SHALL BE CUT.
5. ATTACHMENTS TO TREES: DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY OBJECT TO ANY EXISTING TREE.
6. THE CRITICAL ROOT ZONE (CRZ) IS DEFINED AS AN AREA WITH A RADIUS OF ONE FOOT FOR EACH CALIPER INCH OF THE TREE TO BE RETAINED, OR THE AREA WITHIN THE DRIP LINE OF THE TREE, WHICHEVER IS GREATER. IF THE TREE IS AN OAK, THE CRZ EXTENDS TO ONE AND ONE-HALF TIMES THE RADIUS OF THE CANOPY.
7. RETURN ALL AREAS TO THEIR PRE-CONSTRUCTION STATE AFTER INSTALLATION IS COMPLETE.

1 TREE PROTECTION FENCING
1/4" = 1'-0"

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Appendix E: Definitions & Explanations

Explanation of Tree Conditions

Poor – A tree described with a poor condition would have a combination of the following features: low vigor, sparse crown density, and few interior branches. The crown could be unbalanced or contain many dead twigs/branches. It may also have been topped, tipped, or mal pruned. The trunk could have cracks, cavities, conks/mushrooms, and evidence of decay within the tree.

Fair – A fair description would describe a tree with normal vigor and crown density. The tree may possess one or possibly two of the above listed qualities but overall is in decent health. Improvements of site conditions could improve the trees health.

Good – Trees listed in good condition will have high vigor with a thick crown density. It would have few, if any defects, and would be a good example of that specific tree.

Excellent – An excellent rating indicates a tree with high vigor and exceptional growth characteristics such as height or girth. It would have few, if any, defects and would be aesthetically pleasing as a stand-alone or specimen tree.

Definitions

DBH - Tree size is measured in Diameter at Breast Height (DBH) – standard forestry methodology for measuring tree size. This is typically four and one-half feet above the ground.

Critical Root Zone (CRZ) –the CRZ is an area on the ground having, at minimum, a radius of one foot for every one inch of tree diameter, measured from four and one-half feet above ground level. In no event shall the root protection zone be less than a six-foot radius. The CRZ may also be referred to as the Root Protection Zone (RPZ).

Calculating DBH of Multi-Stemmed Trees – The average DBH is calculated by adding the total caliper inches of all stems at breast height and dividing that number by the total number of stems. *Ex: (5”+6”+8”)/3 stems = 6”*

Drip line – An imaginary line on the ground created by the vertical projections of the foliage. Most trees in groves do not have symmetrical driplines. Therefore, drip line radius may be measured in the quadrant assumed to be most affected by future disturbance or where most significant.

Hazardous Tree - Any tree that, due to its health or structural defect, presents a risk to people or property.

Heritage Tree – A tree designated by the city and its owners as historical, specimen, rare, or a significant grove of trees.

Interior Tree – A tree within a stand of trees, protected from wind exposure

Likelihood – the chance of an event occurring. In the context of tree failures, the term may be used to specify : 1) the chance of a tree failure occurring; 2) the chance of impacting a specified target; and 3) the combination of the likelihood of a tree falling and the likelihood of impacting a specified target.

Limits of Disturbance – Limits of disturbance shall relate to either Critical Root Zone (CRZ) or Dripline Radius, due to exceedingly wide drip line radii on some trees being out of proportion to actual tree size. CRZ is measured at 1 foot of distance from center of trunk for every inch diameter at 4.5 feet above grade.

Live Crown Ratio (LCR) – the ratio of crown length to total tree height.

Open-grown – a tree that has grown with exposure to wind and other elements from all directions.

Parcel – a tract or plot of land of any size which may or may not be subdivided or improved.

Risk – The combination of the likelihood of an event and the severity of the potential consequences. In the context of trees, risk is the likelihood of a conflict or a tree failure occurring and affecting a target, and the severity of the associated consequences – personal injury, property damage, or disruption of activities.

Root Protection Zone (RPZ) – See Critical Root Zone (CRZ)

Topping - The removal of the upper crown of a tree with no consideration of proper cuts as per the current ANSI A300 Standard. Cuts created by topping create unsightly stubs that promote decay within the parent branch and can cause premature mortality of a tree. In certain municipalities, topping a tree is considered to be a removal, and may require a tree removal permit.

Significant Tree (Tumwater) - "Significant tree" means a tree at least six inches in diameter, excluding trees of the following genera: *Populus spp.*, *Alnus spp.*, and *Salix spp.*

Tree - Any healthy living woody plant characterized by one or more main stems or trunks and many branches, and having a diameter of six inches or more measured four and one-half feet above ground level. Healthy in the context of this definition shall mean a tree that is rated by a professional with expertise in the field of forestry or arbor culture as fair or better using recognized forestry or arbor cultural practices. If a tree exhibits multiple stems and the split(s) or separation(s) between stems is above grade, then that is considered a single tree. If a tree exhibits multiple stems emerging from grade and there is visible soil separating the stems, then each soil-separated stem is considered an individual tree. This is considered a rule of thumb only and may vary depending on the growth characteristics of individual species. Tree species under six inches may be considered significant with approval of the city tree protection professional.

Tree Tract Open Space – a separate dedicated area of land, specifically set aside for the protection and planting of trees.

Windthrow – uprooting and overthrowing of a tree caused by wind.

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Appendix F: Assumptions and Limiting Conditions

1.) A field examination of the site was made on **November 25, 2024**. The observations and conclusions presented in this report are as of that date.

2.) To enjoy the many benefits that trees provide, some degree of risk must be accepted. Even healthy trees without obvious defects can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. Annual monitoring by an ISA Certified Arborist or Certified Forester will reduce the potential of tree failures.

3.) When a tree fails, it is considered an 'Act of God.' While there are many different definitions of an Act of God, it's generally considered to be an unanticipated natural disaster or other natural phenomenon whose effects would not have been prevented or avoided by due care or foresight.

4.) Any legal description (whether graphic or narrative) provided to SCJ Alliance is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

5.) It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, unless otherwise stated.

6.) Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, SCJ Alliance can neither guarantee nor be responsible for the accuracy of information.

7.) SCJ Alliance shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

8.) Loss or alteration of any part of this report will invalidate the entire report.

9.) If a tree risk assessment is included as part of this report, it shall be considered valid only for the stated period of time.

10.) Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any entity other than the person to whom it is addressed, without the prior expressed written or verbal consent of SCJ Alliance.

11.) Neither all nor any part of the contents of this report, or copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of SCJ Alliance – particularly as to value conclusions, identity of SCJ Alliance, or any reference to any professional society or to any initialed designation conferred upon SCJ Alliance as stated in its qualifications.

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12.) This report and any values expressed herein represent the opinion of SCJ Alliance, and the fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence neither of a subsequent event, nor upon any finding in to reported.

13.) Any sketches, diagrams, graphs, photographs, etc. referenced in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

14.) Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the tree or other plant or property in question may not arise in the future.

JSA CIVIL
Engineering | Planning | Management

Tumwater Blvd Townhome Condos

715 Dennis Street SE
Tumwater, WA 98501

STORMWATER SITE PLAN

PREPARED FOR:
TODD HANSEN
TENINO LAND COMPANY, LLC

PREPARED BY

JSA CIVIL
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Appendix 1: Basin Map
Appendix 2: Web Soil Survey
Appendix 3: Wetlands Report
Appendix 4: WWHM Flow Results
Appendix 5: Engineering Plans

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PROJECT ENGINEER'S CERTIFICATION

"I hereby state that this Drainage and Erosion Control Plan/Construction SWPPP for the Tumwater Blvd Townhome Condos project has been prepared by me or under my supervision and meets the requirements of the City of Tumwater Drainage Design and Erosion Control Manual and the standard of care and expertise which is usual and customary in this community for professional engineers. I understand that the City of Tumwater does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities prepared by me."

5/16/2025

Whitney Dunlap, PE — Date

STORMWATER SITE PLAN

The following report was prepared for the proposed Tumwater Blvd Townhome Condos Project. This project was prepared to comply with the minimum technical standards and requirements that are set forth in the *2022 City of Tumwater Drainage Design and Erosion Control Manual (DDECM)*.

SECTION 1: PROPOSED PROJECT DESCRIPTION

This report has been prepared to document the drainage design for the proposed Tumwater Blvd Townhome Condos for preliminary drainage. The project proposes to include 6 condo buildings (4 units each), curb/gutter/sidewalks along the project's roadway frontage, on-site stormwater facilities, landscaping, and new underground utilities. City of Tumwater water and sanitary sewer will be connected to serve the development.

Site Information:

- Thurston County TPN: 79300001100 & 79300001200
- Site Size (per GeoData): 10.49 ac
- Site Size (per survey) ± 10.77
- Site Address: 715 Dennis Street SE & 934 Tumwater Blvd SE
- Zoning: Single Family Medium Density Residential (SFM & SFM2)

The proposed residential development will result in more than 5,000 ft^2 of new impervious surface. In accordance with the *DDECM*, a Drainage Report is required for this project. As a result, Minimum Requirements 1-11 will need to be addressed. See Table 1 below with the outline of how the project will address the 11 Core Requirements.

Table 1: Compliance with Minimum Technical Requirements

MINIMUM REQUIREMENT	COMPLIANCE WITH MINIMUM REQUIREMENT
#1 - Stormwater Site Planning	The contents of this report and all included appendices are intended to satisfy this requirement.
#2 - Construction SWPPP	A Construction SWPPP will be completed with the final drainage report
#3 - Source Control of Pollution	All known, available, and reasonable source control BMPs shall be applied to all projects to prevent stormwater from coming in contact with pollutants on the developed site.
#4 - Drainage Path Preservation	Preservation of the site's previously established natural drainage paths will be maintained to the maximum extent practicable.
#5 - Stormwater Management	Stormwater LID BMPs will be implemented/constructed to mitigate stormwater runoff. Refer to this report and the stormwater site plan.
#6 - Runoff Treatment	The project will utilize BMP T5.30 Full Dispersion to meet this minimum requirement.
#7 - Flow Control	This project is providing Flow Control by implementing BMP T5.30 Full Dispersion.
#8 - Wetlands Protection	The existing site includes wetlands which will receive stormwater runoff from the proposed improvements that will maintain the wetland hydrology.
#9 - Operation and Maintenance	An Agreement to Maintain Stormwater Facilities will be recorded against the property, if required.

#10 - Financial Liability	A Bond Quantities Worksheet will be completed during final permitting.
#11 - Offsite Analysis and Mitigation	This project will utilize Full Dispersion to meet Core Requirement #7, discharging stormwater towards the existing wetland as under existing conditions therefore no off-site mitigation is required.

SECTION 2: EXISTING SITE CONDITIONS

This is located on an approximately 10.77-acres bounded by Tumwater Blvd to the south, with surrounding residential uses. An existing wetland complex is located north of the property. The site has moderately slopes, generally sloping towards the northeast corner of the property at an average of 5.5% grade. Elevations on site range from 140 to 170 NGVD 29. The site has remained relatively unchanged in the previous 25 years, with some new buildings and trees planted as shown in Figure 1, aerials from 1996 and 2022. There was an existing residence on the eastern parcel that was removed sometime between 2006 to 2009 based on aerials. There is an existing sewer lift station located on the southeast corner of the west parcel constructed as part of the Deschutes River Highland development. The lift station is maintained by the City of Tumwater and is located within an easement.

Figure 1: Site Imagery from 1996 (above) and 2022 (below)

According to FEMA Community Panel Number 53067C0282G, the project is located outside of the 100-year flood zone.

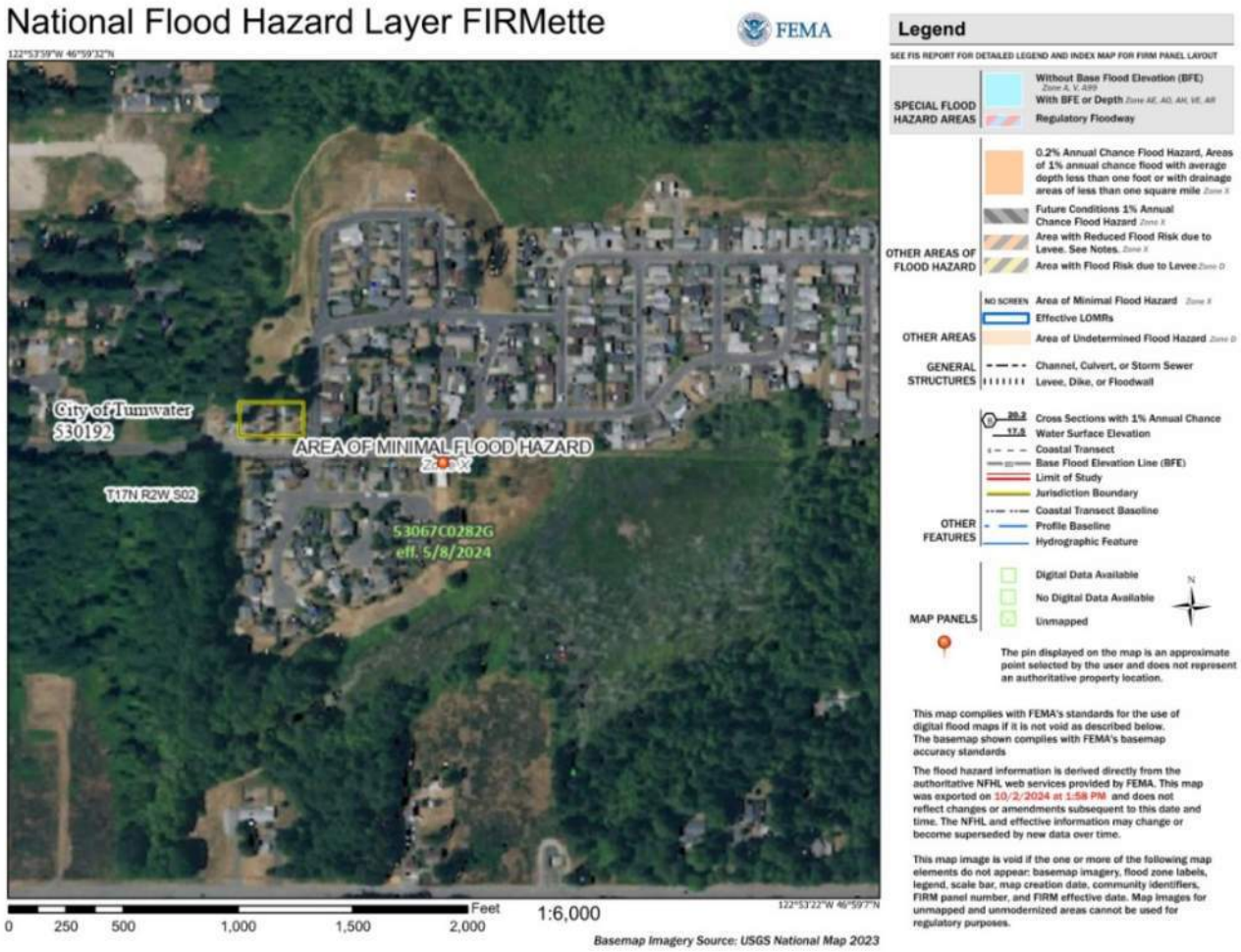


Figure 2: FEMA MAP

SOILS:
Based on the United Stated Department of Agriculture, Web Soil Survey list the soil type on site as Indianola Loamy Sand. This is considered a Type A soil. See Appendix 2 for Web Soil Survey Report.

WETLAND REPORT:
A wetland report was completed by Land Services Northwest on July 15th, 2024. A 110' buffer has been implemented and can be seen in the Constructions Documents in Appendix 5.

SECTION 3: VICINITY ANALYSIS AND SUBBASIN DESCRIPTION

The existing site slopes from south to the north towards the existing wetland. To match existing flow paths, all improvements are designed to drain toward the wetland. In addition to preserving the flow path this also maintains wetland hydrology by recharging the wetland.

Tumwater Boulevard currently has an existing ditch along the north and south sides of the roadway. Based on as-built information and prior design plans there are multiple culverts that allow the ditch on

the north side of the roadway (along the project frontage) to overflow to the southern ditch. A site visit was conducted on November 14, 2024 during a rain event to establish condition of the ditches and culverts in the vicinity. In general, ditches were full of leaves and other natural debris. There was no standing water found in the ditches and no water actively flowing through any culverts. Based on the site conditions, it is assumed that most water infiltrates within the existing roadside ditches. For the proposed roadway improvements along Tumwater Boulevard which include additional paving, curb, gutter, planter strip and sidewalk the runoff will be collected via catch basins & conveyance piping and discharged to the existing wetland on-site. Runoff will infiltrate and recharge the wetland after discharge from the dispersion trench.

The proposed improvements are divided into 6 separate basins. These basin areas can be seen below in Figure 3, and the areas can be seen in Table 2.

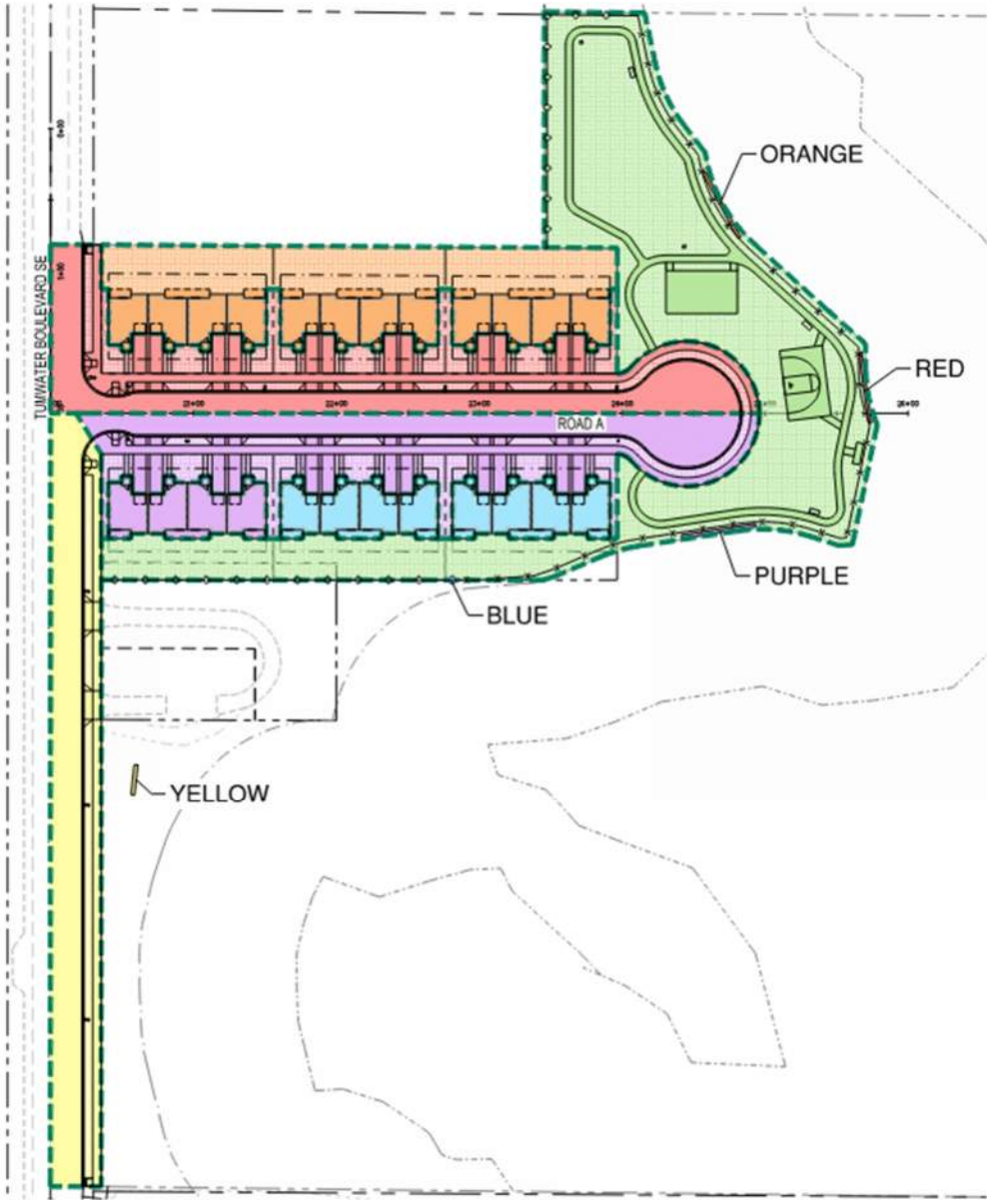


Figure 3: Sub Basin Map

Table 2: Land Type Designations Summary Table

WEST ROOF BASIN (ORANGE)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	11,700	0.27
PERVIOUS	11,285	0.26

SOUTH ROAD BASIN (PURPLE)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	19,740	0.45
PERVIOUS	7,885	0.18

SOUTH ROOF BASIN (BLUE)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	7,800	0.18
PERVIOUS	0	0

SHEET FLOW BASIN (GREEN)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	5,915	0.14
PERVIOUS	29,045	0.67

WEST ROAD BASIN (RED)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	19,355	0.44
PERVIOUS	8,350	0.19

TUMWATER BLVD BASIN (YELLOW)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	16,135	0.37
PERVIOUS	1,945	0.04

SECTION 4: FLOW CONTROL AND WATER QUALITY

Stormwater runoff from this site will be released to the large central wetland in accordance with Section 7.2 Full Dispersion of the DDECM. The list approach for minimum requirement No. 5, on-site stormwater management has been used to analyze the surfaces using List #2.

Lawn and Landscaped Area:
All disturbed lawn and landscaping area will meet BMP 5.30: Post Construction Soil Quality and Depth to satisfy this requirement.

Hard Surfaces:
All hard surfaces will be met using BMP 5.30: Full Dispersion. In order to utilize Full Dispersion, the following criteria must be met:

- Projects that retain 65 percent of the site in a forested or native condition may use dispersion to avoid triggering the flow control facility requirement.
    - The total site area is 10.77 acres, and the area of disturbance on-site is disturbed area of improvements is 2.78 acres 26% of the site area. This leaves 74% in the native condition, therefore this criteria is met.
- Preservation of existing vegetation areas must meet the requirements outlined for BMP C101,
    - The proposed outfall locations flow the existing drainage patterns, therefore this criteria is met.
- A native vegetation flow path of at least 100 feet in length, and no steeper than 15 percent. Flow paths must be spaced to prevent overlap.
    - A minimum of 100’ flow paths has been achieved at a slope of 15% or less, with no overlap. See plans in Appendix 5 for exact flow path locations.
- Concentrated Flows cannot exceed 0.20 cfs for a rock pad location and 0.5 cfs for a dispersion trench location.

- There are 6 discharge locations for these improvements, with 5 of those being concentrated flows. These outfalls were modeled in WWHM2012. For outfalls with 100yr post-development flow of less than 0.20 cfs a rock pad has been utilized at the outlet. For flows from 0.2 cfs to 0.5 cfs a flow dispersion trench has been utilized. No outlets exceed 0.50 cfs. See Table 3 for summary.

Table 3: 100-YR Flow Rate Summary

BASIN	100-YR FLOW RATE (CFS)	DISPERSION METHOD
WEST ROOF (ORANGE)	0.244	DISPERSION TRENCH
SOUTH ROOF (BLUE)	0.152	ROCK PAD
WEST ROAD (RED)	0.379	DISPERSION TRENCH
SOUTH ROAD (PURPLE)	0.386	DISPERSION TRENCH
SHEET FLOW (GREEN)	0.165	SHEET FLOW
TUMWATER BLVD (YELLOW)	0.313	DISPERSION TRENCH

See Appendix 1 for a site map of the basin locations, Appendix 4 for the WWHM2012 reports, and Appendix 5 for the Construction Documents.

Wetlands Protections:
The intent for this project is to collect the runoff from the proposed improvements and discharge towards the existing wetland to fully disperse the runoff through the 110' wetland buffer. The runoff from the proposed improvements will be fully dispersed meeting flow control and water quality requirements by the time the discharge enters the wetland. The proposed grading has been designed so any upstream flows that currently contribute to the wetland will be collected by the proposed curb and gutter on the north side of Tumwater Blvd and will allow that flow to continue to recharge the wetland, therefore not diverting any flows from the wetland. This design meets the intent of wetland protection for this wetland.

SECTION 5: AESTHETIC CONSIDERATIONS FOR FACILITIES

All post-construction land features outside of the development area will be restored to pre-construction condition or better.

SECTION 6: CONVEYANCE SYSTEM ANALYSIS AND DESIGN

Stormwater from roadways flow along the gutter line and into catch basins, where it is conveyed to a dispersion trench that discharges to the on-site wetland. Roof runoff is collected and conveyed to dispersion trenches or rock pads as described within section 4 prior to discharge to the on-site wetland. Conveyance sizing will be completed in the final report.

SECTION 7: COVENANTS, DEDICATIONS, EASEMENTS

There will be a 57' Right of Way dedication for new public road with a 10' PSE Easement on either side of roadway. There will be a 5.5' ROW dedication added to the north side of Tumwater Boulevard along the frontage of the property. Other required utility easements will be show with final plans as necessary.

SECTION 8: AGREEMENTS AND GUARANTEES

A Homeowner's Association for the plat will retain ownership of all tracts shown on the plat map and

will be responsible for stormwater facility maintenance.

SECTION 9: OTHER PERMITS OR CONDITIONS PLACED ON THE PROJECT

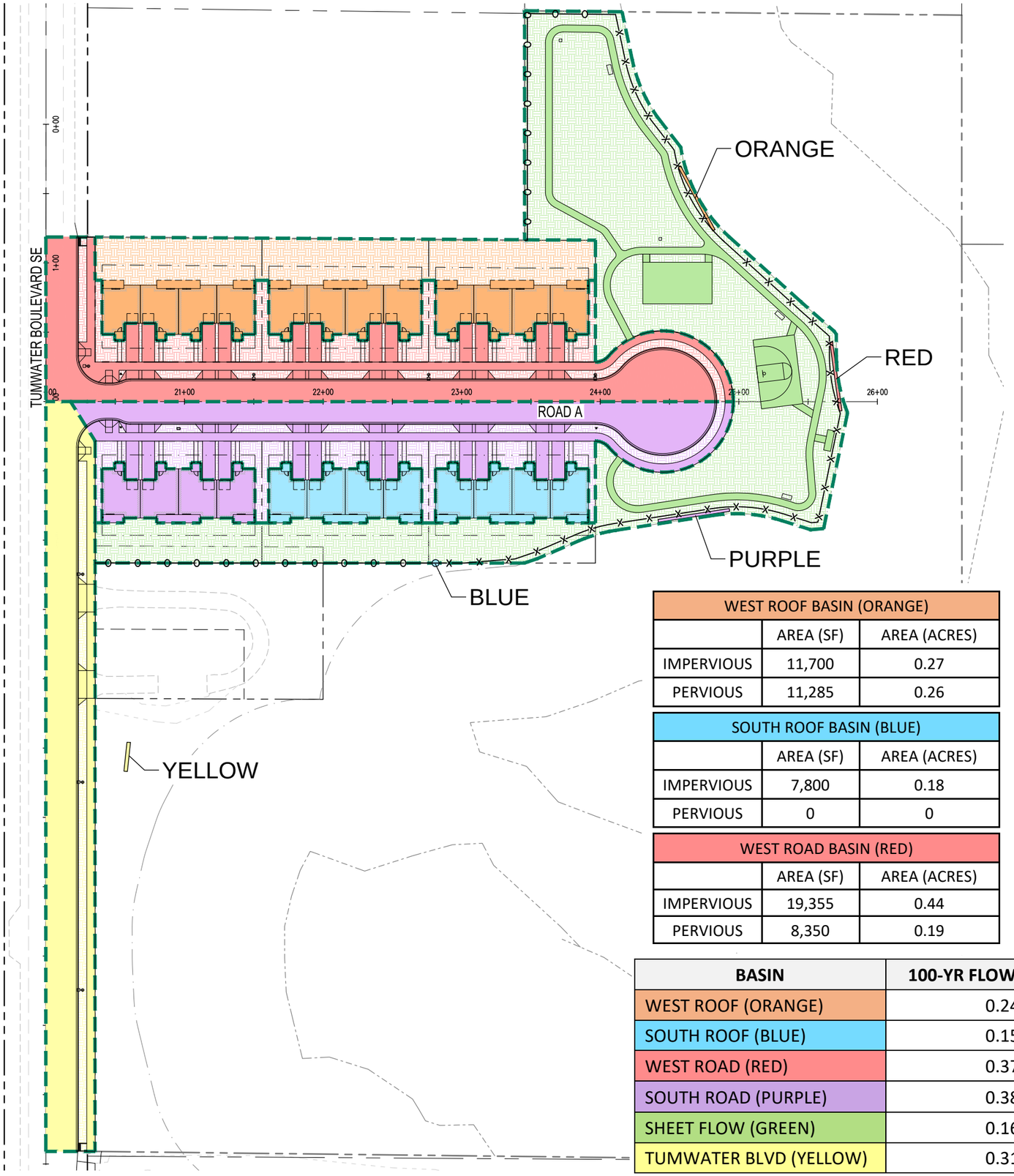
Following Preliminary Plat approval, the Engineering Permits will be applied for from the City of Tumwater.

END OF DRAINAGE REPORT

APPENDIX 1
BASIN MAP

JSA CIVIL

Engineering | Planning | Management



WEST ROOF BASIN (ORANGE)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	11,700	0.27
PERVIOUS	11,285	0.26

SOUTH ROOF BASIN (BLUE)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	7,800	0.18
PERVIOUS	0	0

WEST ROAD BASIN (RED)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	19,355	0.44
PERVIOUS	8,350	0.19

SOUTH ROAD BASIN (PURPLE)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	19,740	0.45
PERVIOUS	7,885	0.18

SHEET FLOW BASIN (GREEN)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	5,915	0.14
PERVIOUS	29,045	0.67

TUMWATER BLVD BASIN (YELLOW)		
	AREA (SF)	AREA (ACRES)
IMPERVIOUS	16,135	0.37
PERVIOUS	1,945	0.04

BASIN	100-YR FLOW RATE (CFS)	DISPERSION METHOD
WEST ROOF (ORANGE)	0.244	DISPERSION TRENCH
SOUTH ROOF (BLUE)	0.152	ROCK PAD
WEST ROAD (RED)	0.379	DISPERSION TRENCH
SOUTH ROAD (PURPLE)	0.386	DISPERSION TRENCH
SHEET FLOW (GREEN)	0.165	SHEET FLOW
TUMWATER BLVD (YELLOW)	0.313	DISPERSION TRENCH

APPENDIX 2
WEB SOIL SURVEY

JSA CIVIL

Engineering | Planning | Management

Soil Map—Thurston County Area, Washington

Map Scale: 1:1,470 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

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: Thurston County Area, Washington
Survey Area Data: Version 18, Aug 27, 2024

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

Date(s) aerial images were photographed: May 26, 2023—Aug 14, 2023

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
46	Indianola loamy sand, 0 to 5 percent slopes	5.2	62.2%
76	Norma silt loam	3.2	37.8%
Totals for Area of Interest		**8.4**	**100.0%**

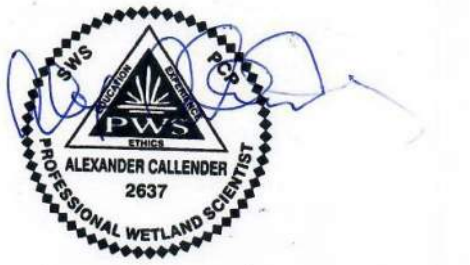
APPENDIX 3
WETLANDS REPORT

JSA CIVIL

Engineering | Planning | Management

Tenino Land Company Multifamily Residential Project
Wetland Delineation Report and Assessment
Tumwater, WA

Prepared for
Todd Hansen
Tenino Land Company



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W
E
Land Services Northwest
Alex Callender MS, PWS
120 State Ave NE PMB 190, Olympia, WA, 98501
360.481.4208

Executive Summary

Site Name: TLC Subdivision

Parcel Numbers: 79300001100 / 79300001200

Site Location: 715 Dennis Street SE / 934 Tumwater BLVD SE **Acreage:** 5.86 and 4.63 acres
Legal Descriptions: Section 02 Township 17 Range 2W Quarter NW SE Plat THOMPSONS TO BRIGHTON PARK LL-0605 LT 3 Document004 /413 and Section 02 Township 17 Range 2W Plat THOMPSONS TO BRIGHTON PARK LT 12Document 007/291 & W 30 F OF VAC ST

Project Staff: Alex Callender MS, PWS **Field Survey Conducted:** May 8, 2024, and August 16, 2024

Project Description: The project proposes a 6 lot quad unit multifamily subdivision with roads, sewer, water, utilities, parking and waste facilities.

Findings: On and offsite Wetlands A and B were found during the recon and delineated. Wetland A is found at the northern edge of both lots and Wetland B was discovered onsite and offsite of parcel 79300001200.

These wetlands were discovered during the reconnaissance and delineated on May 8, 2024, for wetland A and August 16, 2024, for Wetland B.

Wetland A was rated as a Category II wetland with an overall score of 20 and a habitat score of 7 (HLH). The applicant is proposing a PUD and will provide a unique proposal using the impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant can reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet.

Wetland B was rated as a Category III wetland with an overall score of 19 and a habitat score of five (LMM). Using PUD process to rehabilitat the prairie and the impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant will reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet.

Impacts: The applicant will be reducing the buffers of the wetland by 21,445 sq ft using the PUD process code to reduce the buffer from 150 feet to 110-feet.

The applicant has prepared a rehabilitation plan to satisfy the PUD process. TMC Section 18.36.010.B.3 "*One point: Go significantly beyond the minimum requirements for critical area protections to preserve, enhance, or **rehabilitate** critical areas and buffers in the planned unit development. Both the applicant and the city shall agree upon the location, size, and extent of the additional protection, enhancement, or rehabilitation."*

This project proposes to rehabilitate the prairie and wetland habitat in the vicinity of Wetland A. Native plants will be added in the area where the invasive species are removed to improve screening, food resources, nutrient uptake, and beneficial uses of the water that benefits the area fauna. Three wood duck boxes, three bat boxes, and two Martin houses will be installed in the trees at the edge of Wetland A to enhance wildlife habitat at the site. Improvements also include a one-time removal of a large area of Himalayan blackberry and Scotch broom (invasive plant species) which is offsite but adjacent to the wetland and between the site and the wetland. The applicant proposes a more than 4:1 prairie and wetland rehabilitation to reduction ratio in a plan outlined in Chapter 9 of the report to improve wetland and prairie functions.

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1.0 INTRODUCTION

This report is the result of a critical areas study of the following parcels (**Figure 1**):

- The 5.86 parcel number 79300001100 at 715 DENNIS ST SE Olympia, WA with the legal description of Section 02 Township 17 Range 2W Quarter NW SE Plat THOMPSONS TO BRIGHTON PARK LL-0605 LT 3 Document004/413

- The 4.63 parcel number 79300001200 at 934 TUMWATER BLVD SE with the legal description of Section 02 Township 17 Range 2W Plat THOMPSONS TO BRIGHTON PARK LT 12Document 007/291 & W 30 F OF VAC ST

The purpose of this report is to 1) identify and describe the wetlands or other critical areas on-site and within 315 ft off-site of the property 2) identify impacts to wetlands or critical areas and their buffers, and 3) apply mitigation/rehabilitation and conservation measures to off-set any critical areas or buffer impacts.

This report was prepared to satisfy the critical areas review process required by the City of Tumwater Title 15 – Environment. The City of Tumwater and possibly other agencies that may evaluate impacts to critical areas from the proposed project will be able to utilize information in this report.

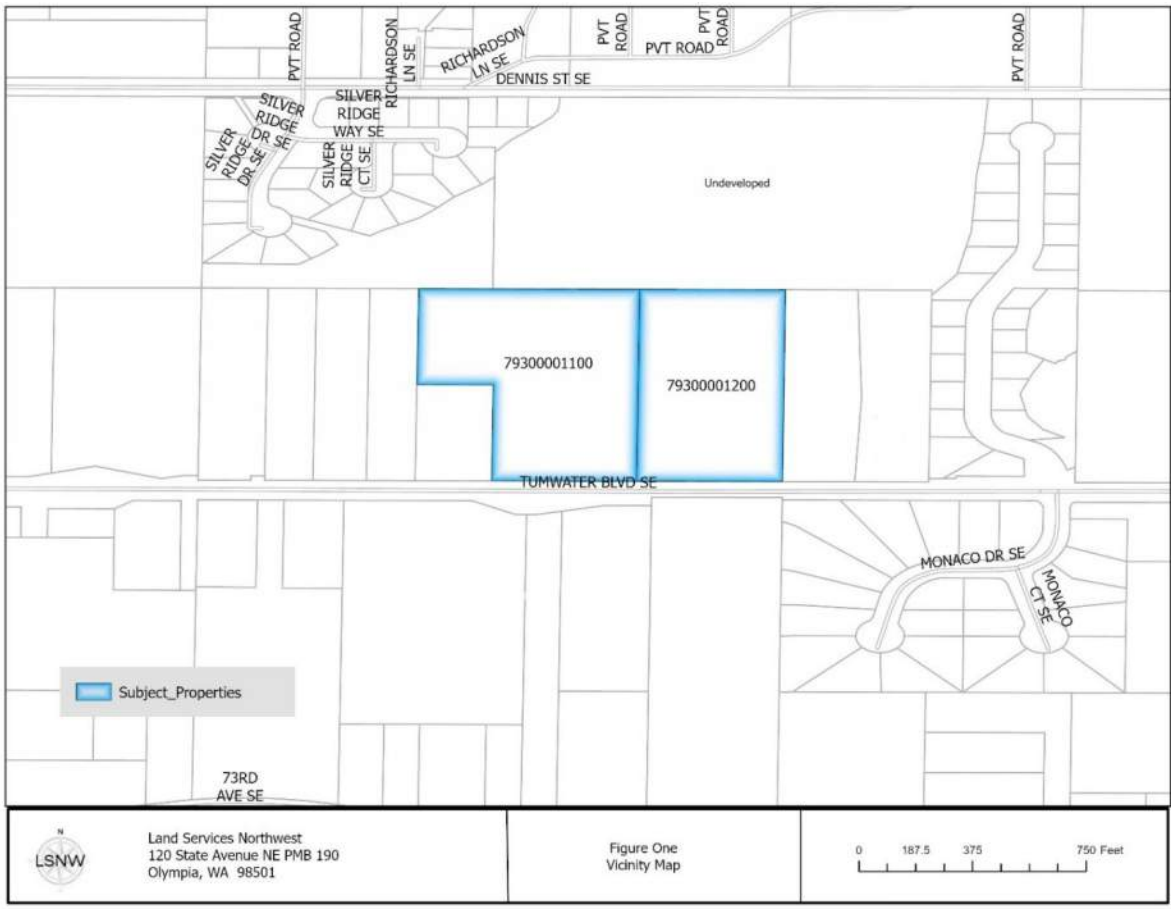


Figure 1-Vicinity Map

2.0 GENERAL DESCRIPTION AND LAND USE

2.1 Historical and Current Land Use

Historically, the parcels are undeveloped with parcel 79300001100 cut and left in pasture with a grove of 20-year-old Douglas fir in the south and Wetland A to the north. Parcel 79300001200 to the east is predominantly forested and undeveloped. There are undeveloped parcels to the north and west and single-family residences to the south, east, and west (**Figure 2**).

Figure 2 - Current Conditions

3.0 METHODOLOGY

3.1 Existing Information Review

Background information on possible wetlands was reviewed prior to field investigations and included the following:

National Wetlands Inventory (NWI) Map, USFWS Shapefile Data (**Appendix B**)

Thurston County Area Soil Survey, Soil Conservation Service (U.S. Department of Agriculture, 1973) National Resource Conservation Service Shapefiles (NRCS Soils Data Mart, 2006) (**Appendix C**)

Thurston County Geodata Wetland Inventory (**Appendix D**)

USGS 7.5 Minute Quadrangle Topographic Maps (**Appendix E**)

Washington Department of Fish and Wildlife Priority Habitats and Species Database (**Appendix G**)

Washington Department of Fish and Wildlife Salmonscape (**Appendix H**)

NOAA NOW Precipitation Data (**Appendix I**)

Washington Department of Natural Resources Natural Heritage Database

United States Hydric Soils List (U.S. Department of Agriculture 1991)

City of Tumwater

3.2 Analysis of Existing Information

The following existing information was reviewed to gain a better understanding of on-site conditions and its position in the landscape.

National Wetland Inventory (NWI) Map

The National Wetland Inventory (NWI) map (**Appendix B**), developed by the U.S. Fish and Wildlife Service (USFWS), shows Palustrine Forested (PFO) and Palustrine Emergent Persistent Seasonally Flooded (PEM1C) wetlands on and within 315 feet of the subject properties.

NRCS Soils Map

The Natural Resources Conservation Service (NRCS) has mapped the site (Appendix C) as containing:

- Norma silt loam
- Indianola loamy sand, 0 to 3 percent slopes and 3 to 15 percent slopes
- Mukilteo muck

Norma silt loam

Map Unit Setting

- *National map unit symbol:* 2ndcc
- *Elevation:* 0 to 1,000 feet
- *Mean annual precipitation:* 35 to 60 inches

- *Mean annual air temperature:* 48 to 52 degrees F
- *Frost-free period:* 150 to 200 days
- *Farmland classification:* Prime farmland if drained

Map Unit Composition

- *Norma, silt loam, and similar soils:* 90 percent
- *Minor components:* 10 percent
- *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Norma, Silt Loam

Setting

- *Landform:* Depressions, drainageways
- *Parent material:* Alluvium

Typical profile

- *H1 - 0 to 8 inches:* silt loam
- *H2 - 8 to 30 inches:* sandy loam
- *H3 - 30 to 60 inches:* sandy loam

Properties and qualities

- *Slope:* 0 to 3 percent
- *Depth to restrictive feature:* More than 80 inches
- *Drainage class:* Poorly drained
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
- *Depth to water table:* About 0 to 12 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* Frequent
- *Available water supply, 0 to 60 inches:* Moderate (about 8.9 inches)

Interpretive groups

- *Land capability classification (irrigated):* None specified
- *Land capability classification (nonirrigated):* 5w
- *Hydrologic Soil Group:* B/D
- *Ecological site:* F002XA007WA - Puget Lowlands Wet Forest
- *Forage suitability group:* Wet Soils (G002XS101WA)
- *Other vegetative classification:* Wet Soils (G002XS101WA)
- ***Hydric soil rating:*** **Yes**

Indianola loamy sand, 5 to 15 percent slopes

Map Unit Setting

- *National map unit symbol:* 2t635
- *Elevation:* 0 to 980 feet
- *Mean annual precipitation:* 30 to 81 inches
- *Mean annual air temperature:* 48 to 50 degrees F
- *Frost-free period:* 170 to 210 days
- *Farmland classification:* Prime farmland if irrigated

Map Unit Composition

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

Description of Indianola

Setting

- *Landform:* Terraces, kames, eskers
- *Landform position (three-dimensional):* Riser
- *Down-slope shape:* Linear
- *Across-slope shape:* Linear
- *Parent material:* Sandy glacial outwash

Typical profile

- *Oi - 0 to 1 inches:* slightly decomposed plant material
- *A - 1 to 6 inches:* loamy sand
- *Bw1 - 6 to 17 inches:* loamy sand
- *Bw2 - 17 to 27 inches:* sand
- *BC - 27 to 37 inches:* sand
- *C - 37 to 60 inches:* sand

Properties and qualities

- *Slope:* 5 to 15 percent
- *Depth to restrictive feature:* More than 80 inches
- *Drainage class:* Somewhat excessively drained
- *Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 99.90 in/hr)
- *Depth to water table:* More than 80 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Available water supply, 0 to 60 inches:* Low (about 3.9 inches)

Interpretive groups

- *Land capability classification (irrigated):* 4e
- *Land capability classification (nonirrigated):* 4s
- *Hydrologic Soil Group:* A
- *Ecological site:* F002XA004WA - Puget Lowlands Forest
- *Forage suitability group:* Droughty Soils (G002XS401WA), Droughty Soils (G002XN402WA)
- *Other vegetative classification:* Droughty Soils (G002XS401WA), Droughty Soils (G002XN402WA)
- ***Hydric soil rating:*** **No**

Mukilteo muck, drained

Map Unit Setting

- *National map unit symbol:* 2ndc5
- *Elevation:* 0 to 1,000 feet
- *Mean annual precipitation:* 40 to 70 inches
- *Mean annual air temperature:* 48 to 52 degrees F
- *Frost-free period:* 150 to 250 days
- *Farmland classification:* Prime farmland if drained

Map Unit Composition

- *Mukilteo, drained, and similar soils:* 90 percent
- *Minor components:* 10 percent
- *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Mukilteo, Drained

Setting

- *Landform:* Depressions
- *Parent material:* Herbaceous organic material

Typical profile

- *Oa - 0 to 6 inches:* muck
- *Oe2 - 6 to 60 inches:* mucky peat

Properties and qualities

- *Slope:* 0 to 2 percent
- *Depth to restrictive feature:* More than 80 inches
- *Drainage class:* Very poorly drained
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 1.98 in/hr)
- *Depth to water table:* About 0 to 24 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Available water supply, 0 to 60 inches:* Very high (about 26.9 inches)

Interpretive groups

- *Land capability classification (irrigated):* None specified
- *Land capability classification (nonirrigated):* 5w
- *Hydrologic Soil Group:* B/D
- *Ecological site:* R002XA003WA - Puget Lowlands Bogs and Fens
- *Forage suitability group:* Seasonally Wet Soils (G002XS201WA)
- *Other vegetative classification:* Seasonally Wet Soils (G002XS201WA)
- ***Hydric soil rating:*** **Yes**

Minor Components

Shalcar

- *Percent of map unit:* 5 percent
- *Landform:* Depressions
- *Other vegetative classification:* Wet Soils (G002XS101WA)
- *Hydric soil rating:* Yes

Mukilteo, undrained

- *Percent of map unit:* 5 percent
- *Landform:* Depressions
- *Other vegetative classification:* Wet Soils (G002XS101WA)
- *Hydric soil rating:* Yes

Thurston County Geodata Wetland Inventory

The Thurston County Geodata website has a mapping tool that depicts various critical areas such as streams and wetlands. This site shows a large Palustrine Forested and Scrub Shrub and Palustrine Emergent wetlands on and within 305 feet of the subject properties. (**Appendix D**).

USGS 7.5 Minute Topo Map

The USGS has topographical maps that depict natural and artificial features on the landscape including wetlands. This map shows does not show any features on site or within 300 feet of the site (**Appendix E**).

WADNR Forest Practices Stream Type Map

The Washington State Department of Natural Resources has a map that shows Wetlands, Streams and Lakes and their stream type for the purpose of Forest Practices according to WAC 222-16-3 **(Appendix F)**. This map shows a wetland on and within 315 feet of the subject properties.

WDFW Priority Habitats and Species Inventory and Salmonscape Inventory

The Department of Fish and Wildlife maintains an inventory of priority habitats and species information (**Appendix G**). This database shows the Big brown bat, Townsend's big-eared bat and Yuma myotis occurring within 330 ft. These bats may use the many snags in the wetland as borrows for torpur or to hunt macroinvertebrates as they emerge from the wetland. The WDFW Salmonscape shows a seasonal stream far offsite to the west, but it does not show any fish use.

NOAA NOW Precipitation Data

NOAA maintains a database that graphs the current precipitation against the wettest, driest, and normal accumulations of record **(Appendix H)**. This data shows that the precipitation since October 1, 2024, has been much drier than average. This is measured at the nearby Olympia Airport which is southwest of the subject property.

3.3 Field Investigation

Determination Guidelines

Land Services Northwest based its wetland identification and delineation upon the 1987 Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987) and the regional specificity found in Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0) (USACE, 2010). Generally, as outlined in the manuals, wetlands are distinguished from other landforms by three criteria: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology.

General Field Guidelines

Plant species were identified according to the taxonomy in *Flora of the Pacific Northwest* (Hitchcock and Cronquist, 1973), and the wetland status of plant species was assigned according to*: The National Wetland Plant List: 2016* (Lichvar, 2016). Wetland classes were determined by the U.S. Fish and Wildlife Service's system of wetland classification (FGDC, 2013). The wetland determination was based mainly on soils, vegetation, and hydrology characteristics indicative of wetland conditions.

The Corps Manual and Supplement describes soil, vegetation, and hydrological indicators of wetlands. A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper par (National Technical Committee for Hydric Soils, 1994). Anaerobic conditions cause redoximorphic features to develop, which can be evidenced through the observation of mottling or gleying in the soil. Soils are hydric if they match the indicators in the supplement or meet the technical definition.

A soils evaluation was performed to determine if the area contained hydric soils. Additional test plots were sampled to gage possible wetland indicators and characteristics. Soils are normally excavated to 18 inches or more below the surface within a test pit to evaluate soil characteristics and hydrological conditions in both wetland and upland areas. Soil chroma (color) is evaluated using the *Munsell Color Chart* (Munsell Color, 1988).

The COE describe a wetland rating system for plants. Each species is assigned a probability of occurrence within wetlands, which is referred to as its wetland status. The wetland plant indicator system is as follows:

Table 1 Indicator Status Ratings

Indicator Status	Abrv.	Definitions - Short Version (ERDC/CRREL TN-12-1)
Obligate	OBL	Almost always occur in wetlands.
Facultative Wetland	FACW	Usually occur in wetlands, but may occur in non-wetlands.
Facultative	FAC	Occur in wetlands and nonwetlands.
Facultative Upland	FACU	Usually occur in non-wetlands, but may occur in wetlands.
Upland	UPL	Almost never occur in wetlands.
		(USACE, 2016)

In general, under the Federal methodology, more than 50 percent of the predominant plant species within a test plot must be rated FAC or wetter (i.e., FACW, OBL) to satisfy the wetland criteria for hydrophytic vegetation. Dominant species are those when ranked comprise 50% of the total or those that have a percent cover greater or equal to 20 percent within the test plot. Only dominant plant species were considered in the data analysis.

If wetland hydrology, including pooling, ponding, and soil saturation, is not clearly evident, hydrological conditions may be observed through surface or soil indicators. Indicators of hydrological conditions include drainage patterns, drift lines, sediment deposition, watermarks, historic records, visual observation of saturated soils, and visual observation of inundation.

3.4 Wetland Study

Field Survey

A wetland reconnaissance was performed on May 8, 2024, and August 16, 2024, to identify wetlands present on the subject property. Observations were made of the general plant communities, wildlife habitats, and the locations of potential streams and wetland areas. Present and past land-use practices were also noted, as were significant geological and hydrological features.

Once likely wetland areas were located, the Routine Onsite Determination Method was used to identify the presence of wetland parameters and to delineate the outer edge of the wetlands using the procedures outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). The Routine Onsite Determination Method was used in areas that maintained normal circumstances, were not significantly disturbed, and were not potential problem areas. A formal wetland delineation was performed on May 8, 2024, and August 16, 2024, to document off-site wetlands and to identify and map off-site wetlands within 315 feet of the subject property as we are able.

Test pits were dug on May 8, 2024, and August 16, 2024 (**Figure 3**) to develop a better understanding of soil profiles onsite. Soils were excavated to 18 inches or more below the surface within a test pit to evaluate soil characteristics and hydrological conditions throughout the site. Soil chroma (color) is evaluated using the *Munsell Color Chart* (Munsell Color, 1988). The result was entered in wetland data sheets **(Appendix I).**

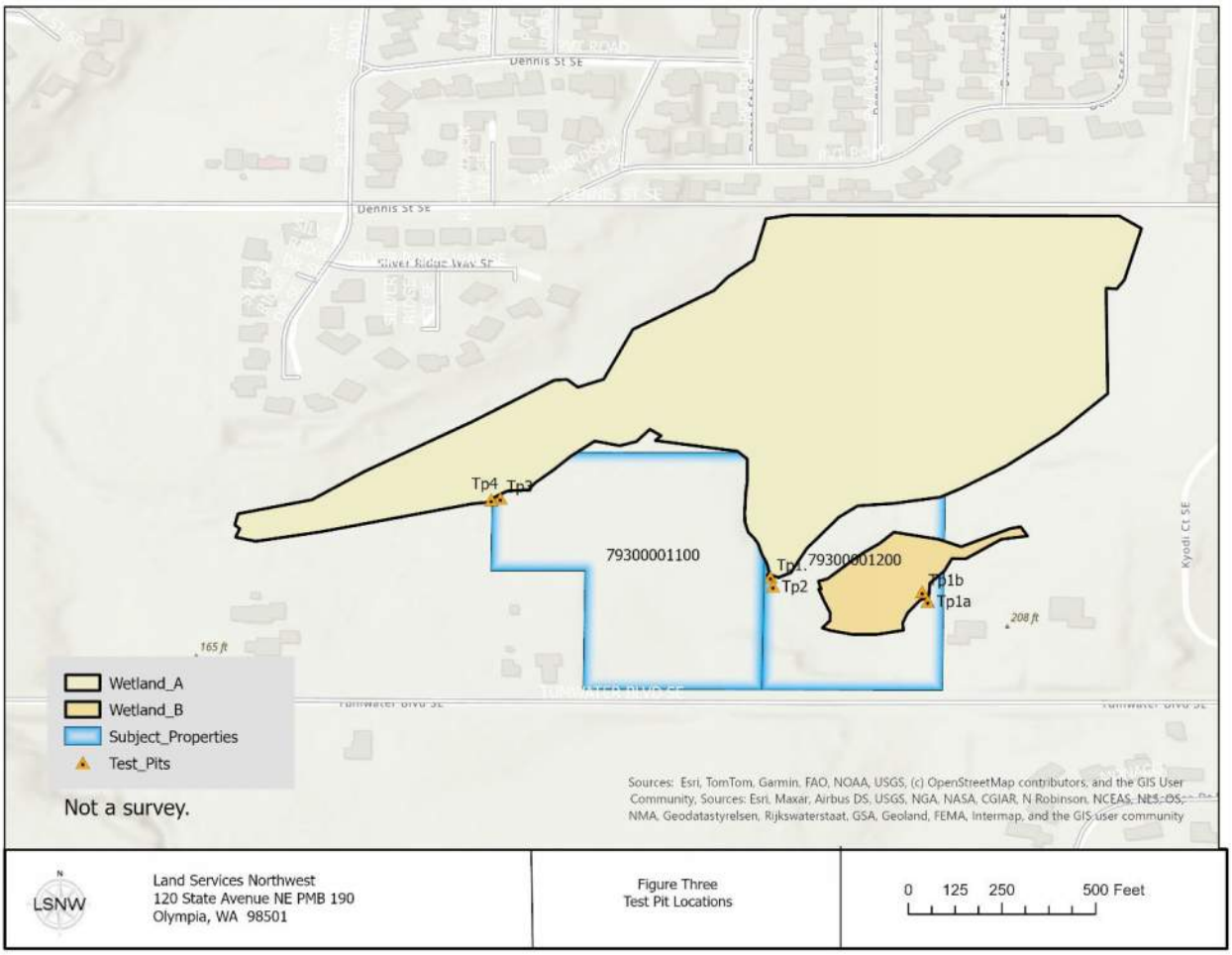


Figure 3 – Test Pit Locations

4.0 RESULTS

4.1 Existing Conditions

Parcel number 79300001100 has a slope from the south to the north with a high point in the south and is a mowed field with 15-20 yr old Douglas fir in the southern portion of the lot along Tumwater Blvd. The slope ends at the wetland that is on the northern border. When the water enters the wetland it drains far offsite to the west. No other wetlands or suspicious areas were found on site. The edge of the property was walked, and other areas were explored during the Mazama pocket gopher study, but there really were no other suspicious areas on site.

Parcel number 79300001200 is predominantly forested with a slope / depressional HGM wetland that starts on the adjacent parcel to the east. There is an upland area that separates the two wetlands, but it was breached by a culvert and short ditch that drains Wetland B into Wetland A.

4.2 Wetlands

Two wetlands were discovered during the reconnaissance and labeled Wetland A and Wetland B.

Wetland A

Wetland A is an aquatic bed, emergent, shrub scrub, forested (Cowardin Class), permanently and seasonally flooded (Hydroperiod) depressional (HGM) wetland with a muck soil. Wetland A was determined to be regulated and was rated using the Wetland Rating System for Western Washington (Hruby et al, 2014).

As mentioned, Wetland A is a large depressional wetland that has developed to the west and north. Its outlet is to the west.

Plants

Red alder (*Alnus rubra*; FAC) Western red cedar (*Thuja plicata*; FAC) Himalayan blackberry (*Rubus armeniacus*; FAC), Skunk cabbage (*Lysichiton americanum*; OBL , slough sedge (*Carex obnupta*; OBL) and Liy pads (*Nuphar polysepala*; OBL) are the primary plants found in the wetland.

Soils

Soils were sampled, and a dark brown 10YR 2/1-2 muck underlain with a 10YR6/2 silt loam.

Hydrology

It was end of the rainy season, so hydrology was directly observed. High groundwater and surface water after rain events sustain wetland hydrology.

Wetland B

Wetland B is a depressional seasonally flooded wetland that drains to Wetland A via a culvert and a very short ditch. Wetland B was determined to be regulated and was rated using the Wetland Rating System for Western Washington (Hruby et al, 2014).

Plants

Western red cedar (*Thuja plicata*; FAC), Red alder (*Alnus rubra*; FAC), Salmonberry *(Rubus Spectabilis*; FAC), Common ladyfern (*Athyrium cyclosorum;* FAC*) and* Skunk cabbage (Lysichiton americanum; OBL) are the primary plants found in the wetland.

Soils

Soils were sampled, and a dark 10YR2/1 underlain with 10YR4/2-4/6 silt loam.

Hydrology

It was end of the rainy season, so hydrology was directly observed on the surface.

5.0 WETLAND FUNCTIONAL VALUES

5.1 Wetland Functional Analysis Methodology

Wetlands, in general, provide many valuable ecological and social functions, including 1) stormwater storage, 2) groundwater recharge, 3) erosion control, 4) water quality improvement, 5) natural biological support, 6) overall habitat functions, 7) specific habitat functions, and 8) cultural and socioeconomic value.

Several procedures have been developed for assessing the importance and magnitude of functions and include the Washington Functional Assessment Method (WAFAM) Wetland Evaluation Technique, the Hydrogeomorphic Assessment Method the Habitat Evaluation Procedure (HEP), and numerous regional and/or local procedures. However, none of these methods were consistent with the needs of this project.

Wetland functions were also semi-quantitatively assessed using information gathered while performing the ECY Wetland Rating System for Western Washington (Hruby, 2014). The scores from the analysis of the wetland are found in Appendix H. This method is a comprehensive approach requiring substantial data input and assessment of onsite and landscape functions. The descriptions of wetland functions and the factors and parameters considered by that method are very helpful in interpreting the functioning of the subject wetlands and buffer areas. The methodology is scientifically based, in that its application requires a prior understanding of how wetlands function. Advanced experience, training and scientific objectivity of a wetland scientist applying the method is essential for an accurate assessment. Alex Callender has attended and received credit for the training in this method.

5.2 Wetland Functions

Wetland A

Wetland A is an approximately 15.77 - acre mostly undisturbed depressional wetland that drains much of the area south of Tumwater Boulevard and south of Dennis street and West of Henderson Boulevard.

Water Quality

Wetland A has constricted outlet and greater than 1/2 of the vegetation is ungrazed as there is aquatic bed vegetation open water in a portion of the wetland. The wetland has mapped organic soils and the area that is seasonally flooded is less than 1/4 of the overall area.

The wetland does not have greater than 10% of the buffer in pollution generating land use. There are septics within 250 feet of the wetland. There are no other pollution generating activities surrounding the wetland.

The wetland discharges within a mile of a 303d waterbody. It has a 303 d water in the basin. There is a TMDL planned for the Deschutes basin.

Hydrologic Functions

Wetland A is a depressional wetland that drains offsite to the west via a constricted outlet. Marks of ponding are 2-3 ft. The contributing basin is 10-100 times the size of the Wetland Unit.

The unit does not receive stormwater. >10% of the wetland is impervious surface. The wetland has more than 25% of the area of the catchment basin in high intensity land use. There is surface flooding in some areas in the wetland drainage basin further downstream, but the wetland is not mentioned in any flood plans or studies as important for this function.

Habitat functions

Wetland A has a high interspersion of structure as there is aquatic bed, emergent, shrub scrub and forested areas. Wetland A does not have a lot of vegetative species diversity with a forested fringe of alders and western red cedars and twinberry, Himalayan blackberry, and an emergent lily pad and cat tail interior. There is not much wetland hydroperiod diversity as it has a hard edge and is permanently flooded with a small band of seasonally flooded area. Wetland A has high density development in the area as there are subdivisions that surround the wetland and the airport rates high for land use in the landscape position, so it rates moderate. Wetland A has little high intensity accessible habitat, so it rates moderate for this feature as well.

There are snags and logs and a stream at its outlet, so it rates high for priority habitats and species. There were no other priority habitats and species found in the area via the PHS Mapping tools, and no pocket gophers or prairie was found onsite.

Wetland B

Wetland B is an approximately 1.06 acre mostly undisturbed forested depressional wetland that drains to Wetland A during periods of high precipitation.

Water Quality

Wetland B has an intermittently flowing stream or ditch. The wetland has mapped organic soil and has persistent ungrazed plants on greater than fifty percent of the area. The area that is seasonally flooded is less than 1/4 of the overall area.

The wetland does not have stormwater discharge and greater than ten percent of the land use within 150 ft. is pollution generating. There are septics within 250 ft. of the wetland.

The wetland discharges within a mile of a 303d waterbody. It has a 303 d water in the basin. There is a TMDL planned for the Deschutes basin.

Hydrologic Functions

Wetland B has an intermittently flowing stream or ditch. Marks of ponding are 2-3 ft. The contributing basin is 10-100 times the size of the Wetland Unit.

The wetland does not receive stormwater discharges. Greater than 10 percent of the area within 150 ft generates excessive runoff. More than 25 percent of the catchment basin of the wetland is covered by intensive human land uses that promote runoff (Land Use Intensity in the basin has >25% in 1 residential unit per acre or greater, or commercial /industrial use.

There is surface flooding in some areas in the basin further downstream, but the site is not mentioned in any local or regional plans as important for this function.

Habitat functions

Wetland B has two vegetative structures – forested and forested with 3 layer's There is one hydroperiods which is seasonally flooded and has moderate diversity with 5 to nineteen plant species. The wetland area has one Cowardin classifications, so it has a low interspersion of habitat. There is large, downed woody debris, snags and logs.

Ten to nineteen percent of the 1km is accessible habitat and the undisturbed habitat is ten to fifty percent of the area in more than three patches. Less than fifty percent in the 1km polygon is high intensity land use.

There were no other priority habitats and species found in the area via the PHS Mapping tools, and no pocket gophers or prairie was found onsite.

6.0 REGULATORY CONSIDERATIONS

6.1 City of Tumwater Regulations

The City of Tumwater regulates wetlands using a combination of land use intensity wetland category and habitat scores.

Wetland A was rated as a Category II wetland with an overall score of 20 and a habitat score of 7 (MMH). Using the impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant can reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet.

Wetland B was rated as a Category III wetland with an overall score of 19 and a habitat score of five (LMM). There are no impacts to the wetland proposed and through the PUD process we will improve the overall buffer by using the buffer impact reducing measures found in Table 16.28.170(5): Measures to Minimize Impacts to Wetlands, the applicant will reduce the buffer from the high intensity 150-foot buffer to the moderate use intensity buffer of 110-feet and provide treatments to enhance the buffer function.

Table 16.28.170(2) Explanatory Notes:

(1) No information on other measures for protection was available at the time the 2014 Washington State Wetland Rating System for Western Washington was written. The Washington State Department of Ecology will continue to collect new information for future updates of the 2014 rating system.

Table 16.28.170(3): Category III Wetland Buffer Widths

(Buffers for wetlands scoring sixteen to nineteen points for all functions)

Wetland Characteristics	Buffer Widths by Impact of Proposed Land Use	Other Measures Recommended for Protection
Moderate level of function for habitat (score for habitat 5 – 7 points) If wetland scores 8 – 9 habitat points, use Table 16.28.170(2): Category II Wetland Buffer Widths	Low – 75 ft Moderate – 110 ft High – 150 ft	No recommendations at this time (1)
Score for habitat 3 – 4 points	Low – 40 ft Moderate – 60 ft High – 80 ft	No recommendations at this time (1)

Table 16.28.170(3) Explanatory Notes:

16.28.170 Wetland buffers.

A. Standard Buffer Zone Widths. Wetland buffer zones shall be required for all regulated activities adjacent to regulated wetlands.

1. Any wetland created, restored or enhanced as compensation for approved wetland alterations shall also include the standard buffer required for the category of the created, restored, or enhanced wetland.

2. All buffers shall be measured from the wetland boundary as surveyed in the field pursuant to the requirements of TMC 16.28.080.

3. The width of the wetland buffer zone shall be determined according to wetland category, the functions and special characteristics of the wetland, and the proposed land use.

4. Wetlands of high conservation value, bogs, and forested wetlands shall have the buffers shown in the table below independent of points scored for habitat in the rating system.

5. If a wetland meets more than one of the characteristics listed in Tables 16.28.170(1) to 16.28.170(4), the buffer recommended to protect the wetland is the widest one.

C. Buffer Width Reduction. The buffer widths recommended for land uses with high-intensity impacts to wetlands can be reduced to those widths recommended for moderate-intensity impacts under the following conditions:

1. For wetlands that score moderate or high for habitat (five points or more), the width of the buffer around the wetland can be reduced to 110 feet through the PUD process if it is agreed that the project will provide the community with something beyond a typical mitigtation.

As a condition of the PUD application the applicant will maintain:

a. A relatively undisturbed vegetated corridor at least one hundred feet wide is protected between the wetland and any other priority habitats as defined by the Washington State Department of Fish and Wildlife. The corridor must be protected for the entire distance between the wetland and the priority habitat via some type of legal protection such as a conservation easement; and

There is a 110-ft buffer after the reduction. The applicant will maintain this as a condition of the application. In addition, the applicant will implement the measures below as applicable.

b. Measures to minimize the impacts of different land uses on wetlands, such as the examples summarized in Table 16.28.170(5), will also be applied.

Table 16.28.170(5): Measures to Minimize Impacts to Wetlands

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Lights	Direct lights away from wetland	Parking lots, warehouses, manufacturing, residential
Noise	Locate activity that generates noise away from wetland	Manufacturing, residential
Toxic runoff (1)	Route all new runoff away from wetland while ensuring that wetland is not dewatered Establish covenants limiting use of pesticides within 150 ft of wetland Apply integrated pest management	Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, landscaping
Stormwater runoff	Retrofit stormwater detention and treatment for roads and existing adjacent development Prevent channelized flow from lawns that directly enters the buffer	Parking lots, roads, manufacturing, residential areas, commercial, landscaping

Table 16.28.170(5): Measures to Minimize Impacts to Wetlands

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Change in water regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns	Impermeable surfaces, lawns, tilling
Pets and human disturbance	Use privacy fencing Plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion Place wetland and its buffer in a separate tract	Residential areas
Dust	Utilize best management practices to control dust	Tilled fields

Table 16.28.170(5) Explanatory Notes:

(1) These examples are not necessarily adequate to meet the rules for minimizing toxic runoff if threatened or endangered species are present at the site.

The applicant will be able to meet the requirements of the table above. (See section 8.2 for implementation)

The wetlands, and their buffers are depicted below (**Figure 4**).

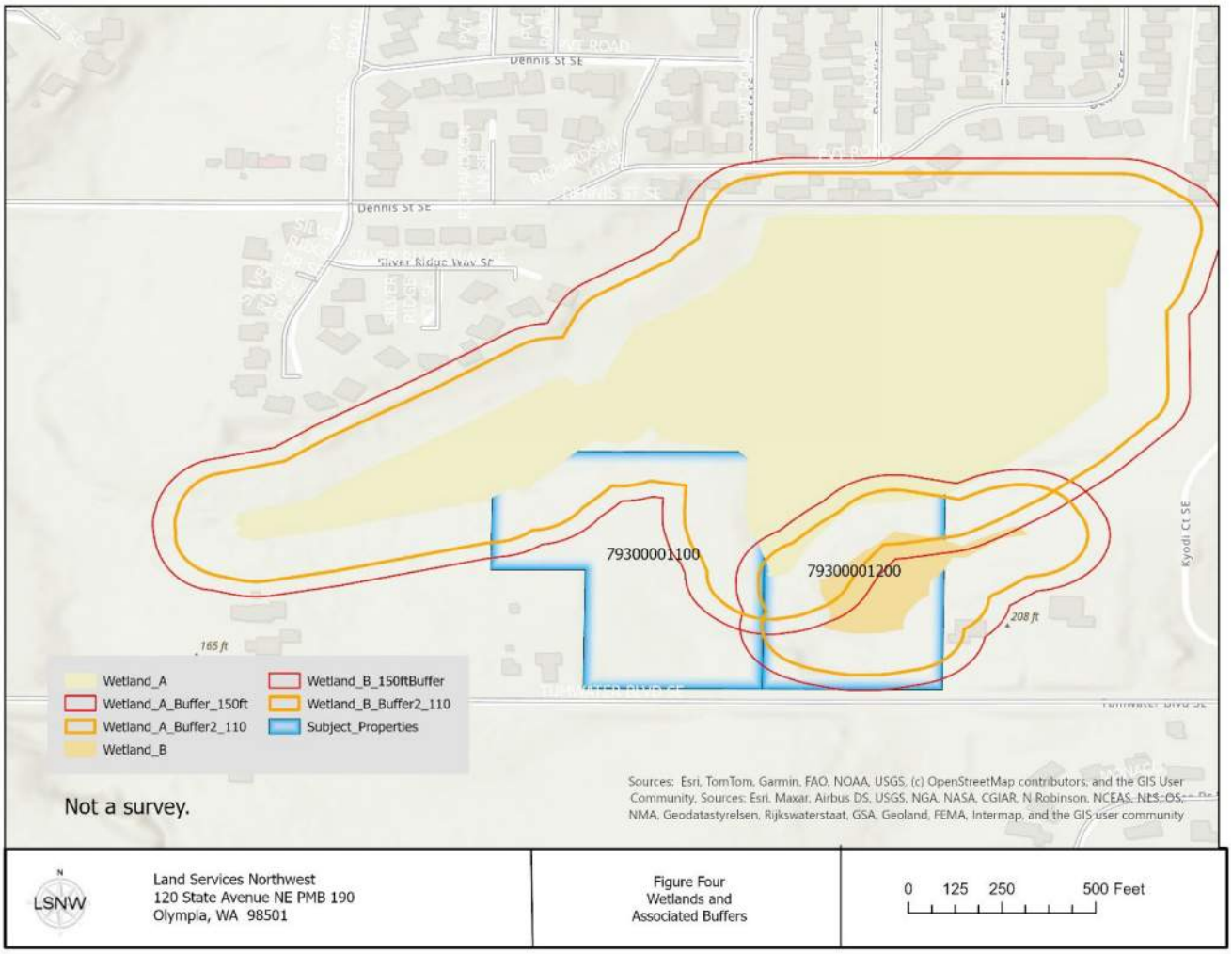


Figure 4 – Standard 150 ft Wetland Buffers and 110 ft Reduced Buffers.

Table 2 - Summary of Wetlands and Streams on or in the Vicinity of the Subject Property

Wetland	Size (Acres)		Category	Habitat Score	Base Buffer Width (feet)	Buffer after rehabilitation	Comments
	On-site	Off-site (estimated)					
Wetland A	0.2894	~15.57	II	7 (MMH)	150	110	Buffer reduction using table and 92,000 sq ft of wetland buffer enhancement and prairie enhancement with rehabilitation to be applied.
Wetland B	.99	0.7	III	5 (LMM)	150	110	No development activity

6.2 Corps Regulations

Wetlands A and B flow offsite and eventually to the Deschutes River and then to the Puget Sound. Therefore, they would be maintained as a Water of the US and regulated under the Clean Water Act. No impacts are proposed to Wetlands A or B beyond the buffer reduction.

6.3 Department of Ecology

Under RCW 90.48, the Washington Department of Ecology (DOE) reserves regulatory authority to regulate “waters of the state” under Section 401 of the Clean Water Act. No wetland impacts are proposed.

7.0 WILDLIFE

Wildlife observed during the field investigations are typical of urban/suburban adapted species (Table 2). The European starling, possum, and other species adapted to urbanization may inhabit or visit the site for food and shelter.

No other Federally-listed, or priority species was observed on the subject property or near the site based on the WDFW Priority Habitats and Species (PHS) and field observations during the

reconnaissance and delineation. During the limited duration of the site reconnaissance and delineation, no evidence of the Federally-listed Bald Eagle, Marbled Murrelet, or Spotted Owl was observed on-site.

No Federally-listed salmonid species are known to occur on-site, based on the WDFW SalmonScape database, the WDFW PHS database, and site reconnaissance.

No wildlife was observed on site during site visit beyond the occasional mole mound and deer and coyote scat.

8.0 PROPOSED PROJECT

8.1 Description

The project proposes a 6 lot quad unit multifamily subdivision with roads, sewer, water, utilities, parking and waste facilities. **(Figure 5 – Site Plan)**

8.2 Development Impacts

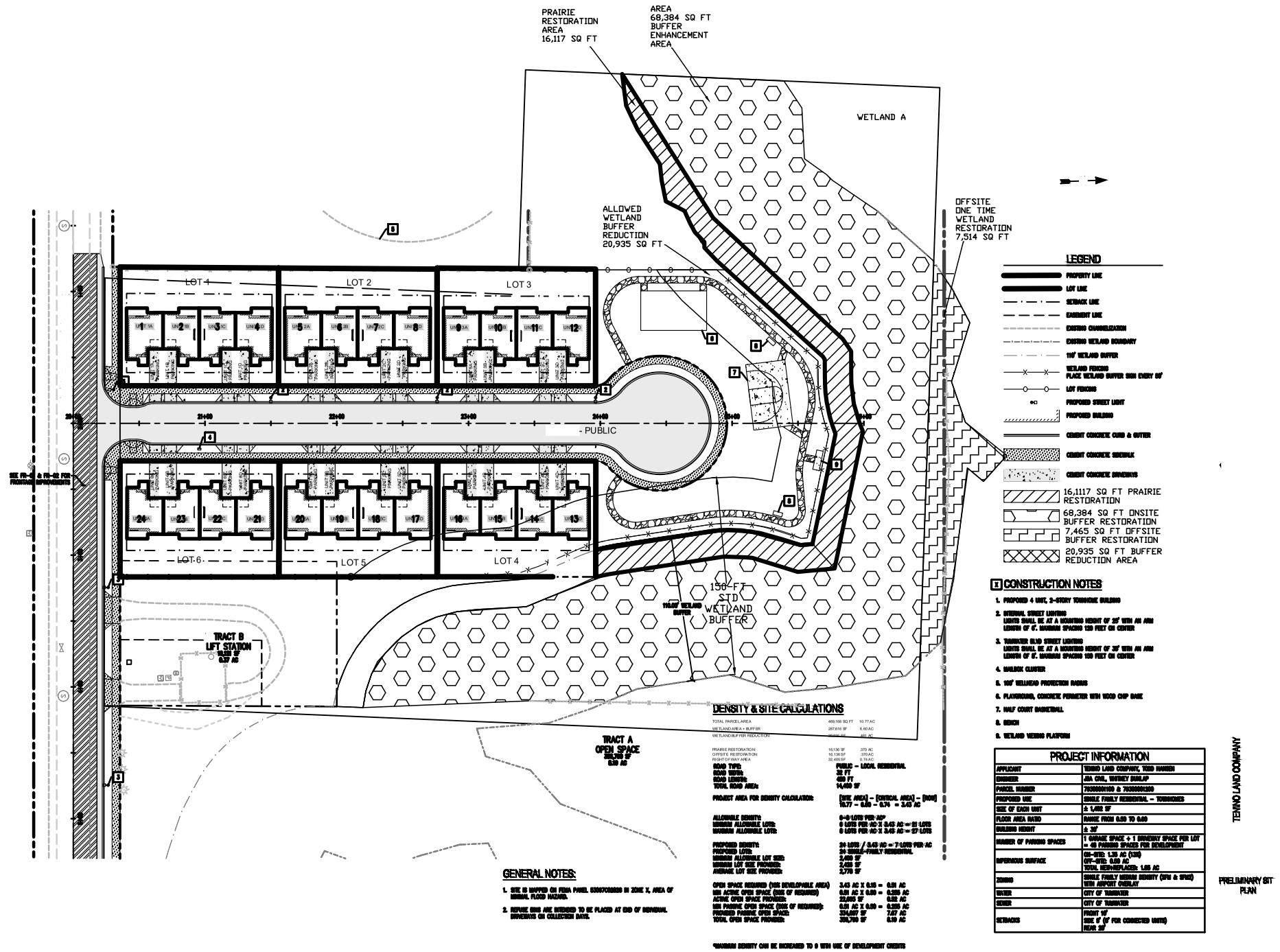
No direct impacts to the wetlands are expected. Wetland buffers will be reduced from 150 ft to 110 feet using measures in code. This will require the special mitigating measures invoked by the PUD process. Specifically, the PUD Public Benefit Point Two – Critical Areas Enhancement:

TMC Section 18.36.010.B.3 "*One point: Go significantly beyond the minimum requirements for critical area protections to preserve, enhance, or rehabilitate critical areas and buffers in the planned unit development. Both the applicant and the city shall agree upon the location, size, and extent of the additional protection, enhancement, or rehabilitation.*"

This project proposes to rehabilitate and enhance the prairie and wetland habitat in the vicinity of Wetland A. Improvements include a one-time improvement of a large area of Himalayan blackberry and Scotch broom, English holly and English hawthorne (invasive plant species). This area is offsite and currently owned by the applicant, but cannot be maintained in the future due to ownership. Native plants will be added in the area where the invasive species are removed to enhance the buffer by improving: screening, food resources, nutrient uptake, and shade for the beneficial uses of the water that benefits the area fauna. The onsite areas immediately next to the Wetland A will have dense native plants installed with a 10 year monitoring plan for maintenance and contingencies. The area beyond the wetland enhancement area will be reserved for a prairie restoration area which will also have maintenance and contingenies provided for up to ten years. Additional habitat features will be installed near the Wetland A to include Three wood duck boxes, three bat boxes, and two Martin houses will be installed in the trees at the edge of Wetland A to enhance wildlife habitat at the site. Outside of the praire rehabilitation area an open space area with walking paths, interpretive signage and viewing platforms will provide additional vegetation and amenities for the community to see a south sound praire and introduce this special habitat only found in this part of the country..

To reduce the impacts of development, other measures will be applied from the table as applicable to include:

- Direct Lights Away
- Locate activity that generates noise away from the wetland
- Route all new runoff away from wetland while ensuring that wetland is not dewatered. (Level Spreader to be Installed)



LAND SERVICES NORTHWEST
120 STATE AVE NE #190
OLYMPIA, WA 98501
360-481-4208

FIGURE 5
SITE PLAN WITH PLANTING AREAS
(NOT A SURVEY)

Scale: 1" = 100'

- HOA to Establish covenants limiting use of pesticides within 150 ft of wetland
- Use integrated pest management (**Appendix K**)
- Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns (level spreader)
- Plant dense native vegetation prairie and buffer plants in the buffer. Remove invasive species where present to include scotch broom and Himalayan blackberries (See Chapter 9).
- Utilize best management practices to control dust (Construction BMP's for Dust.

8.3 Impact Avoidance and Minimization

The development plan should concentrate the development area primarily to the center of the lot which will be designed to maintain stormwater on site. Native plants will maintain the screening that a buffer typically provides along with the erosion control. The mitigating measures mentioned in earlier chapters will minimize the impacts of the project to buffers and maintain no-net-loss of wetland functions and values.

The applicant has identified the area that needs invasive species removal and native plant rehabilitation and will systematically remove blackberries and scotch broom while planting native species that if successful would create a much more resilient and better functioning wetland and buffer. The applicant has avoided all of the wetland impacts and will minimize future impacts by limiting access to the area and by thoughtfully controlling invasive species.

The buffer/prairie rehabilition area is also a place that has native prairie outwash soils that are required for several south sound prairie species such as the Taylors checkerspot butterfly, the Mardon skipper and Mazama pocket gopher. Although these species were not found onsite, they could use this area in the future and the plant species that we are installing to enhance the area are known to be utilized during their life cycles.

8.4 Minimization of Water Quality Impacts

Implementing water quality and sedimentation best management practices (BMPs) will act to minimize sedimentation and protect water quality on-site and any bare areas will be planted with a cover crop. Silt fences and straw waddles will be used where necessary. Splash blocks and infiltration galleries and level spreaders will be used to reduce stormwater impacts from the residences. The increase in vegetation from the proposed buffer and prairie rehabilitation plan will provide for increased surface roughness and nutrient uptake, food sources, and erosion protection.

9.0 Buffer and Prairie Invasive Species Removal and Native Plant Rehabilitation Plan

9.1 PUD Requirements

It was determined that in order to meet the second point of the PUD the applicant will rehabilitate the **buffer** of Wetland A and provide a prairie planting to benefit endangered prairie species. This will require rehabilitation of the buffer by removing invasives and replacement with native plants at a density to provide a resilient buffer that will be self-maintaining once established.

To allow the reduction of the standard 150 ft **buffer** to the reduced 110 ft buffer through the PUD process, the applicant needs to go beyond what is typically required for a buffer reduction. The Department of Ecology BAS has guidance for buffers that are not adequately vegetated, or contain non-native species. They mention that it is generally better to improve the vegetation than widen the buffer (ECY, 2005). Typically, with buffers a 1:1 reduction of buffer, to vegetated buffer rehabilitation ratio is required using native plants. In this case we would like to do more than what is typical, as encouraged by the PUD. This project will require 21,445 sq ft of buffer reduction for the common space and back yards of lots. What is proposed amounts to a buffer rehabilitation plan which will provide ~400 percent more area than the 1:1 improvement typically required for a buffer reduction. No-net-loss of wetland functions and values will be maintained and there will be benefits to prairie habitats as well. The project should be educational too.

The area is mapped with Indianola Loamy Sand 0-3% slopes which is a more preferred MPG soil and Norma Silt loam which is less preferred. Both of these soils are habitat indicators for the Mazama pocket gopher and the Indianola soils are also native prairie soils. To mitigate for the buffer reduction, we propose enhancing the area between the development and the wetland using three different restoration activities which will improve wetland and prairie functions which have both been impacted by invasive species. We will use this unique opportunity to develop a successful wetland and prairie restoration. As mentioned in the now implemented Thurston HCP, sites which exhibit resiliency would be preferred and this has a transition from wetland to upland after planting should provide diversity so that it can maintain itself through adverse climatic conditions.

This Rehabilitation Plan was developed by Alex Callender MS, PWS. He has over 21 years of experience creating, installing and monitoring buffer enhancement mitigation and rehabilitation plans.

The buffer and prairie rehabilitation activities are as follows:

- The applicant proposes to have the non-native scotch broom and non-native blackberry removed and replanted with 16,117 sq ft of native prairie species which will provide numerous benefits to the threatened butterflies and become a landscape amenity that connects the community with the presence of South Sound Prairie.

- 7,035 sq ft of offsite upland area will receive a one-time treatment to remove invasive species. This area is important because it is adjacent to the wetland and is dominated by Himalayan blackberry and scotch broom and left alone, this area would be a source of invasive species recruitment that could impact the new plantings we are proposing for the subject property.

  After treatment the area will be planted with native Garry oaks, Red twig dogwood, and snowberry. These plants are relatively aggressive native plants that should outcompete the blackberries and scotch broom and prevent a resurgence of these species.

  Three Wood duck boxes, three bat boxes and two Martin houses will be installed in the trees at the edge of Wetland A.

- The remaining 68,384 sq ft area between the northern property boundary and the northern edge of the prairie restoration area will have non-native plants removed and native shrubs and trees planted to maintain the screening between the wetland and the development.
- Outside of the main rehabilitation areas will be a 28,380 sq ft of intermediate buffer of ornamental landscaping that can be utilized as buffer as well. This area encompasses a passive foot path with viewing platforms and interpretive signs..

The applicant will combine the mitigating measures found in Table 16.28.170(5). and the qualifications found in TMC Table 16.28.170(2):

As directed, the applicant will do the following in accordance with the objective of meeting the intent of the PUD special

- Lights will be directed away from the wetland and buffers.
- Pesticide limited within 150 ft of wetland.
- Fence off the wetland
- Runoff will be infiltrated onsite to keep from dewatering the wetland
- Use LID infiltration on downspouts.
- 91,555 sq ft of dense native vegetation will be planted in buffer between the development and the wetland area which is approximately a 4 to 1 rehabilitation area to impact area ratio which is well above the typical 1: 1 ratio required in most cases.
- Remove invasive species in the rehabilitation area
- Other mitigation measures from this table will be implemented as applicable.

- **Table 16.28.170(5): Measures to Minimize Impacts to Wetlands**

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Lights	Direct lights away from wetland	Parking lots, warehouses, manufacturing, residential
Noise	Locate activity that generates noise away from wetland	Manufacturing, residential
Toxic runoff (1)	Route all new runoff away from wetland while ensuring that wetland is not dewatered Establish covenants limiting use of pesticides within 150 ft of wetland Apply integrated pest management	Parking lots, roads, manufacturing, residential areas, application of agricultural pesticides, landscaping
Stormwater runoff	Retrofit stormwater detention and treatment for roads and existing adjacent development Prevent channelized flow from lawns that directly enters the buffer	Parking lots, roads, manufacturing, residential areas, commercial, landscaping

- **Table 16.28.170(5): Measures to Minimize Impacts to Wetlands**

Examples of Disturbance	Examples of Measures to Minimize Impacts	Activities That Cause the Disturbance
Change in water regime	Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns	Impermeable surfaces, lawns, tilling
Pets and human disturbance	Use privacy fencing Plant dense vegetation to delineate buffer edge and to discourage disturbance using vegetation appropriate for the ecoregion Place wetland and its buffer in a separate tract	Residential areas
Dust	Utilize best management practices to control dust	Tilled fields

Table 16.28.170(5) Explanatory Notes:

(1) These examples are not necessarily adequate to meet the rules for minimizing toxic runoff if threatened or endangered species are present at the site.

9.2 Integrated Pest Management

The applicant will use the integrated pest management plan (IPM) methods and utilize management recommendations from the Thurston County IPM Website The primary objectives of the planting plan is to provide shrub species that will shade and outcompete the two main species which require control; Himalayan blackberry, scotch broom, English holly and the Single seeded hawthorne. The applicant will use manual or mechanical means as the preferred method for removal of the Himalayan and Evergreen blackberries on site. If these methods are found to be ineffective or infeasible, Other more aggressive methods will be considered to include use of popular effective herbicides consistent with the recommended label application rates and conducted during the dry season by licensed applicators. Other species which may require control from time to time will use recommendations from the Thurston County Noxious Weed website and the Homeowner IPM recommendations adopted for this particular purpose.

9.3 Functional Analysis

The following planting plan to rehabilitate the buffer will maintain wetland functions and improve the overall landscape as well by:

- providing increase roughness
- increasing nutrient uptake of stormwater
- increasing site plant diversity
- Provide screening for wildlife,
- Provide shade for water quality and habitat,

- Produce food for wildlife and structure.
- Provide nectar for threatened butterflies

Currently, the area that will be impacted is field with invasive Himalayan blackberry and Scotch broom. There is a lack of prairie and tree and shrub vegetation and the screening that it provides. This plan will provide a properly rehabilitated buffer in the area, where it matters most, between the wetland and the residences. The planting plan will provide species diversity and structure as well as roughness.

Areas will be planted with buffer plants, which will not only provide benefits already mentioned, but will also become a landscape amenity that combines the practical plantings with aesthetic attributes of our native flora.

The following analysis uses the qualitative scoring values similar to the values developed in the Wetland Rating System for Western Washington (Hruby, 2014). The best available science has found that the resolution of value can only be rated using a qualitative system and maintain a rapid assessment of less than one day. Therefore, we have examined common buffer functions for wetland protection and other habitats to show the overall expected lift by the rehabilitation plan. The functions we are studying were found in the latest buffer BAS (Hruby, 2013)

TABLE 3 – Buffer Functions Comparison Before and After Rehabilitation

Buffer Perf criteria	Other Habitats (Bat, Martin and Wood duck habitat	Screening	Nutrient uptake	Invasive Species	Structure	Surface roughness	Temperature attenuation	Diversity
Before mitigating measures	Low	Medium	Medium	High	Low	Medium	Medium	Low
After mitigating measures	Medium	High	Medium	Low	High	Medium	Medium	Medium

The rehabilitation measures once applied should provide new habitat for birds, bats and macroinvertabrates and restore habitat for the Taylor's checkerspot and Mardon skipper.

9.4 Planting Plan

To provide for a higher functioning a wetland and prairie, a wetland invasive removal plan was developed to make the remaining buffer and wetland more resilient and effective. Figure 6 illustrates

the placement area which was created to maximize plant performance by placing species in a position in the landscape where they will thrive and provide the most benefit to the system.

Trees and shrubs will be planted at grade in holes 2-3 times the width of the container or root ball. Mulch will be applied around each tree 2-4 inches deep in a three-foot diameter around the tree with an edge to retain water. Containerized rootbound trees will be cut with sharp shears on the bottom in an x pattern to promote root growth. Four cuts will be made vertically to allow roots to spread. Trees and shrubs will be thoroughly watered after installation.

Table 4 – Clear, Plant, and Leave Area #1 (7,035 sq ft)

Common Name	Scientific Name	Size	Spacing	Quantity	Cost ea.	Total
Oregon white Oak	*Quercus garryana*	1 Gallon	15 ft O.C.	4	$10.00	$40.00
Snowberry	*Symphoricarpos alba*	1 Gallon	5 ft O.C.	60	$10.00	$600.00
Pacific willow	*Salix lasiandra*	1 Gallon	8 ft oc	20	$10.00	$200.00
Red osier dogwood	*Cornus sericea*	1 Gal	8ftnoc	20	$10.00	200.00
Total				**104**		**$1040.00**

Table 5 --Prairie Restoration (16,117 sq ft)

Common Name	Scientific Name	Size	Spacing	Quantity	Cost ea.	Total
Common camas	*Quamash cammassia*	1 Gallon	3 ft O.C.	115	$3.00	$345.00
Buttercup	*ranunculus occidentalis*	1 Gallon	3 ft O.C.	20	$10.00	$200.00
Large-leaved lupine	*Lupinus polyphyllus*	1 Gallon	3 ft O.C.	25	$10.00	$250.00
Common yarrow	*Achillea millefolium*	1 gallon	5 ft oc	20	$10.00	$200.00
Prairie Seed mix to be developed				1 pound		tbd
Total				**180**		**$995.00**

Table 6 – Buffer Rehabilitation Area (68,384 sq ft)

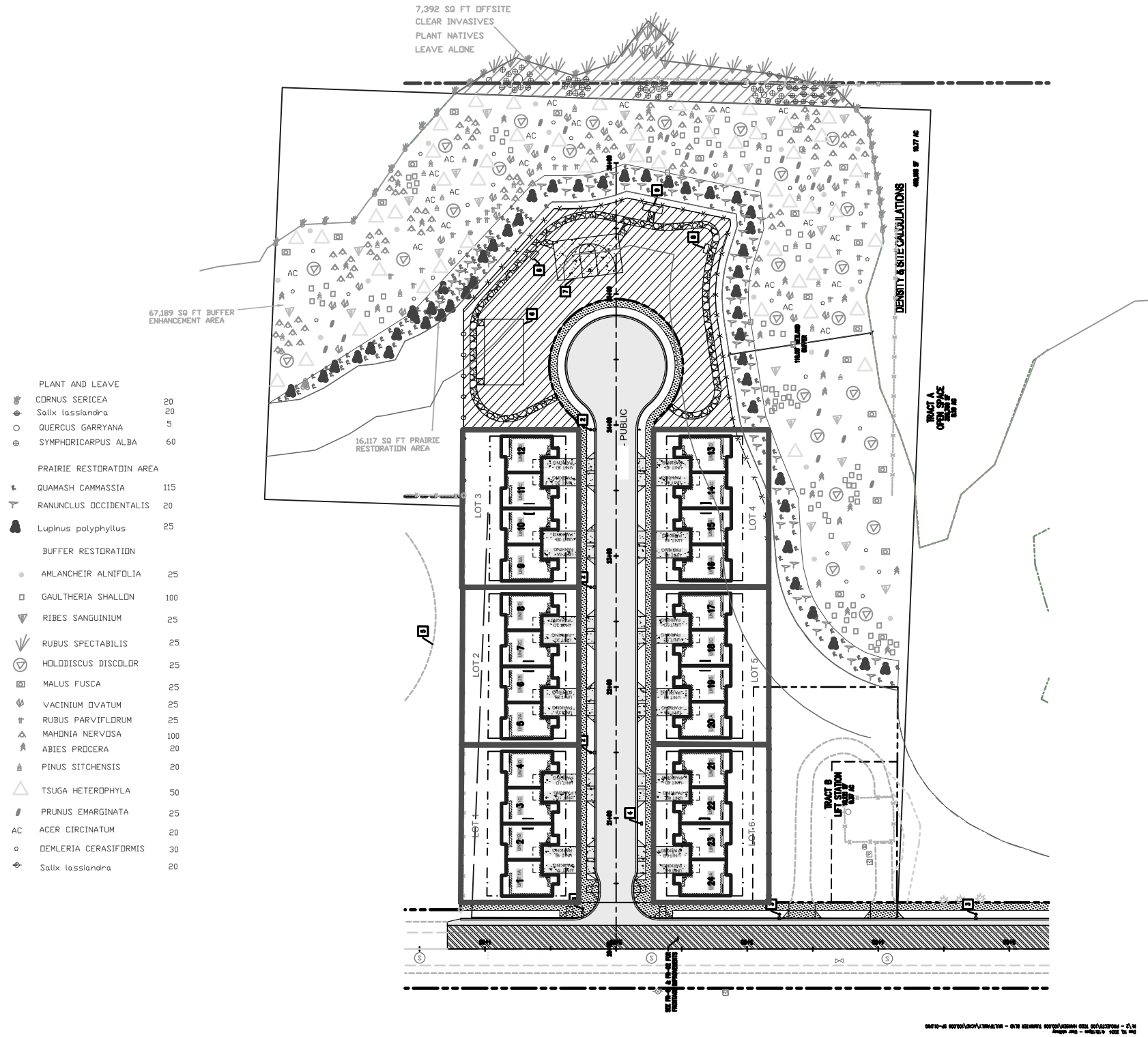
Common Name	Scientific Name	Size	Spacing	Quantity	Cost ea.	Total
Serviceberry	*Almlanchier alnifolia*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Salal	*Gaultheria shallon*	1 Gallon	5 ft O.C.	100	$10.00	$1,000.00
Oregon grape	*Mahonia nervosa*	1 Gallon	5 ft O.C.	100	$3.00	$300.00
Red flowering currant	*Ribes sanguineum*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Salmonberry	*Rubus spectablisi*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Oceanspray	*Holodiscus discolor*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Pacific crabapple	*Malus fusca*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Evergreen huckleberry	*Vaccinium ovatum*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Thimbleberry	*Rubus parviflorum*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Red twig dogwood	*Cornus sericea*	1 Gallon	8 ft O.C.	25	$10.00	$250.00
Noble fir	*Abies procera*	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Sitka spruce	Pinus sitchensis	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Western hemlock	Tsuga Heterophylla	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Bitter cherry	Prunus emarginata	1 Gallon	15 ft O.C.	25	$10.00	$250.00
Vine maple	Acer cercinatum	1 Gallon	15 ft O.C.	20	$10.00	$200.00
Osoberry	Oemleria cerasiformis	1 Gallon	15 ft O.C.	30	$10.00	$300.00
Total				**535**		**$4,650.00**

Table 7- Total Costs

Labor	100/hour	$6,500.00
Mulch	$100/5 yards	$200.00
Monitoring w/report (5 years)*	200.00/yr.	$2,000.00

Plants and Materials		$6,685.00
Total		**$13,385.00**

*=Not included in Costs



PLANT AND LEAVE

	CORNUS SERICEA	20
	Salix lassiandra	20
	QUERCUS GARRYANA	5
	SYMPHORICARPUS ALBA	60

PRAIRIE RESTORATION AREA

	QUAMASH CAMMASSIA	115
	RANUNCLUS OCCIDENTALIS	20
	Lupinus polyphyllus	25

BUFFER RESTORATION

	AMLANCHEIR ALNIFOLIA	25
	GAULTHERIA SHALLON	100
	RIBES SANGUINIUM	25
	RUBUS SPECTABILIS	25
	HOLODISCUS DISCOLOR	25
	MALUS FUSCA	25
	VACINIUM OVATUM	25
	RUBUS PARVIFLORUM	25
	MAHONIA NERVOSA	100
	ABIES PROCERA	20
	PINUS SITCHENSIS	20
	TSUGA HETEROPHYLA	50
	PRUNUS EMARGINATA	25
AC	ACER CIRCINATUM	20
	DEMLERIA CERASIFORMIS	30
	Salix lassiandra	20

PROJECT NAME: TENINO LAND CO MULTIFAMILY
PROJECT #
PARCEL # 79300001100 / 79300001200
ADDRESS - XXXX TUMWATER, WA 98501

LAND SERVICES NORTHWEST
120 STATE AVE NE #190
OLYMPIA, WA 98501
360-481-4208

Figure 6
SITE RESTORATION
PLANTING PLAN
(NOT A SURVEY)

Scale: 1" = 100'

9.5 Monitoring Plan

The planting plan will be monitored for 10 years following the as – built (Year 0). Monitoring of the performance standards will be provided each spring, shortly after leafing out, to aid in plant identification. A report that communicates the findings will be provided to the City staff a month following the monitoring.

The report will contain pictures from photo points established during the as built to allow the City personnel to evaluate site conditions and performance standards. The photos in the report will be taken in four cardinal directions, unless there is a direction that provides a better view. Four photo points that will be established during the as-built (Year 0). Management of performance deficiencies or maintenance will occur during the spring or fall season following monitoring and a summary of management actions will be included in the following year's monitoring report to track effectiveness and adaptively manage the site.

9.6 Performance Standards

The performance standards are as follows:

Year 0 an inventory of plants and photo points will be established for monitoring during the monitoring period within 1 month of the installation.

Year 1-2 will have 100% survival of installed plants. Noxious weeds will be less than 10% aerial coverage.

Volunteer trees or shrubs may account for up to 10 percent of the overall count of surviving plants. Dead plants will be replaced in kind unless a volunteer is a replacement.

Year 2 -10 will have a survival rate of 80 percent of the original count. Volunteers can account for 10 percent of the total if present. Noxious weeds such as Himalayan blackberry, scotch broom, Reed canary grass, and other invasives will not have more than 10 percent aerial coverage of the planting area.

If the area meets the survival and aerial coverage performance measure in year five. The applicant can be given approval to end monitoring.

Japanese knotweed, yellow flag iris, or hogweed will have a zero percent tolerance and be removed or sprayed using an appropriate herbicide approved for aquatic use by a licensed applicator.

The aerial coverage will be 70% by year 5, 80% by year seven and 90% by year 10. If these coverage measures are not met, and it does not appear that they will meet performance measures because of neglect, more plants may be planted to make up the difference.

Failure to meet standards by year 10 will require an additional year of monitoring.

9.7 Contingency Plans

If the site does not meet performance standards. Contingencies may be developed to adapt to the site-specific conditions. Contingencies may include:

- Increased watering

- Mulching
- Integrated Pest Management
- Microtopography changes
- Species substitution
- Herbivory protection
- Bark wrap

The area is frequented by deer and the choice of plants were chosen to avoid herbivory issues, but exclusion fencing may be necessary until the plants reach maturity. This is not expected to be needed to be a permanent fixture if required. Any contingencies will be developed in conjunction with landscapers, nursery staff, and other experts. The city would be notified in advance of the contingency plans. No contingencies will be applied without city consent.

9.6 Performance Bonds and Demonstration of Competence.

A demonstration of financial resources, administrative, supervisory, and technical competence and scientific expertise of sufficient standing to successfully execute the compensation project shall be provided. A compensation project manager shall be named and the qualifications of each team member involved in preparing the rehabilitation plan and implementing and supervising the project shall be provided, including educational background and areas of expertise, training and experience with comparable projects. In addition, bonds ensuring the fulfillment of the compensation project, monitoring program, and any contingency measure shall be posted pursuant to TMC 16.28.210 in the amount of one hundred twenty percent of the expected cost of compensation.

The applicant will provide a bond for the fullfillment, monitoring program, contingency measures in the amount of one hundred twenty percent of the expected cost which is given in this report.

The funds are to comply with the surety provisions in Tumwater code.

10.0 SUMMARY AND CONCLUSIONS

The project proposes a 6 lot quad unit multifamily subdivision with roads, sewer, water, utilities, parking and waste facilities.

Two wetlands were identified within 315 feet of the subject property.

Wetland A is a Category II wetland maintaining a 150-foot-high intensity land use buffer. This buffer can be reduced to the 110-foot moderate intensity land use buffer using the mitigation measures in the Table 16.28.170(5): Measures to Minimize Impacts to Wetlands.

Wetland B is a Category III 150-foot-high intensity land use buffer. This buffer can be reduced to the 110-foot moderate intensity land use buffer using the mitigation measures in the Table 16.28.170(5).

A wetland and prairie rehabilitation that will go beyond the requirements for wetland buffer impacts due to the project has been provided to meet the conditions for a PUD project. The project will create a new prairie and wetland buffer that will be educational and improve overall ecological functions in the

area while providing a unique opportunity to restore south sound prairie for the endangered Taylor checkerspot butterfly and Mardon skipper butterfly. The plantings will improve food cover, structure and diversity.

No impacts to wetlands is proposed, and the applicant will provide a robust rehabilitation with wetland and prairie enhancement in order to improve the habitat and wetland functions. Tumwater will soon have a property that can sustainably exist in concert with the nearby critical areas, without impacting wetland functions to the benefit of the citizens of the City of Tumwater.

11.0 LIMITATIONS

This report was created with care and best professional judgment using the current best available science, but the report is subject to interpretation by local state and federal regulators who have the final regulatory authority on wetlands and other boundary determinations. No outcomes are warranted by this report.

12.0 REFERENCE

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Washington State Department of Fish and Wildlife. 1999. Species of concern: State candidate species. WDFW. Olympia, WA.

Appendix A – Photographs

LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

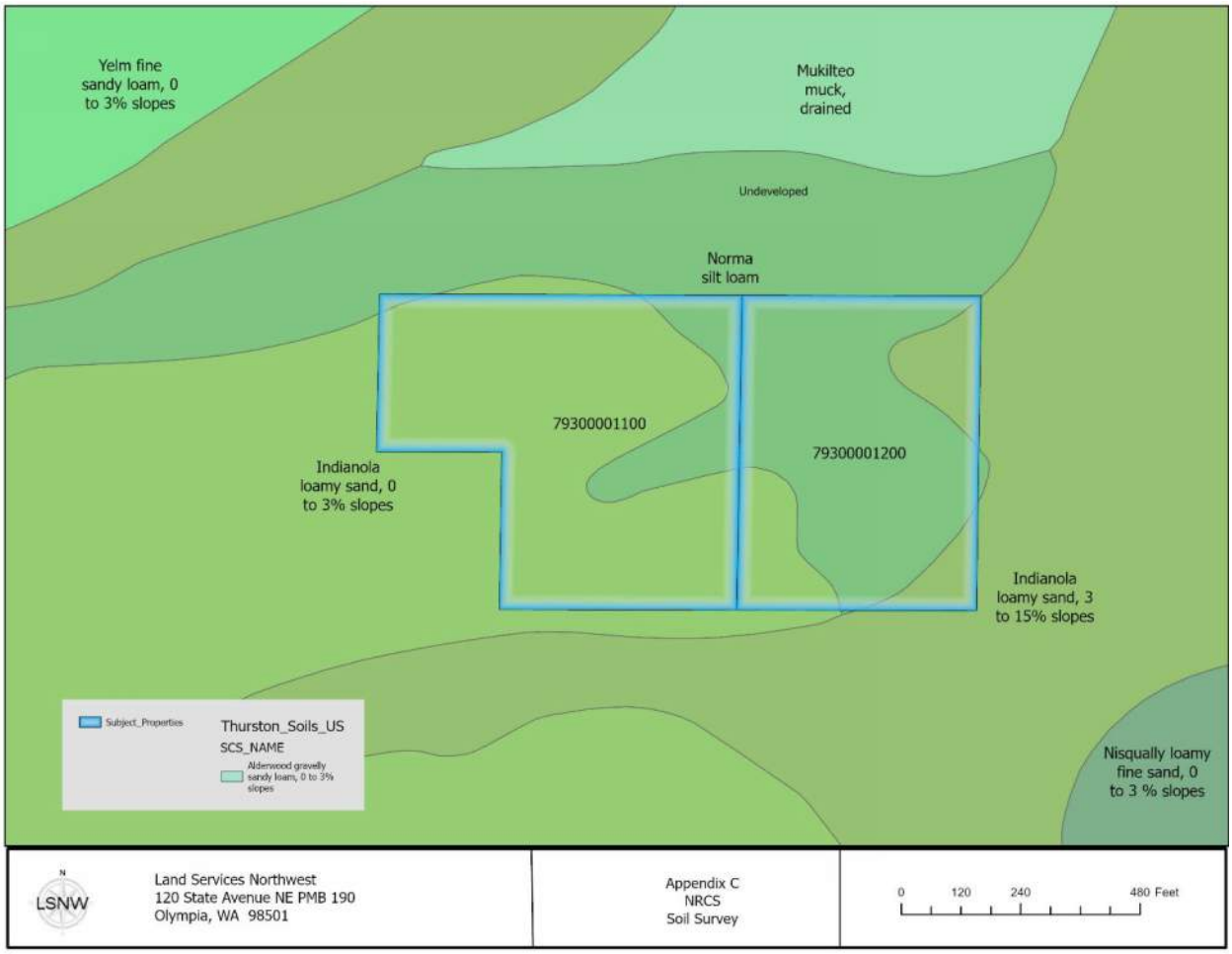
LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
Oswet a
934 Tumwater Blvd SE, Olympia, WA 98501

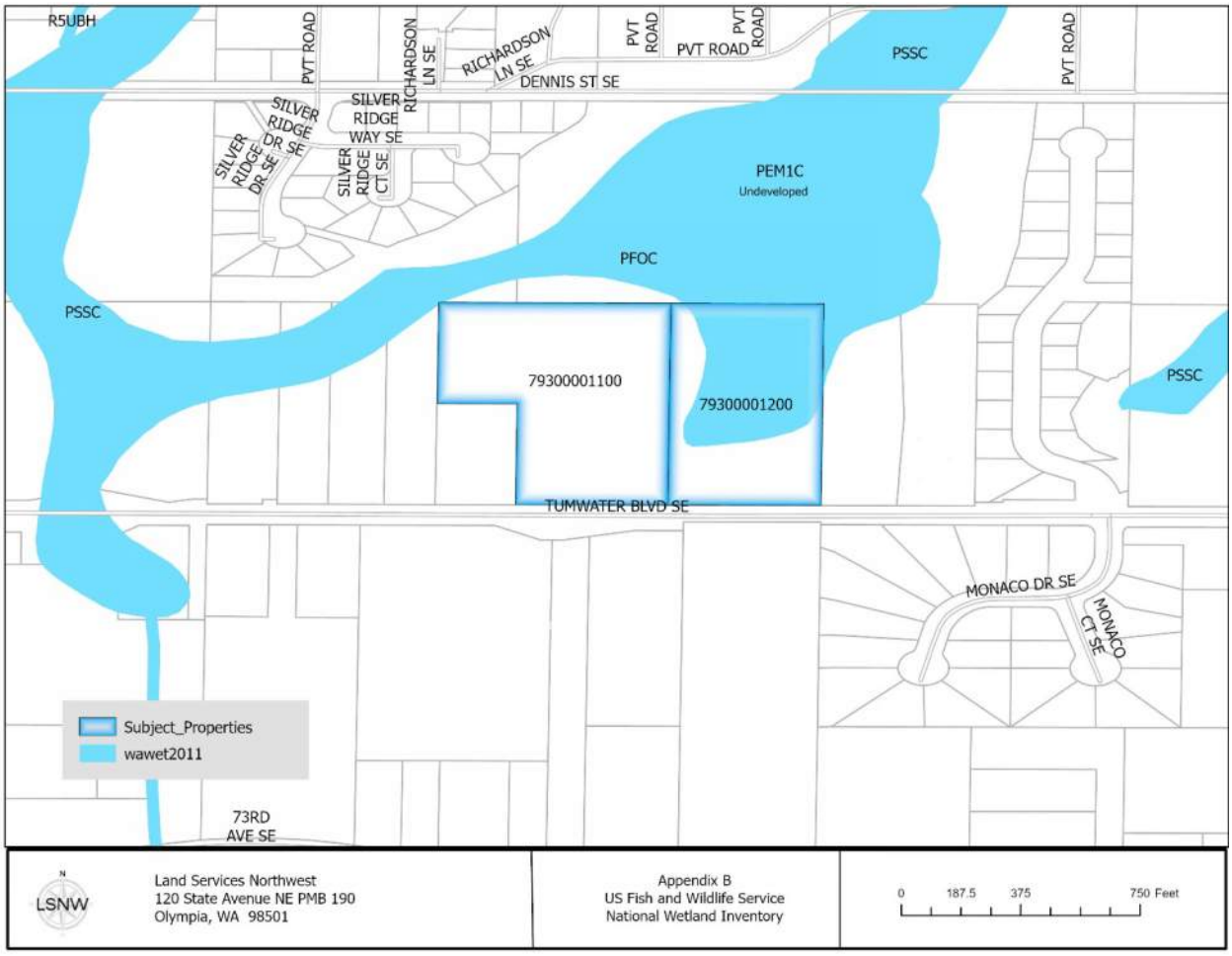
LSNWw5
Project: Tenino LAND
Tp1
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
Tp2
934 Tumwater Blvd SE, Olympia, WA 98501

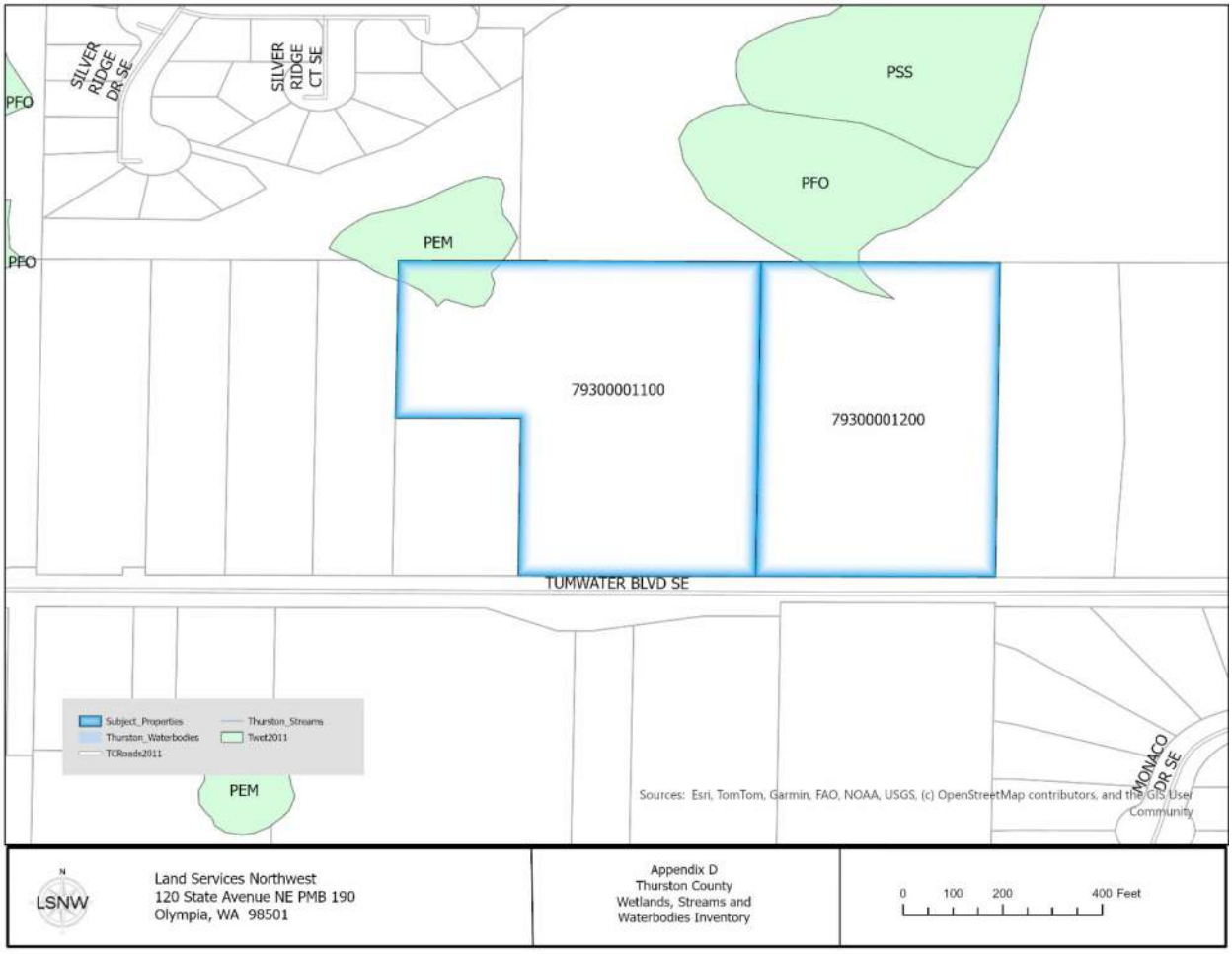
Appendix B - U.S. Fish and Wildlife Service NWI MAP



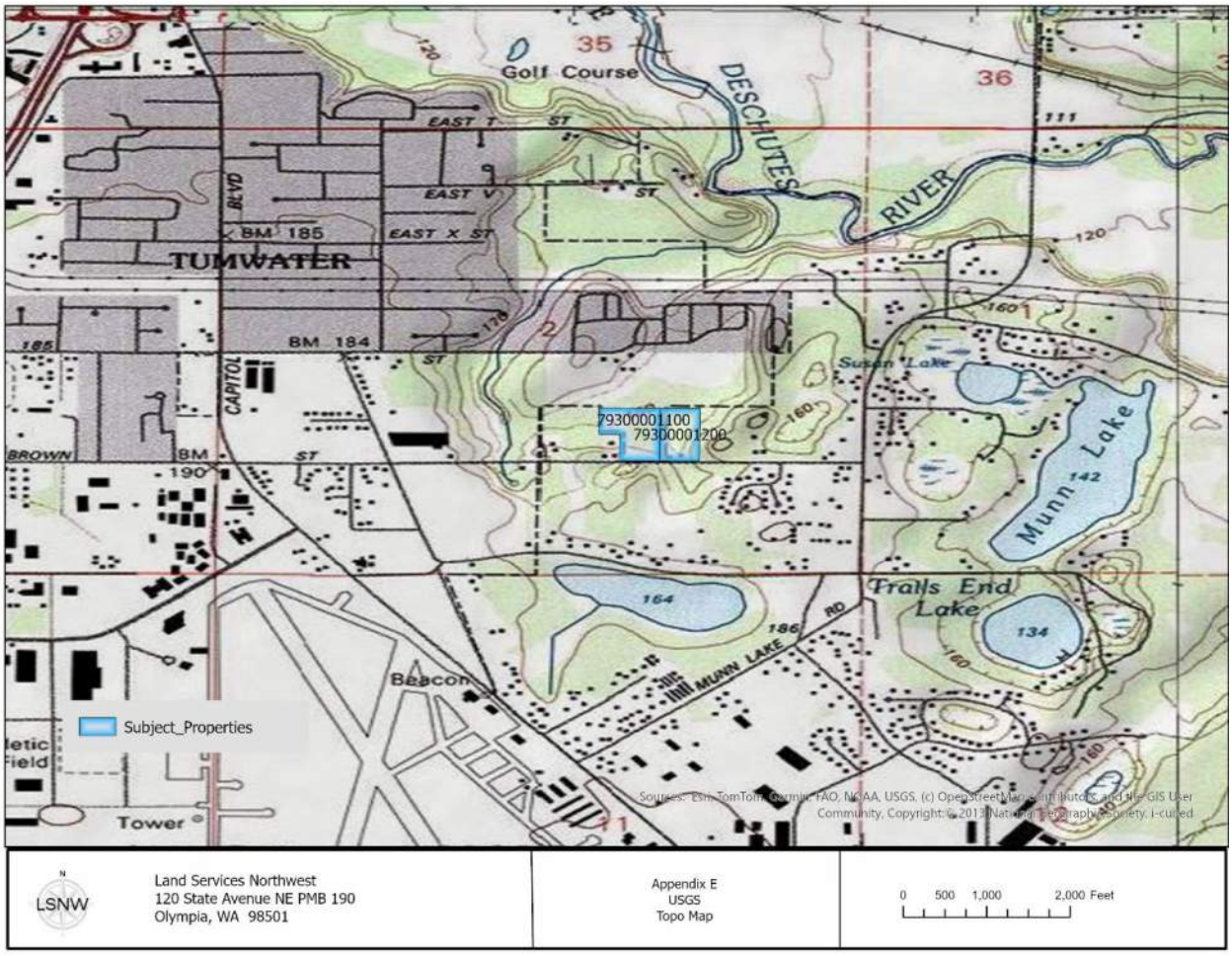
Appendix C - NRCS Soil Survey Map for Thurston County



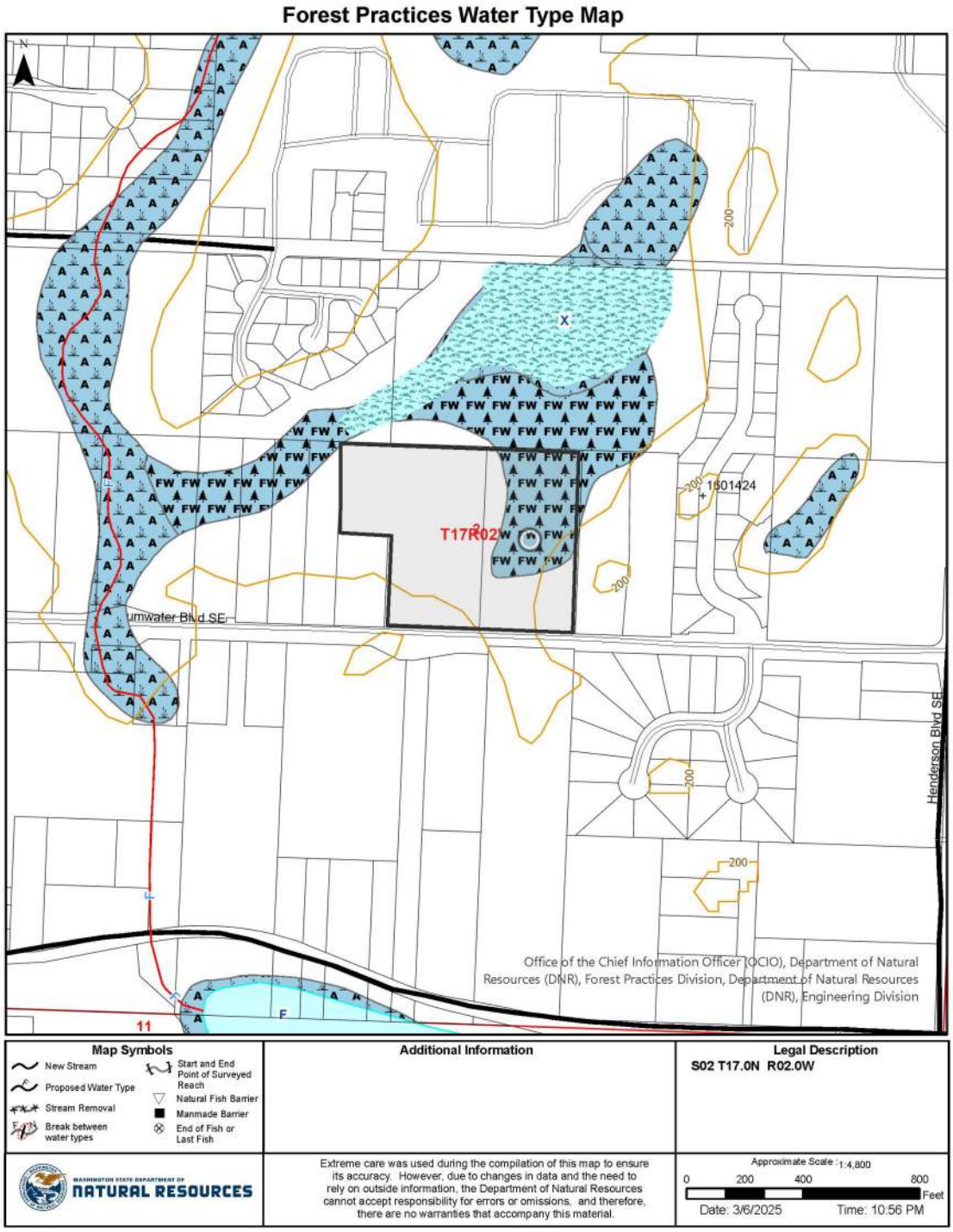
Appendix D - Thurston County Stream and Wetland inventory



Appendix E – USGS 7.5 Minute Topographic Map

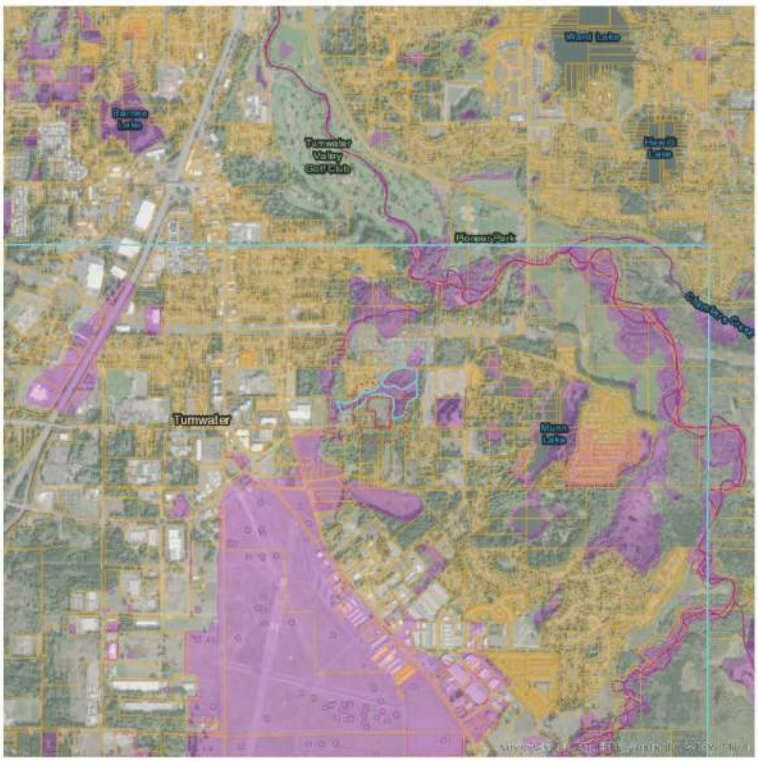


Appendix F – WADNR Forest Practices Stream Type Map



Appendix G – WDFW Priority Habitats and Species Map and Salmonscape Map

Priority Habitats and Species on the Web



Buffer radius: 330 Feet

Report Date: 05/13/2024, Parcel ID: 79300001100

PHS Species/Habitats Overview:

Occurence Name	Federal Status	State Status	Sensitive Location
Freshwater Emergent Wetland	N/A	N/A	No
Freshwater Forested/Shrub Wetland	N/A	N/A	No
Big brown bat			Yes
myotis spp			Yes
Townsend's Big-eared Bat		Candidate	Yes

PHS Species/Habitats Details:

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

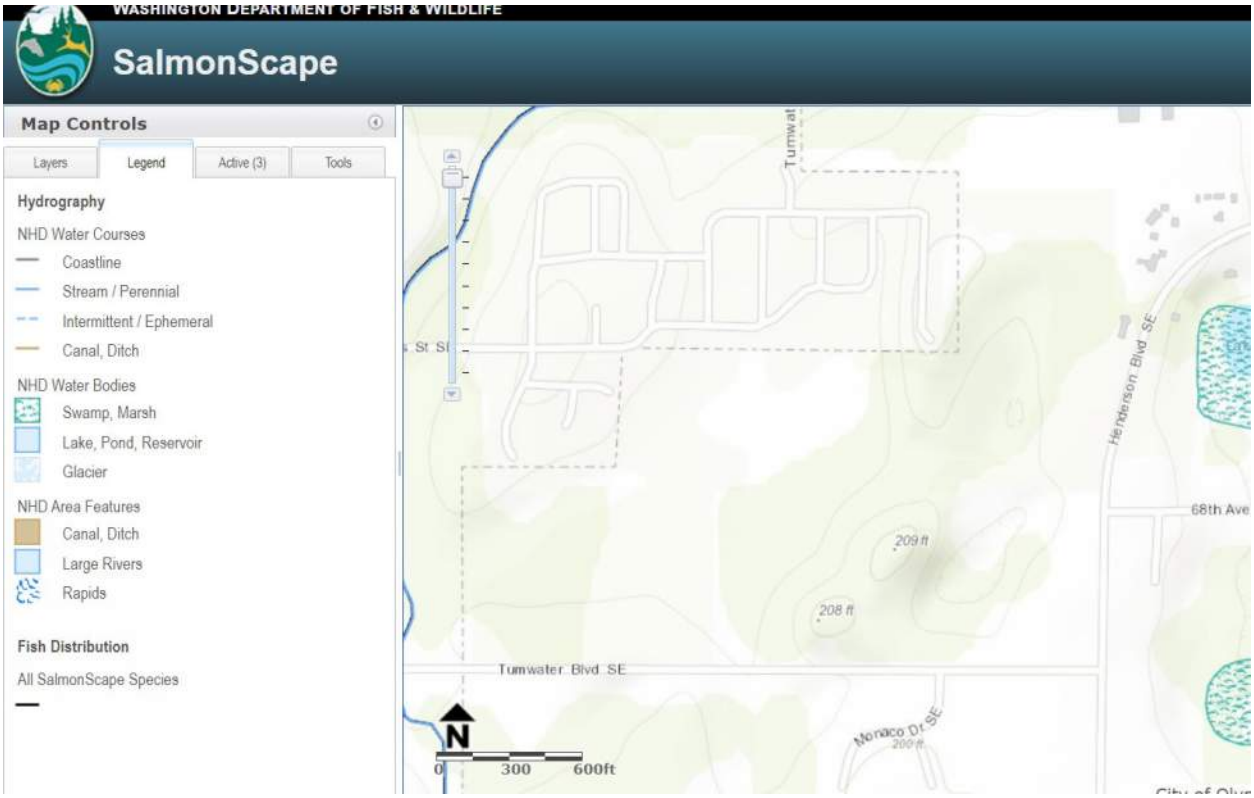
Freshwater Forested/Shrub Wetland	
Priority Area	Aquatic Habitat
Site Name	N/A
Accuracy	NA
Notes	Wetland System: Freshwater Forested/Shrub Wetland - NWI Code: PFOC
Source Dataset	NWIWetlands
Source Name	Not Given
Source Entity	US Fish and Wildlife Service
Federal Status	N/A
State Status	N/A
PHS Listing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

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

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

Townsend's Big-eared Bat	
Scientific Name	*Corynorhinus townsendii*
Notes	This polygon mask represents one or more records of the above species or habitat occurrence. Contact PHS Data Release at phsproducts@dfw.wa.gov for obtaining information about masked sensitive species and habitats.
State Status	Candidate
PHS Listing Status	PHS Listed Occurrence
Sensitive	Y
SGCN	Y
Display Resolution	TOWNSHIP
ManagementRecommendations	http://wdfw.wa.gov/publications/pub.php?id=00027

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


WASHINGTON DEPARTMENT OF FISH & WILDLIFE
SalmonScape
Map Controls
Layers
Legend
Active (3)
Tools
Hydrography
NHD Water Courses
Coastline
Stream / Perennial
Intermittent / Ephemeral
Canal, Ditch
NHD Water Bodies
Swamp, Marsh
Lake, Pond, Reservoir
Glacier
NHD Area Features
Canal, Ditch
Large Rivers
Rapids
Fish Distribution
All SalmonScape Species
Henderson Blvd SE
68th Ave
209 ft
208 ft
Tumwater Blvd SE
Monaco Dr SE
N
0
300
600ft

Appendix H - USACE WMVC Soil Data Sheets

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP1
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No	

Is the Sampled Area within a Wetland? **Yes x No**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	25	Y	FAC
2.			
3.			
4.			
	25	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1. *Rubus spectabilis*	10	Y	FAC
2.			
3.			
4.			
5.			
	10	= Total Cover	

Herb Stratum (Plot size:)			
1. *Lysichiton americanus*	25	Y	OBL
2. *Athyrium cyclosorum*	20	Y	FAC
3. *Equisetum arvense*	3	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	47	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

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 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes x No**

Remarks: 100% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP1

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR2/1	100					Sandy loam	
16-18	10YR4/2	85	10YR4/6	15			Sandy 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)
- x 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** x **No** ___

Remarks: Hydric soil F3 indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- x 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 x No ___ Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks: Hydro at surface.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 8.16.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP1A
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes	x	No	
Wetland Hydrology Present?	Yes	x	No	

Is the Sampled Area within a Wetland? **Yes x No**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Thuja plicata*	35	Y	FAC
2. *Alnus rubra*	55	Y	FAC
3.			
4.			
	90	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1. *Rubus spectabilis*	25	Y	FAC
2.			
3.			
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size:)			
1. *Lysichiton americanus*	20	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum

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 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes x No**

Remarks: Greater than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP1A

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
0-2	10YR2/1	100						Silt loam
2-20	10YR6/2	90	10YR6/8	10				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)
- x 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** x **No** ____

Remarks: Depleted matrix present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X 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)
- x 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)
- X 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 X No ___ Depth (inches): _____

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ____

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

Remarks: Water-stained leaves present. Hydro at surface

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 8.16.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP1B
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes		No	x
Hydric Soil Present?	Yes		No	x
Wetland Hydrology Present?	Yes		No	x

Is the Sampled Area within a Wetland? **Yes** **No** **x**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	IndicYator Status
1 *Acer circinatum*	35	Y	FAC
2. *Thuja plicata*	25	Y	FAC
3.			
4.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size:)			
1. *Gaultheria shallon*	35	Y	FACU
2. *Rubus ursinus*	25	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60	= Total Cover	

Woody Vine Stratum (Plot size:)		
1.		
2.		
		= Total Cover

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	60	x 3 =	180
FACU species	60	x 4 =	240
UPL species		x 5 =	
Column Totals:	120 (A)		420 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** **No** **x**

Remarks: Less than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP1B

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR3/2	100						Fine sand
4-14	10YR4/3	100						Fine sand
14-18	10YR4/2	100						Fine sand

[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** x

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks: No wetland hydrology indicators present.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP2
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	___	No	x
Hydric Soil Present?	Yes	___	No	x
Wetland Hydrology Present?	Yes	___	No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga heterophylla*	95	Y	FACU
2. *Acer circinatum*	5	N	FAC
3.			
4.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___	= Total Cover	

Herb Stratum (Plot size: ___)			
1. *Polystichum munitum*	10	Y	FACU
2. *Maianthemum dilatatum*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20	= Total Cover	

Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___	= Total Cover	

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ___ **No** x

Remarks: Less than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP2

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	Organic	100						
2-16	10YR4/3	100					Sandy loam	
16-18	10YR4/2	100					Sandy 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** x

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks: No wetland hydrology indicators present.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP3
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	x	No	
Hydric Soil Present?	Yes		No	x
Wetland Hydrology Present?	Yes		No	x

Is the Sampled Area within a Wetland? **Yes** ___ **No** x

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Alnus rubra*	75	Y	FAC
2.			
3.			
4.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Herb Stratum (Plot size:)			
1. *Urtica dioica*	15	Y	FAC
2. *Equisetum arvense*	10	Y	FAC
3. *Galium aparine*	5	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (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 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** x **No** ___

Remarks: Greater than 50% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP3

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR4/3	100					Sandy loam	
16-18	10YR4/2	100					Sandy 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** x

Remarks: No hydric soil indicators present.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** x

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

Remarks: No wetland hydrology indicators present.

Item 2a.

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

Project/Site: Tenino Land Company City/County: Tumwater/Thurston Sampling Date: 5.8.24
Applicant/Owner: Tenino Land Company State: WA Sampling Point: TP4
Investigator(s): Alex Callender Section, Township, Range: 02172W
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):
Subregion (LRR): 2 Lat: Long: Datum: Wgs84
Soil Map Unit Name: Indianola NWI classification:
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ___ (If no, explain in Remarks.)
Are Vegetation ___ , Soil ___ , or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes x No ___
Are Vegetation ___ , Soil ___ , or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes x No ___
Hydric Soil Present? Yes x No ___
Wetland Hydrology Present? Yes x No ___

Is the Sampled Area within a Wetland? Yes x No ___

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1. *Rubus spectabilis*	25	Y	FAC
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: ___)			
1. *Athyrium cyclosorum*	45	Y	FAC
2. *Lysichiton americanus*	35	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ___

Remarks: 100% of dominant vegetation is FAC or wetter.

Item 2a.

SOIL

Sampling Point: TP4

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 %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-14	10YR2/1	100					Sandy loam	
14-18	10YR4/2	90	10YR4/6	10			Sandy 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)
- x 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** x **No** ___

Remarks: Hydric soil F3 indicator present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- x 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 x No ___ Depth (inches): _____

Water Table Present? Yes ___ No x Depth (inches): _____

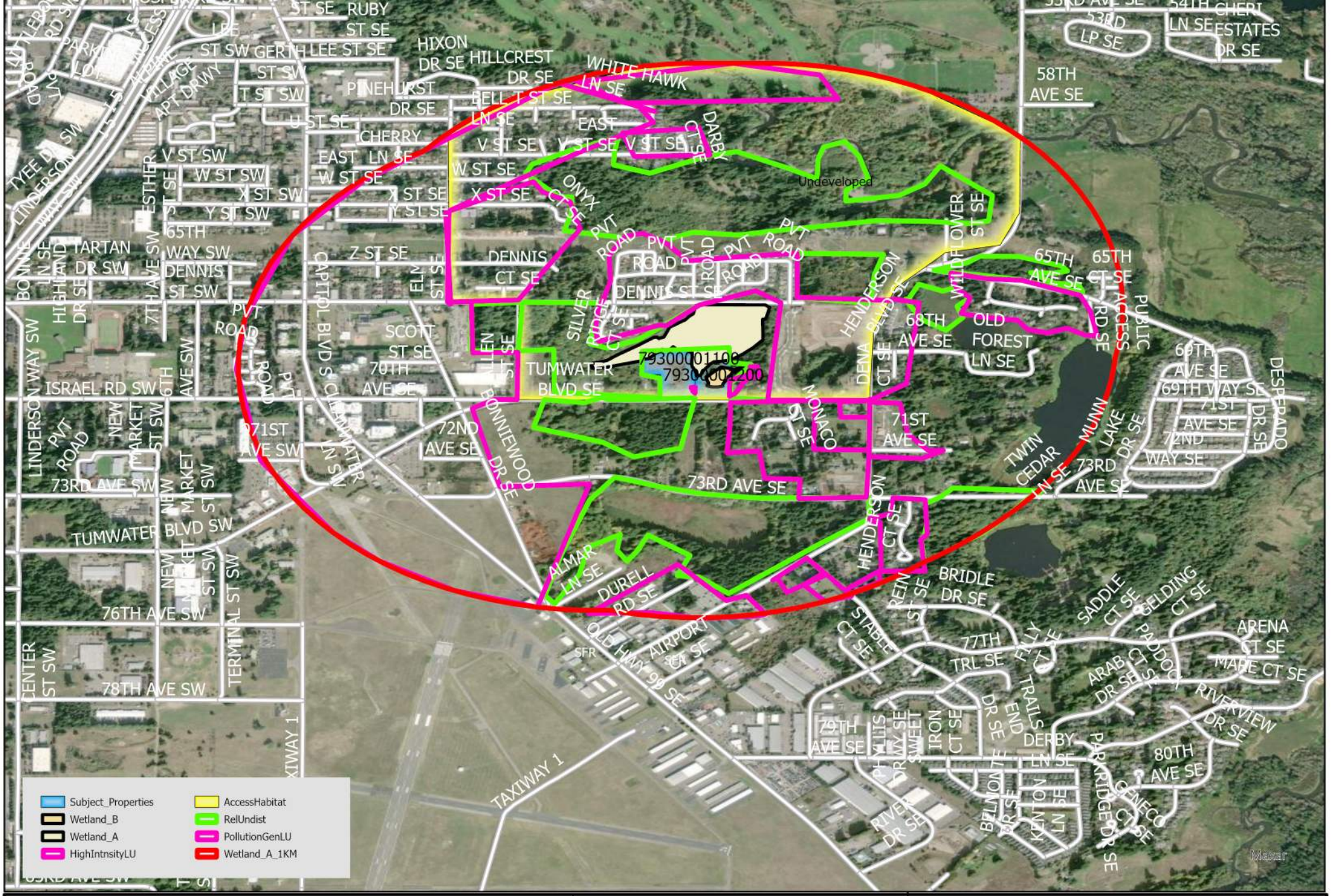
Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): _____

Wetland Hydrology Present? **Yes** x **No** ___

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

Remarks: Hydro at surface.

Appendix I - ECY Wetland Rating Forms for Western Washington



Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

1KM Land Use Intensity Map
Wetland A

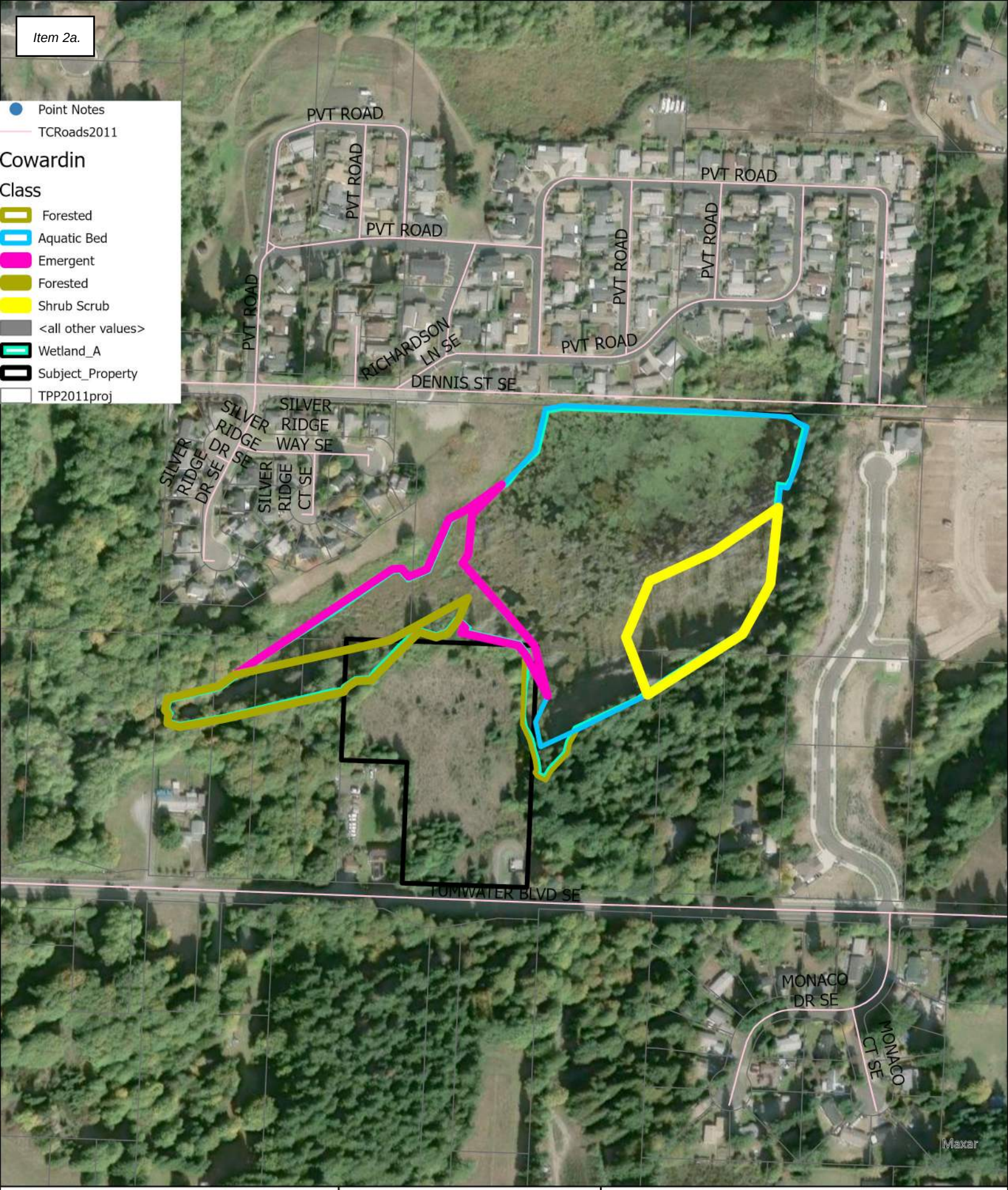
0 500 1,000 2,000 Feet

Item 2a.

Land Use Calculations

	ACRES	%	
1KM	874		
Wetland A	2.19		
1KM-Wetland A	871.81	100	
High Intensity	36	0.041293	4.12934
Relatively Undisturbed	415	0.476021	47.60212
Low Medium Use	423	0.485197	48.51975

Accessible Habitat	848		
Wetland A	2.19	0.002583	0.258255
Accessible-WetA	845.81	0.970177	97.0177
RU	135	0.154462	15.44622
Low/Medium LU	677	0.776545	77.65453
High Intensity	36	0.041293	4.12934



Land Services NW
120 State Avenue PMB190
Olympia, WA 98501
360-[illegible]-4208

LSNW

Cowardin Classification Map

0 155 310 620 US Feet

Land Services Northwest
State Avenue NE PMB 190
mpia, WA 98501
481-4208

N

LSNW

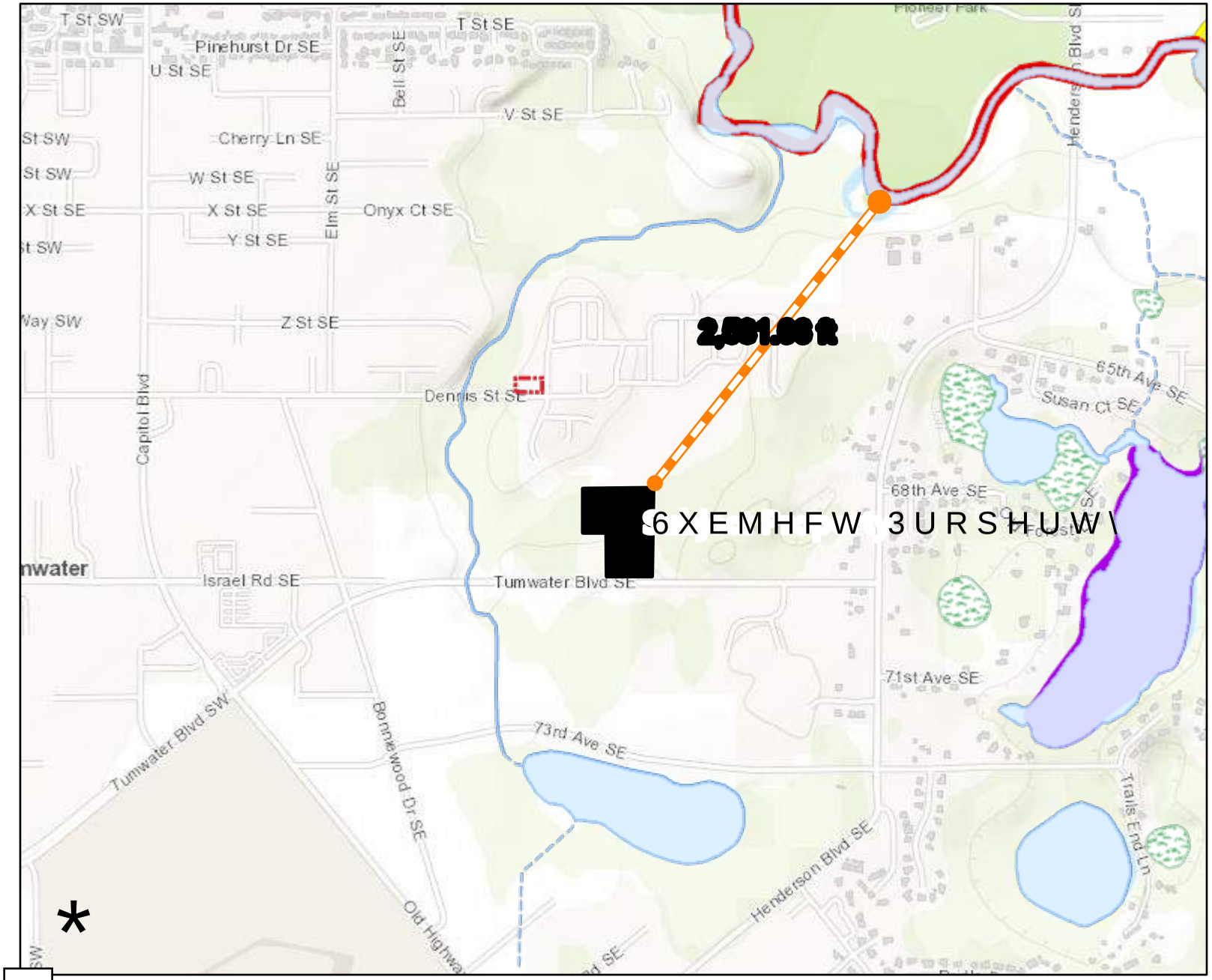
Hydroperiod Classification Map

0 50 100 200 Feet

TENINO LAND CO

Item 2a.

G :DWHU 4XDOLW\ $WODV 0DS



$VVHVVHG :DWHU 6

:DWHU

- &DWHJRU\ G
- &DWHJRU\ &
- &DWHJRU\ %
- &DWHJRU\ $
- &DWHJRU\
- &DWHJRU\

6HGLPHQW

- &DWHJRU\ G
- &DWHJRU\ &
- &DWHJRU\ %
- &DWHJRU\ $
- &DWHJRU\
- &DWHJRU\

&LWLHV

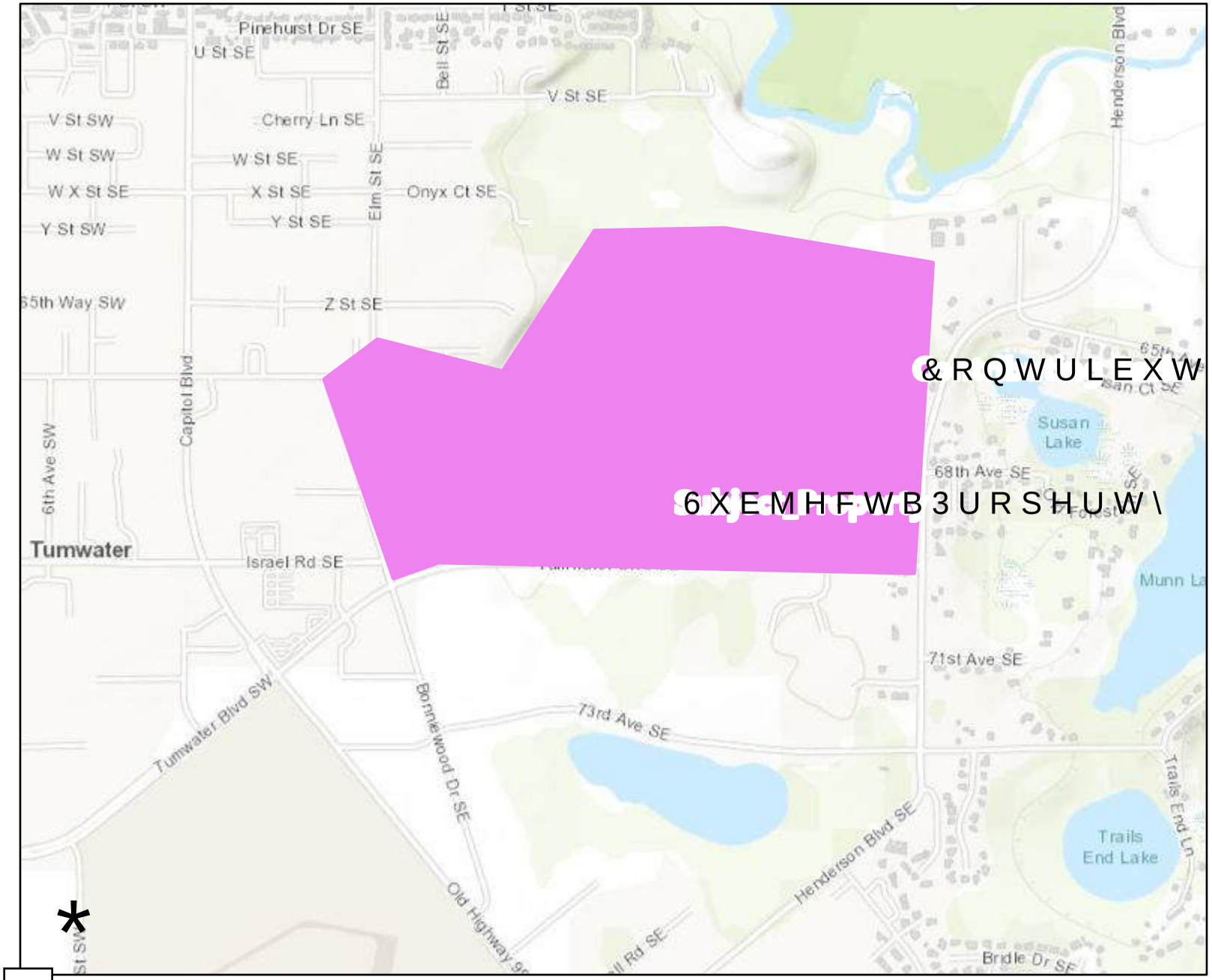
- &LW\ OLPLWV

3DUFHOV

- 3DUFHO ERXQGDU\

(VUL &RPPXQLW\ 0DSV &RQWULEXWRUV &LW\ RI 2O\PSLD :$ 6WDWH 3DUNV *,6
(VUL 7RP7RP *DUPLQ 6DIH*UDSK *HR7HFKQRORJLHV ,QF 0(7, 1$6$
86*6 %XUHDX RI /DQG 0DQDJHPHQW (3$ 136 86 &HQVXV %XUHDX 86'$

&RQWULEXWLQJ %DVLQ



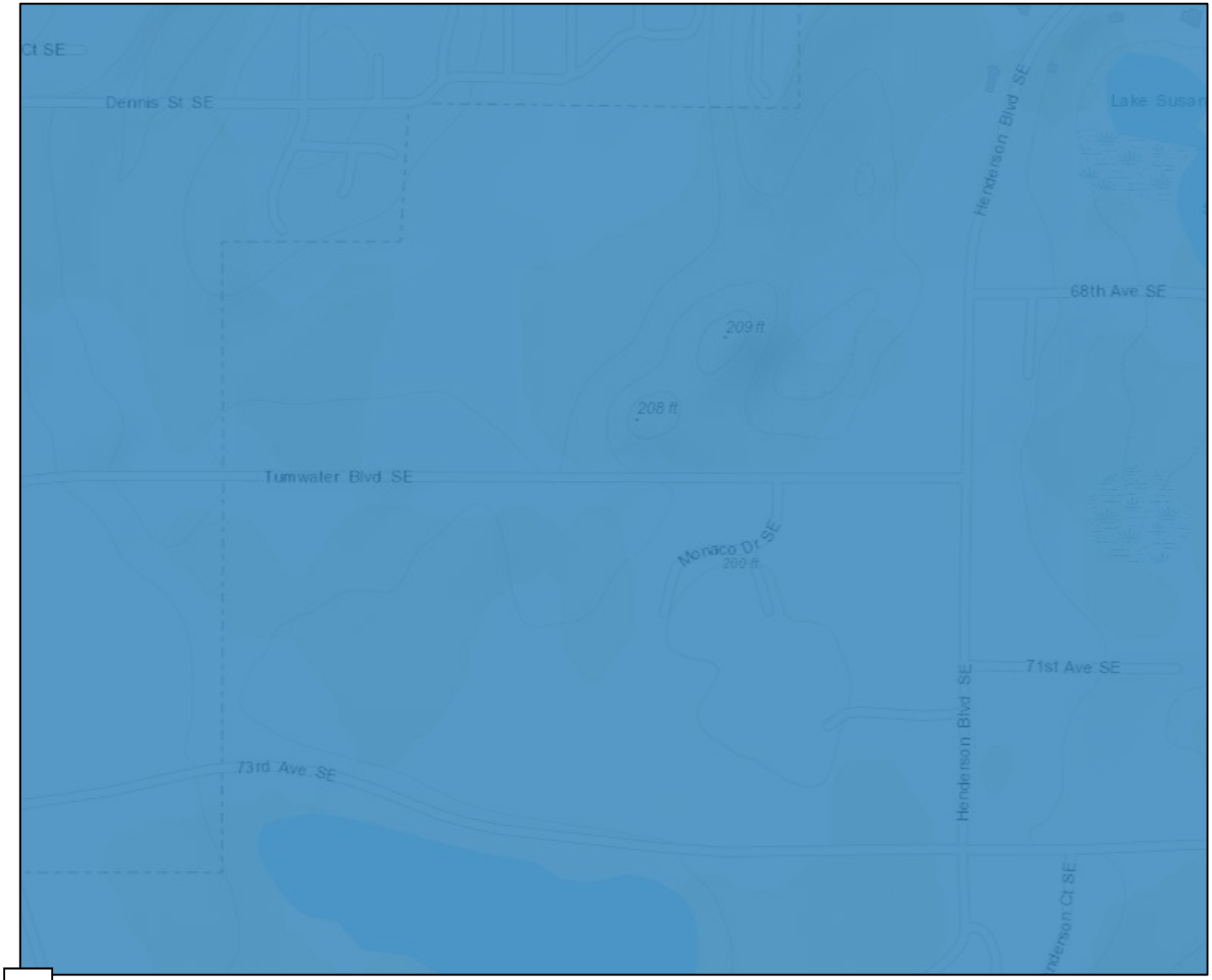
3DUFHOV
3DUFHO ERXQGDU\

6XEEDVLQV GLJL
+8& ERXQGDU\

0LOHV

(VUL &RPPXQLW\ 0DSV &RQWULEXWRUV &LW\ RI 2O\PSLD :$ 6WDWH 3DUNV *,6
(VUL 7RP7RP *DUPLQ 6DIH*UDSK *HR7HFKQRORJLHV ,QF 0(7, 1$6$
86*6 %XUHDX RI /DQG 0DQDJHPHQW (3$ 136 86 &HQVXV %XUHDX 86'$

70'/ 3URMHFWV



:4 ,PSURYHPHQW 3U
70'/ $SSURYHG
% $SSURYHG
67, $SSURYHG
$53 $SSURYHG
70'/ ,Q 'HYHORSPH
67, ,Q 'HYHORSPHQ
$53 ,Q 'HYHORSPHQ

0LOHV

(VUL 1$6$ 1*$ 86*6)(0$
6RXUFHV (VUL +(5(*DUPLQ ,QWHUPDS LQFUHPHQW 3 &RUS *(%&2 86*6
)$2 136 15&$1 *HR%DVH ,*1 .DGDVWHU 1/ 2UGQDQFH 6XUYH\ (VUL

Item 2a.

Wetland name or number A

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Tumwater Boulevard Date of site visit: 5.8.24

Rated by Alex Callender Trained by Ecology? x Yes ___No Date of training 12.13

HGM Class used for rating Depression Wetland has multiple HGM classes? ___Y x ___N

NOTE: **Form is not complete without the required figures** (figures can be combined).

Source of base aerial photo/map 2024 Esri Aerial

OVERALL WETLAND CATEGORY 11 (based on functions x or special characteristics__)

1. Category of wetland based on FUNCTIONS

_____**Category I** – Total score = 23 - 27

x **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	7	20

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	x

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	Cowardin
Hydroperiods	D 1.4, H 1.2	Hydro
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	Outlet
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	150 ft
Map of the contributing basin	D 4.3, D 5.3	303d
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	1km
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	303d
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

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	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	4
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	0
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	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	1
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	

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	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	5
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	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 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

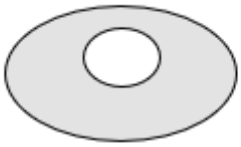
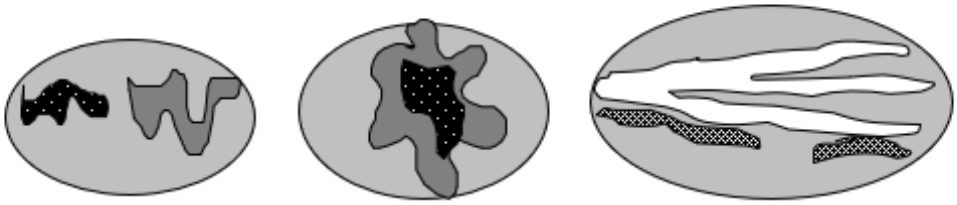
Rating of Landscape Potential If score is: **__3 = H** **√ 1 or 2 = M** **___0 = L** *Record the rating on the first page*

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 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. x Aquatic bed — 4 structures or more: points = 4 x Emergent — 3 structures: points = 2 x Scrub-shrub (areas where shrubs have > 30% cover) — 2 structures: points = 1 x Forested (areas where trees have > 30% cover) — 1 structure: points = 0 *If the unit has a Forested class, check if:* x 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). x Permanently flooded or inundated — 4 or more types present: points = 3 x 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	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 	3

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. x Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). x 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) x 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) x 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	13

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 12 + [(% moderate and low intensity land uses)/2] 5 = 14.5 % 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 10 + [(% moderate and low intensity land uses)/2] 44 = 32 % 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	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** — **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**

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** — **Cat. II**

SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?

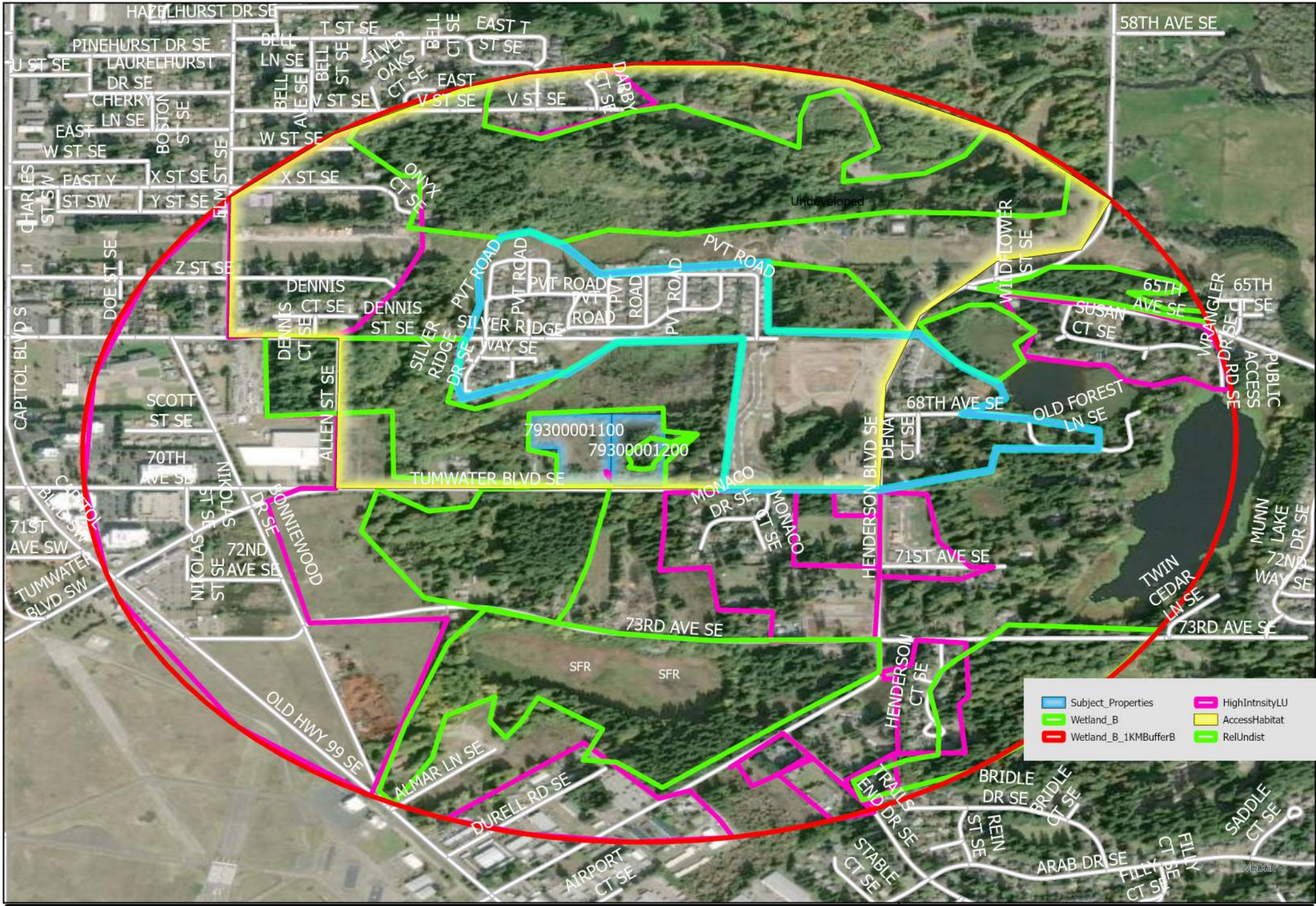
Yes = **Category II** No – Go to **SC 6.3** — **Cat. III**

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



Item 2a.

Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

1KM Land Use Intensity Map

0 475 950 1,900 Feet

Land Use Calculations

	ACRES		%
1KM	857		
Wetland B	1.06		
1KM-Wetland B	855.94		100
High Intensity	309	0.361007	36.10066
Relatively Undisturbed	260	0.30376	30.37596
Low Medium Use	286.94	0.335234	33.52338
Accessible Habitat	401	0.467911	
Wetland B	1.06		
Accessible Habitat-Wet B	399.94	0.467252	
RU	138	0.161226	16.12263
Low/Medium LU	160.94	0.188173	18.81731
High Intensity	101	0.117853	11.7853

Item 2a.

N

SNW

Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

Cowardin Classification Map

0 26.5 53 106 Feet

Item 2a.

N

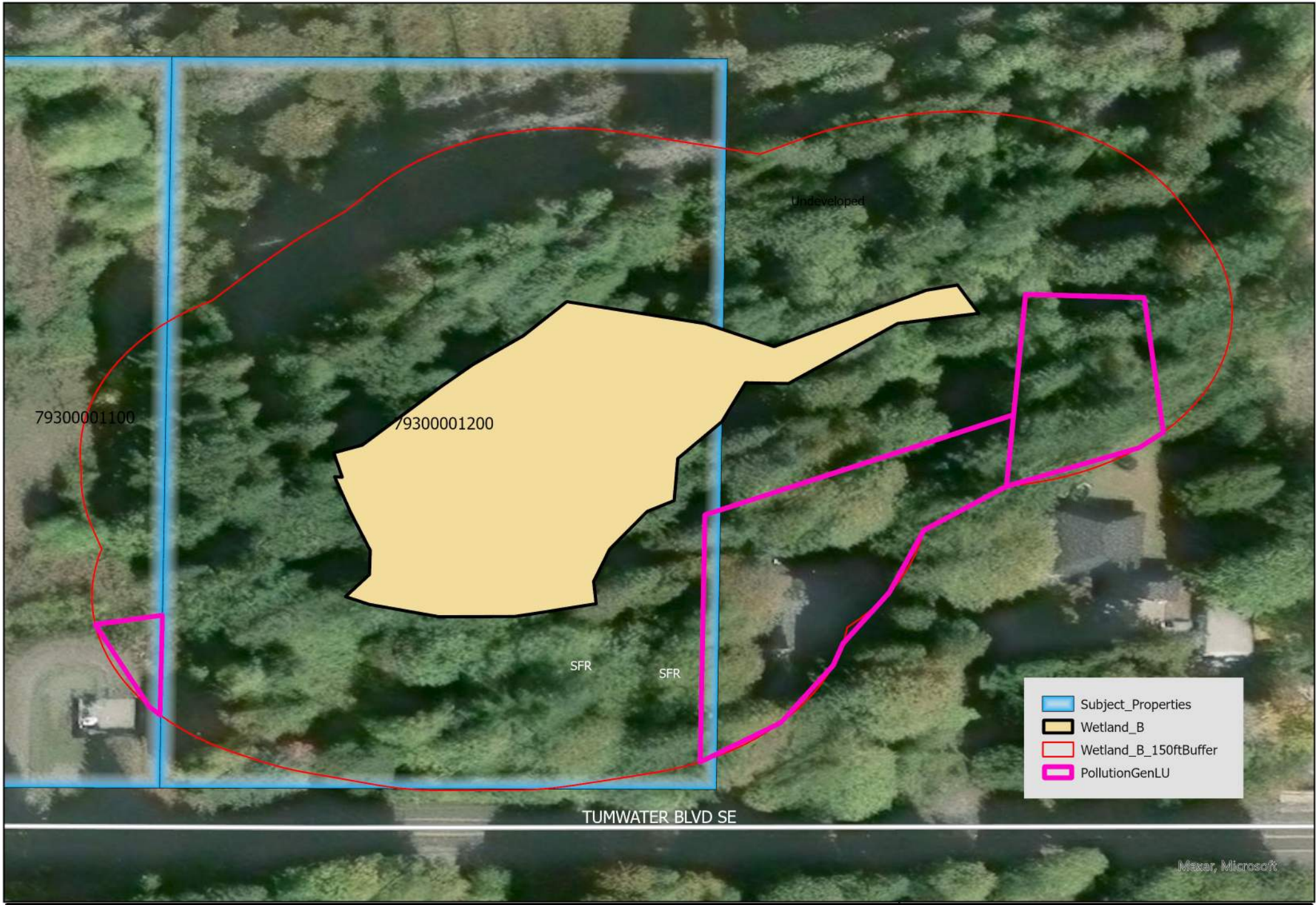
SNW

Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

Hydroperiod Classification Map

0 26.5 53 106 Feet

380



Item 2a.

N

SNW

Land Services Northwest
120 State Avenue NE PMB 190
Olympia, WA 98501

150ft Pollution Generating Land Use

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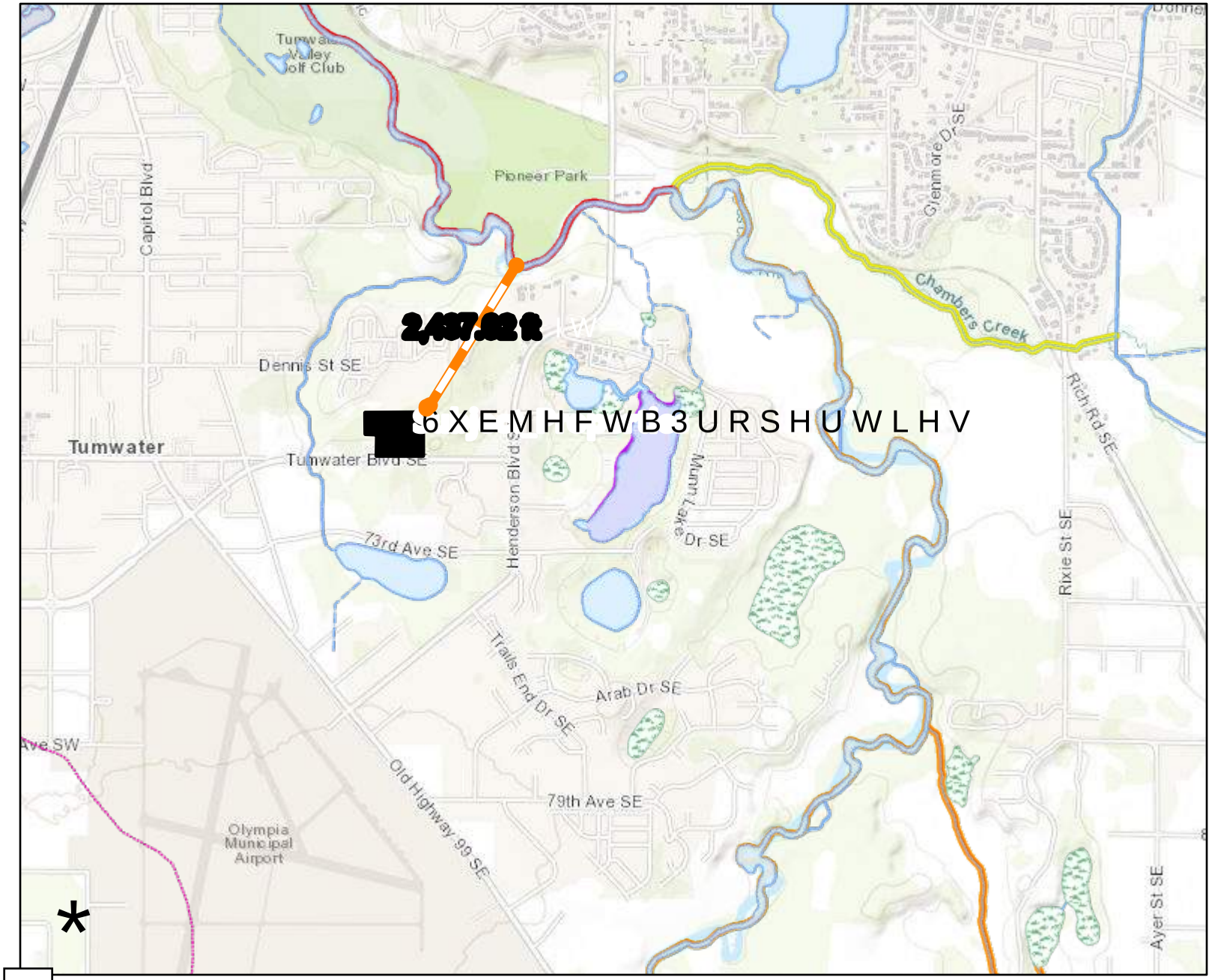

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Item 2a.

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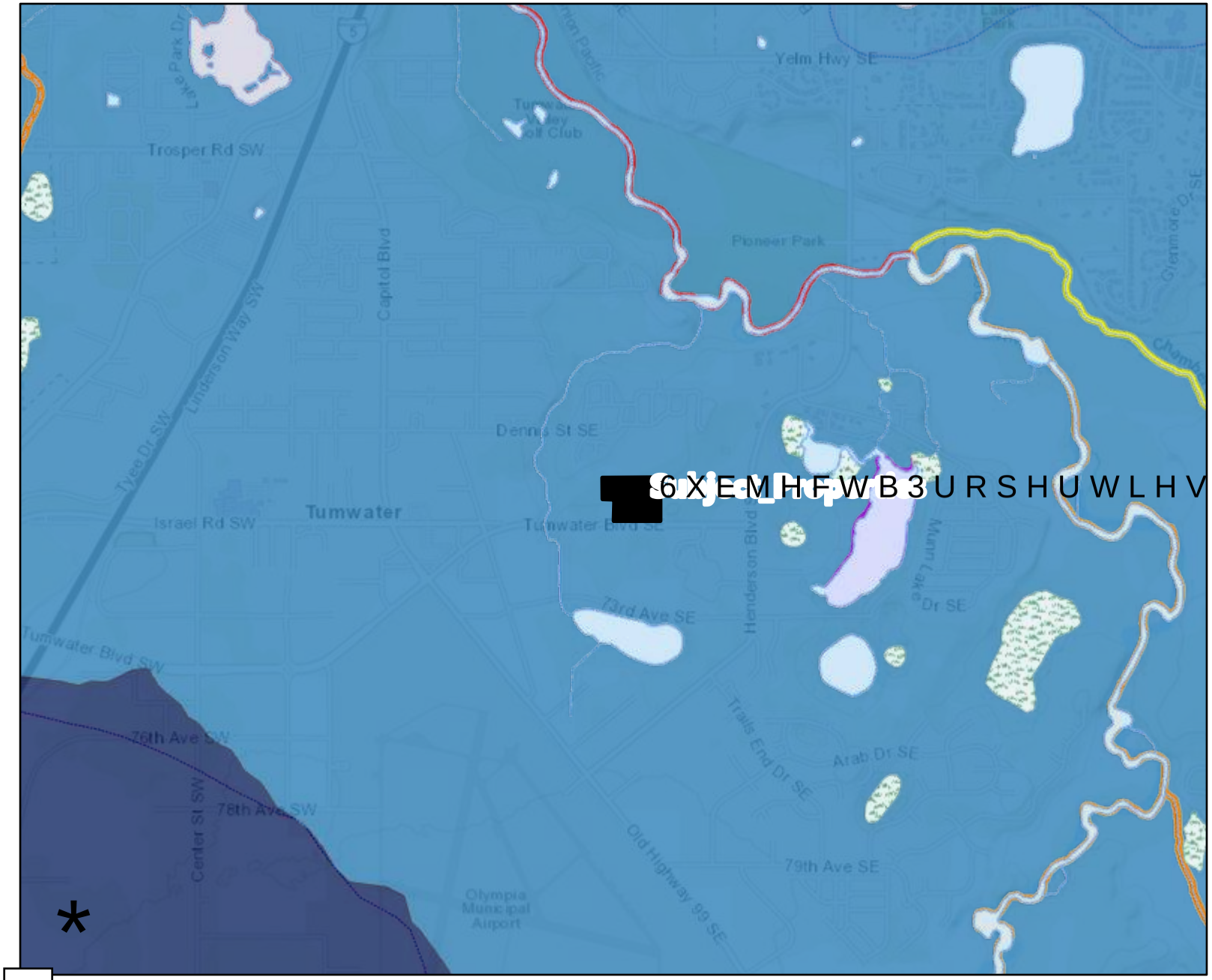

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Item 2a.

Wetland name or number B

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland B Date of site visit: 8/16/2024

Rated by Alexander Callender Trained by Ecology? X Yes ___No Date of training 12/13

HGM Class used for rating Depression Wetland has multiple HGM classes? ___Y X N

NOTE: **Form is not complete without the required figures** (figures can be combined).
Source of base aerial photo/map 2024 ESRI Aerial

OVERALL WETLAND CATEGORY ____ (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

X_____**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	5	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	X

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	Cowardin
Hydroperiods	D 1.4, H 1.2	Hydro
Location of outlet (*can be added to map of hydroperiods)*	D 1.1, D 4.1	Outlet
Boundary of area within 150 ft of the wetland *(can be added to another figure)*	D 2.2, D 5.2	150 Ft
Map of the contributing basin	D 4.3, D 5.3	303d
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	1 Km
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	303d
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	TMDL

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	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	0
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	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 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	0
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	1
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	0
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: 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	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	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	0
Total for D 5 Add the points in the boxes above	2 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 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. **1**

____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
X Forested (areas where trees have > 30% cover) — 1 structure: points = 0

If the unit has a Forested class, check if:

X 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 **0**

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
X 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 **1**

Count the number of plant species in the wetland that cover at least 10 ft^2.

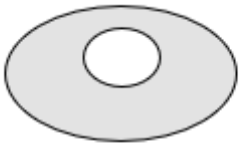
Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. **Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canada thistle**

If you counted: > 19 species — points = 2
5 - 19 species — points = 1
< 5 species — points = 0

H 1.4. Interspersion of habitats **0**

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.

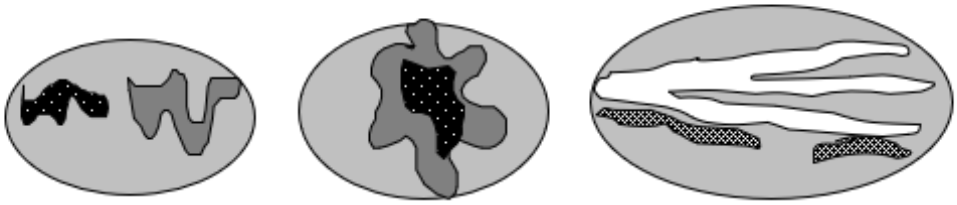
None = 0 points



Low = 1 point

Moderate = 2 points

All three diagrams in this row are **High** = 3 points



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. X Large, downed, woody debris within the wetland (> 4 in. diameter and 6 ft long). X 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) X 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	5

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 16 **+** [(% moderate and low intensity land uses)/2] 9 = 25 % 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	2
H 2.2. Total habitat in 1 km Polygon around the wetland. *Calculate:* % relatively undisturbed habitat 30 **+** [(% moderate and low intensity land uses)/2] 16.5 = 46.5 % 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	3

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**

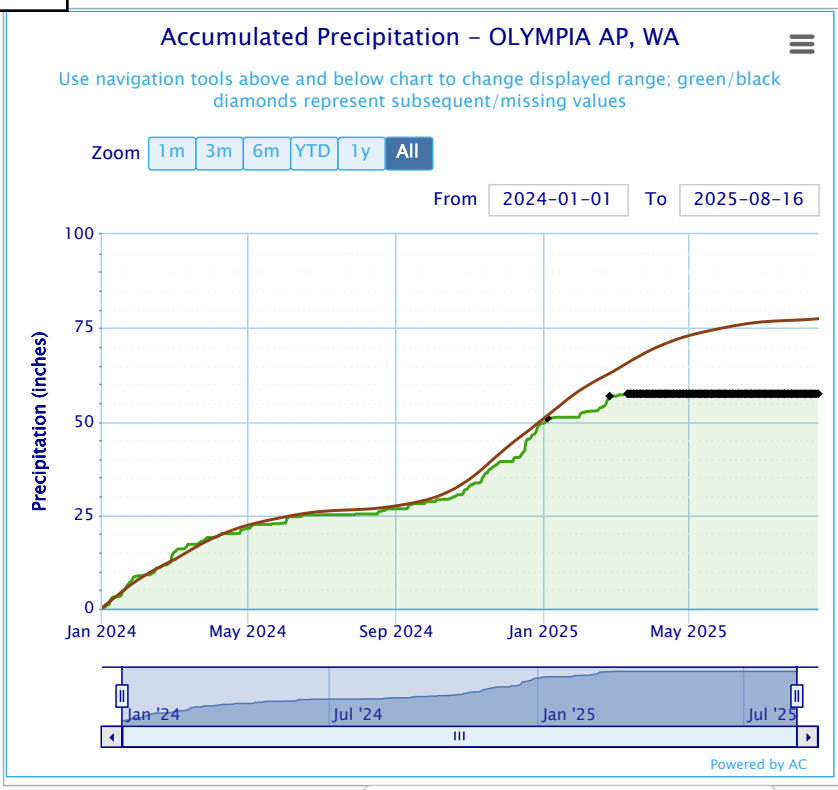
[135] https://www.dnr.wa.gov/NHPdata

[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** 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	

Appendix J - NOAA NOW DATA



Note regarding subsequent/missing values

APPENDIX 4
WWHM REPORT

JSA CIVIL

Engineering | Planning | Management

WWHM2012

PROJECT REPORT

General Model Information

WWHM2012 Project Name: Tumwater Blvd 2

Site Name:	Tumwater Townhomes
Site Address:	Tumwater Blvd
City:	Tumwater
Report Date:	5/12/2025
Gage:	Olympia Airport
Data Start:	1955/10/01
Data End:	2008/09/30
Timestep:	15 Minute
Precip Scale:	0.000 (adjusted)
Version Date:	2023/01/27
Version:	4.2.19

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year
Low Flow Threshold for POC2:	50 Percent of the 2 Year
High Flow Threshold for POC2:	50 Year
Low Flow Threshold for POC3:	50 Percent of the 2 Year
High Flow Threshold for POC3:	50 Year
Low Flow Threshold for POC4:	50 Percent of the 2 Year
High Flow Threshold for POC4:	50 Year
Low Flow Threshold for POC5:	50 Percent of the 2 Year
High Flow Threshold for POC5:	50 Year
Low Flow Threshold for POC6:	50 Percent of the 2 Year
High Flow Threshold for POC6:	50 Year

Landuse Basin Data

Predeveloped Land Use

Pre-Developed (ORANGE)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Forest, Mod	0.53
Pervious Total	0.53
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.53

Pre-Developed (BLUE)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Forest, Mod	0.18
Pervious Total	0.18
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.18

Pre-Developed (RED)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Forest, Mod	0.63
Pervious Total	0.63
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.63

Pre-Developed (PURPLE)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Forest, Mod	0.63
Pervious Total	0.63
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.63

Pre-Developed (GREEN)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Forest, Mod	0.81
Pervious Total	0.81
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.81

Pre-Developed (YELLOW)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Forest, Mod	0.41
Pervious Total	0.41
Impervious Land Use	acre
Impervious Total	0
Basin Total	0.41

Mitigated Land Use

WEST ROAD (RED)

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
A B, Pasture, Flat	0.19
Pervious Total	0.19

Impervious Land Use	acre
ROADS FLAT	0.44
Impervious Total	0.44
Basin Total	0.63

WEST ROOFS (ORANGE)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Pasture, Flat	0.26
Pervious Total	0.26
Impervious Land Use	acre
ROOF TOPS FLAT	0.27
Impervious Total	0.27
Basin Total	0.53

SOUTH ROOFS (BLUE)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
Pervious Total	0
Impervious Land Use	acre
ROOF TOPS FLAT	0.18
Impervious Total	0.18
Basin Total	0.18

SOUTH ROAD (PURPLE)

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
A B, Pasture, Flat	0.18
Pervious Total	0.18

Impervious Land Use	acre
ROADS FLAT	0.36
ROOF TOPS FLAT	0.09
Impervious Total	0.45
Basin Total	0.63

TUMWATER BLVD (YELLOW)

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
A B, Pasture, Flat	0.04
Pervious Total	0.04

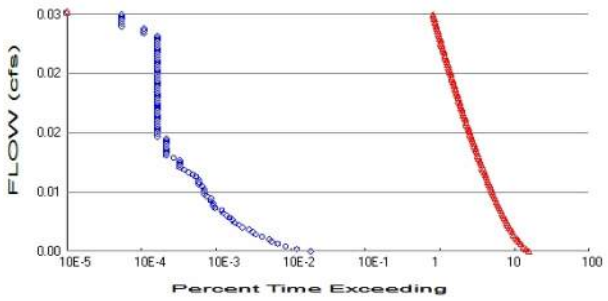
Impervious Land Use	acre
ROADS FLAT	0.37
Impervious Total	0.37
Basin Total	0.41

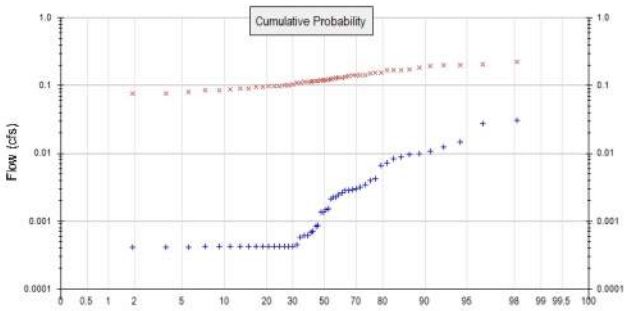
SOUTH SHEET FLOW (GREEN)

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
A B, Pasture, Flat	0.67
Pervious Total	0.67
Impervious Land Use	acre
ROADS FLAT	0.14
Impervious Total	0.14
Basin Total	0.81

Analysis Results

POC 1





\+ Predeveloped x Mitigated

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

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

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	0.001445
5 year	0.004553
10 year	0.008725
25 year	0.018155
50 year	0.029789
100 year	0.0472

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0.121632
5 year	0.154561
10 year	0.176115
25 year	0.203246
50 year	0.223459
100 year	0.243722

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1956	0.003	0.113
1957	0.000	0.167
1958	0.001	0.098
1959	0.001	0.118
1960	0.003	0.141
1961	0.008	0.111
1962	0.000	0.096
1963	0.004	0.196
1964	0.007	0.127
1965	0.002	0.110

1966	0.001	0.086
1967	0.003	0.096
1968	0.001	0.082
1969	0.000	0.085
1970	0.000	0.089
1971	0.003	0.091
1972	0.007	0.129
1973	0.000	0.087
1974	0.003	0.143
1975	0.001	0.150
1976	0.002	0.130
1977	0.000	0.172
1978	0.001	0.139
1979	0.000	0.155
1980	0.001	0.103
1981	0.003	0.156
1982	0.001	0.142
1983	0.001	0.224
1984	0.004	0.101
1985	0.000	0.099
1986	0.001	0.113
1987	0.027	0.205
1988	0.000	0.075
1989	0.000	0.118
1990	0.012	0.169
1991	0.015	0.186
1992	0.000	0.099
1993	0.000	0.077
1994	0.000	0.077
1995	0.002	0.116
1996	0.009	0.132
1997	0.010	0.119
1998	0.001	0.121
1999	0.010	0.142
2000	0.000	0.134
2001	0.000	0.102
2002	0.002	0.117
2003	0.000	0.122
2004	0.003	0.198
2005	0.000	0.114
2006	0.030	0.202
2007	0.011	0.167
2008	0.000	0.122

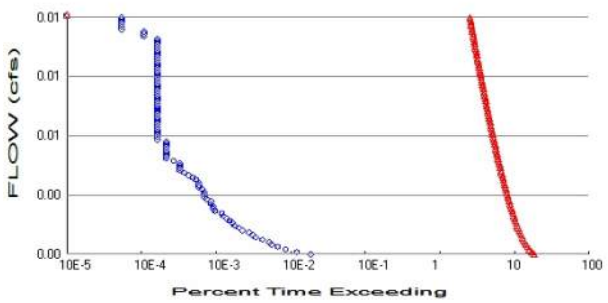
Ranked Annual Peaks

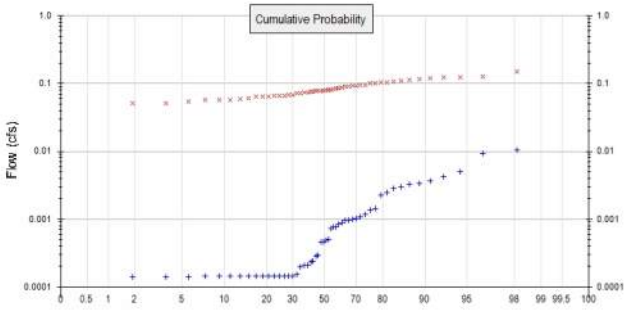
Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.0304	0.2240
2	0.0273	0.2052
3	0.0148	0.2023
4	0.0125	0.1980
5	0.0109	0.1956
6	0.0099	0.1859
7	0.0095	0.1722
8	0.0088	0.1691
9	0.0084	0.1669
10	0.0073	0.1667
11	0.0066	0.1561

12	0.0042	0.1547
13	0.0040	0.1500
14	0.0035	0.1425
15	0.0032	0.1416
16	0.0030	0.1415
17	0.0029	0.1406
18	0.0028	0.1387
19	0.0028	0.1345
20	0.0026	0.1322
21	0.0024	0.1302
22	0.0023	0.1291
23	0.0022	0.1266
24	0.0022	0.1225
25	0.0015	0.1222
26	0.0015	0.1209
27	0.0013	0.1189
28	0.0013	0.1182
29	0.0009	0.1176
30	0.0008	0.1174
31	0.0007	0.1157
32	0.0007	0.1135
33	0.0006	0.1133
34	0.0006	0.1132
35	0.0006	0.1114
36	0.0005	0.1100
37	0.0004	0.1035
38	0.0004	0.1015
39	0.0004	0.1006
40	0.0004	0.0987
41	0.0004	0.0985
42	0.0004	0.0980
43	0.0004	0.0962
44	0.0004	0.0960
45	0.0004	0.0910
46	0.0004	0.0893
47	0.0004	0.0867
48	0.0004	0.0860
49	0.0004	0.0853
50	0.0004	0.0816
51	0.0004	0.0770
52	0.0004	0.0767
53	0.0004	0.0754

POC 2





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #2
Total Pervious Area: 0.18
Total Impervious Area: 0

Mitigated Landuse Totals for POC #2
Total Pervious Area: 0
Total Impervious Area: 0.18

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	**Flow(cfs)**
2 year	0.000491
5 year	0.001546
10 year	0.002963
25 year	0.006166
50 year	0.010117
100 year	0.01603

Flow Frequency Return Periods for Mitigated. POC #2

Return Period	**Flow(cfs)**
2 year	0.080253
5 year	0.100467
10 year	0.113269
25 year	0.128968
50 year	0.140394
100 year	0.151642

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #2

Year	**Predeveloped**	**Mitigated**
1956	0.001	0.073
1957	0.000	0.110
1958	0.000	0.063
1959	0.000	0.078
1960	0.001	0.094
1961	0.003	0.074
1962	0.000	0.064
1963	0.001	0.123
1964	0.002	0.083
1965	0.001	0.071
1966	0.000	0.057

1967	0.001	0.064
1968	0.000	0.054
1969	0.000	0.057
1970	0.000	0.059
1971	0.001	0.060
1972	0.002	0.086
1973	0.000	0.058
1974	0.001	0.095
1975	0.001	0.100
1976	0.001	0.085
1977	0.000	0.115
1978	0.000	0.092
1979	0.000	0.103
1980	0.000	0.069
1981	0.001	0.101
1982	0.000	0.094
1983	0.000	0.149
1984	0.001	0.065
1985	0.000	0.066
1986	0.000	0.073
1987	0.009	0.122
1988	0.000	0.050
1989	0.000	0.079
1990	0.004	0.107
1991	0.005	0.120
1992	0.000	0.066
1993	0.000	0.051
1994	0.000	0.051
1995	0.001	0.077
1996	0.003	0.088
1997	0.003	0.079
1998	0.000	0.081
1999	0.003	0.091
2000	0.000	0.090
2001	0.000	0.068
2002	0.001	0.078
2003	0.000	0.082
2004	0.001	0.127
2005	0.000	0.076
2006	0.010	0.116
2007	0.004	0.105
2008	0.000	0.081

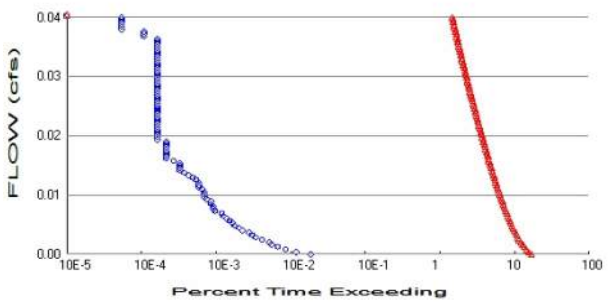
Ranked Annual Peaks

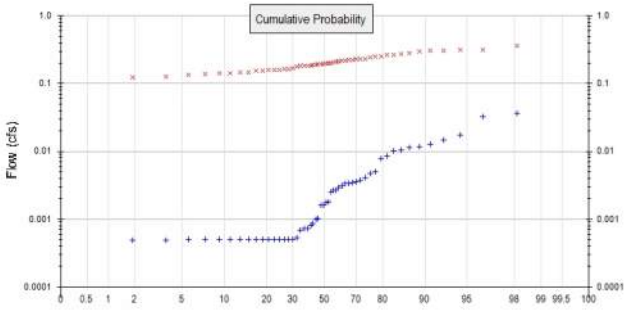
Ranked Annual Peaks for Predeveloped and Mitigated. POC #2

Rank	Predeveloped	Mitigated
1	0.0103	0.1493
2	0.0093	0.1269
3	0.0050	0.1227
4	0.0042	0.1223
5	0.0037	0.1196
6	0.0033	0.1160
7	0.0032	0.1148
8	0.0030	0.1096
9	0.0029	0.1067
10	0.0025	0.1051
11	0.0022	0.1030
12	0.0014	0.1014

13	0.0014	0.0999
14	0.0012	0.0950
15	0.0011	0.0943
16	0.0010	0.0937
17	0.0010	0.0921
18	0.0010	0.0914
19	0.0010	0.0896
20	0.0009	0.0881
21	0.0008	0.0859
22	0.0008	0.0853
23	0.0008	0.0830
24	0.0007	0.0817
25	0.0005	0.0814
26	0.0005	0.0806
27	0.0005	0.0793
28	0.0005	0.0788
29	0.0003	0.0784
30	0.0003	0.0782
31	0.0002	0.0772
32	0.0002	0.0757
33	0.0002	0.0743
34	0.0002	0.0732
35	0.0002	0.0728
36	0.0002	0.0712
37	0.0001	0.0689
38	0.0001	0.0677
39	0.0001	0.0658
40	0.0001	0.0657
41	0.0001	0.0652
42	0.0001	0.0641
43	0.0001	0.0640
44	0.0001	0.0634
45	0.0001	0.0603
46	0.0001	0.0589
47	0.0001	0.0578
48	0.0001	0.0573
49	0.0001	0.0568
50	0.0001	0.0542
51	0.0001	0.0513
52	0.0001	0.0511
53	0.0001	0.0503

POC 3





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #3
Total Pervious Area: 0.63
Total Impervious Area: 0

Mitigated Landuse Totals for POC #3
Total Pervious Area: 0.19
Total Impervious Area: 0.44

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #3

Return Period	**Flow(cfs)**
2 year	0.001718
5 year	0.005412
10 year	0.010371
25 year	0.02158
50 year	0.03541
100 year	0.056106

Flow Frequency Return Periods for Mitigated. POC #3

Return Period	**Flow(cfs)**
2 year	0.197434
5 year	0.248431
10 year	0.280851
25 year	0.320721
50 year	0.349813
100 year	0.378502

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #3

Year	**Predeveloped**	**Mitigated**
1956	0.003	0.181
1957	0.001	0.270
1958	0.001	0.157
1959	0.001	0.192
1960	0.003	0.229
1961	0.010	0.182
1962	0.000	0.157
1963	0.005	0.308
1964	0.009	0.203
1965	0.003	0.176
1966	0.001	0.140

1967	0.003	0.156
1968	0.001	0.133
1969	0.001	0.139
1970	0.001	0.145
1971	0.004	0.148
1972	0.008	0.210
1973	0.001	0.141
1974	0.004	0.232
1975	0.002	0.244
1976	0.003	0.210
1977	0.000	0.281
1978	0.002	0.226
1979	0.001	0.252
1980	0.001	0.169
1981	0.004	0.251
1982	0.002	0.231
1983	0.001	0.365
1984	0.005	0.161
1985	0.001	0.161
1986	0.002	0.181
1987	0.032	0.315
1988	0.001	0.123
1989	0.001	0.193
1990	0.015	0.267
1991	0.018	0.297
1992	0.000	0.161
1993	0.001	0.125
1994	0.000	0.125
1995	0.003	0.189
1996	0.010	0.215
1997	0.011	0.194
1998	0.001	0.197
1999	0.012	0.224
2000	0.001	0.219
2001	0.001	0.165
2002	0.003	0.191
2003	0.001	0.200
2004	0.003	0.316
2005	0.001	0.185
2006	0.036	0.304
2007	0.013	0.264
2008	0.001	0.199

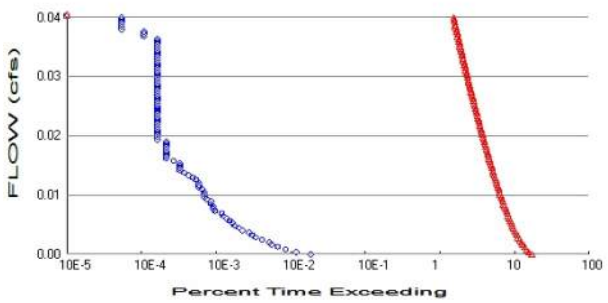
Ranked Annual Peaks

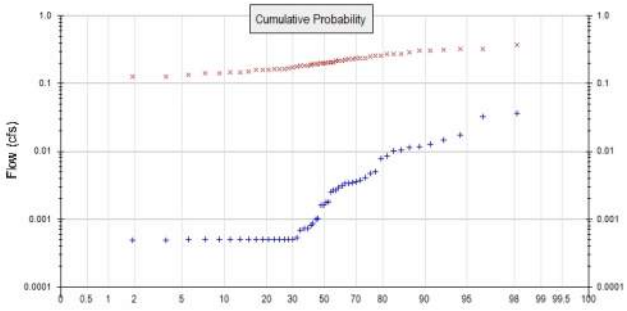
Ranked Annual Peaks for Predeveloped and Mitigated. POC #3

Rank	Predeveloped	Mitigated
1	0.0362	0.3650
2	0.0325	0.3158
3	0.0175	0.3148
4	0.0148	0.3083
5	0.0129	0.3043
6	0.0117	0.2971
7	0.0113	0.2806
8	0.0104	0.2696
9	0.0100	0.2669
10	0.0087	0.2637
11	0.0078	0.2519
12	0.0050	0.2508

13	0.0047	0.2444
14	0.0041	0.2323
15	0.0038	0.2306
16	0.0036	0.2291
17	0.0034	0.2255
18	0.0034	0.2237
19	0.0034	0.2191
20	0.0031	0.2154
21	0.0029	0.2102
22	0.0027	0.2101
23	0.0027	0.2030
24	0.0026	0.1996
25	0.0018	0.1990
26	0.0017	0.1970
27	0.0016	0.1938
28	0.0016	0.1926
29	0.0010	0.1917
30	0.0010	0.1912
31	0.0008	0.1886
32	0.0008	0.1849
33	0.0007	0.1816
34	0.0007	0.1815
35	0.0007	0.1809
36	0.0005	0.1764
37	0.0005	0.1685
38	0.0005	0.1655
39	0.0005	0.1614
40	0.0005	0.1609
41	0.0005	0.1606
42	0.0005	0.1571
43	0.0005	0.1568
44	0.0005	0.1565
45	0.0005	0.1479
46	0.0005	0.1447
47	0.0005	0.1413
48	0.0005	0.1401
49	0.0005	0.1389
50	0.0005	0.1327
51	0.0005	0.1255
52	0.0005	0.1250
53	0.0005	0.1229

POC 4





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #4
Total Pervious Area: 0.63
Total Impervious Area: 0

Mitigated Landuse Totals for POC #4
Total Pervious Area: 0.18
Total Impervious Area: 0.45

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #4

Return Period	**Flow(cfs)**
2 year	0.001718
5 year	0.005412
10 year	0.010371
25 year	0.02158
50 year	0.03541
100 year	0.056106

Flow Frequency Return Periods for Mitigated. POC #4

Return Period	**Flow(cfs)**
2 year	0.201823
5 year	0.253854
10 year	0.286922
25 year	0.32758
50 year	0.35724
100 year	0.386486

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #4

Year	**Predeveloped**	**Mitigated**
1956	0.003	0.185
1957	0.001	0.276
1958	0.001	0.161
1959	0.001	0.196
1960	0.003	0.234
1961	0.010	0.186
1962	0.000	0.160
1963	0.005	0.315
1964	0.009	0.208
1965	0.003	0.180
1966	0.001	0.143

1967	0.003	0.160
1968	0.001	0.136
1969	0.001	0.142
1970	0.001	0.148
1971	0.004	0.151
1972	0.008	0.215
1973	0.001	0.145
1974	0.004	0.238
1975	0.002	0.250
1976	0.003	0.215
1977	0.000	0.287
1978	0.002	0.231
1979	0.001	0.258
1980	0.001	0.172
1981	0.004	0.256
1982	0.002	0.236
1983	0.001	0.373
1984	0.005	0.165
1985	0.001	0.164
1986	0.002	0.185
1987	0.032	0.321
1988	0.001	0.126
1989	0.001	0.197
1990	0.015	0.272
1991	0.018	0.304
1992	0.000	0.165
1993	0.001	0.128
1994	0.000	0.128
1995	0.003	0.193
1996	0.010	0.220
1997	0.011	0.198
1998	0.001	0.201
1999	0.012	0.228
2000	0.001	0.224
2001	0.001	0.169
2002	0.003	0.196
2003	0.001	0.204
2004	0.003	0.323
2005	0.001	0.189
2006	0.036	0.310
2007	0.013	0.269
2008	0.001	0.204

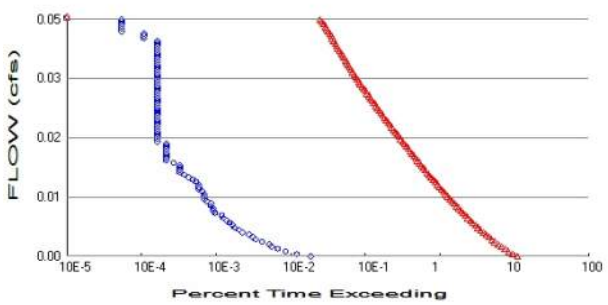
Ranked Annual Peaks

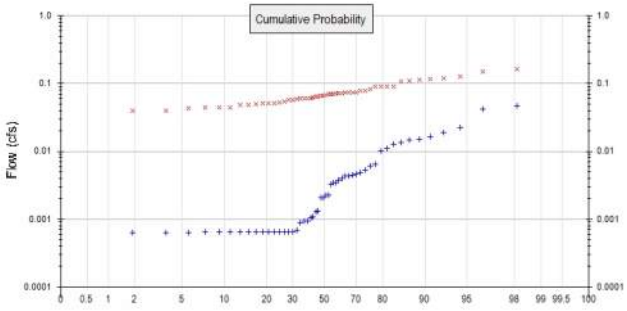
Ranked Annual Peaks for Predeveloped and Mitigated. POC #4

Rank	Predeveloped	Mitigated
1	0.0362	0.3733
2	0.0325	0.3225
3	0.0175	0.3208
4	0.0148	0.3147
5	0.0129	0.3096
6	0.0117	0.3035
7	0.0113	0.2870
8	0.0104	0.2756
9	0.0100	0.2725
10	0.0087	0.2692
11	0.0078	0.2576
12	0.0050	0.2562

13	0.0047	0.2499
14	0.0041	0.2376
15	0.0038	0.2358
16	0.0036	0.2343
17	0.0034	0.2306
18	0.0034	0.2285
19	0.0034	0.2241
20	0.0031	0.2203
21	0.0029	0.2149
22	0.0027	0.2148
23	0.0027	0.2076
24	0.0026	0.2041
25	0.0018	0.2035
26	0.0017	0.2014
27	0.0016	0.1982
28	0.0016	0.1970
29	0.0010	0.1960
30	0.0010	0.1955
31	0.0008	0.1929
32	0.0008	0.1892
33	0.0007	0.1857
34	0.0007	0.1854
35	0.0007	0.1848
36	0.0005	0.1802
37	0.0005	0.1724
38	0.0005	0.1692
39	0.0005	0.1650
40	0.0005	0.1645
41	0.0005	0.1642
42	0.0005	0.1605
43	0.0005	0.1603
44	0.0005	0.1600
45	0.0005	0.1512
46	0.0005	0.1480
47	0.0005	0.1445
48	0.0005	0.1433
49	0.0005	0.1420
50	0.0005	0.1357
51	0.0005	0.1283
52	0.0005	0.1278
53	0.0005	0.1257

POC 5





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #5
Total Pervious Area: 0.81
Total Impervious Area: 0

Mitigated Landuse Totals for POC #5
Total Pervious Area: 0.67
Total Impervious Area: 0.14

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #5

Return Period	Flow(cfs)
2 year	0.002208
5 year	0.006958
10 year	0.013334
25 year	0.027746
50 year	0.045527
100 year	0.072136

Flow Frequency Return Periods for Mitigated. POC #5

Return Period	Flow(cfs)
2 year	0.066652
5 year	0.089808
10 year	0.106342
25 year	0.128643
50 year	0.146307
100 year	0.164892

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #5

Year	Predeveloped	Mitigated
1956	0.004	0.066
1957	0.001	0.091
1958	0.001	0.057
1959	0.001	0.061
1960	0.004	0.073
1961	0.013	0.069
1962	0.001	0.050
1963	0.006	0.125
1964	0.011	0.078
1965	0.004	0.072
1966	0.001	0.045

1967	0.004	0.052
1968	0.001	0.043
1969	0.001	0.044
1970	0.001	0.048
1971	0.005	0.048
1972	0.010	0.069
1973	0.001	0.045
1974	0.005	0.074
1975	0.002	0.078
1976	0.003	0.072
1977	0.001	0.089
1978	0.002	0.073
1979	0.001	0.082
1980	0.001	0.054
1981	0.005	0.089
1982	0.002	0.073
1983	0.001	0.116
1984	0.006	0.058
1985	0.001	0.051
1986	0.002	0.067
1987	0.042	0.151
1988	0.001	0.039
1989	0.001	0.061
1990	0.019	0.114
1991	0.023	0.110
1992	0.001	0.051
1993	0.001	0.040
1994	0.001	0.040
1995	0.003	0.060
1996	0.013	0.071
1997	0.015	0.074
1998	0.001	0.063
1999	0.015	0.090
2000	0.001	0.070
2001	0.001	0.053
2002	0.003	0.061
2003	0.001	0.064
2004	0.004	0.118
2005	0.001	0.059
2006	0.046	0.163
2007	0.017	0.106
2008	0.001	0.064

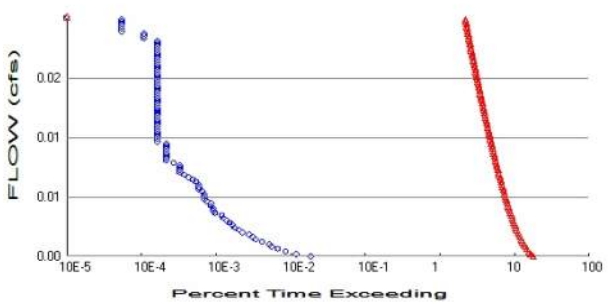
Ranked Annual Peaks

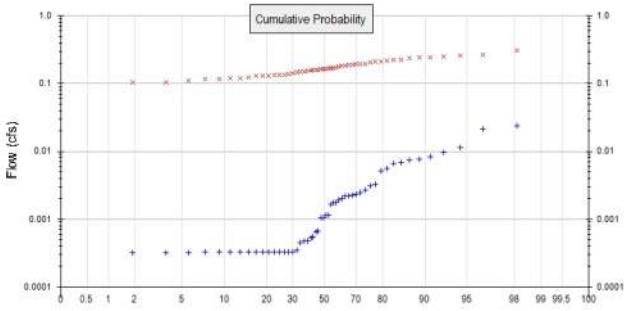
Ranked Annual Peaks for Predeveloped and Mitigated. POC #5

Rank	Predeveloped	Mitigated
1	0.0465	0.1629
2	0.0418	0.1513
3	0.0226	0.1252
4	0.0190	0.1184
5	0.0166	0.1162
6	0.0151	0.1138
7	0.0146	0.1096
8	0.0134	0.1055
9	0.0129	0.0913
10	0.0111	0.0898
11	0.0101	0.0894
12	0.0064	0.0890

13	0.0061	0.0823
14	0.0053	0.0785
15	0.0049	0.0781
16	0.0046	0.0741
17	0.0044	0.0739
18	0.0043	0.0734
19	0.0043	0.0731
20	0.0039	0.0729
21	0.0037	0.0723
22	0.0035	0.0718
23	0.0034	0.0707
24	0.0033	0.0697
25	0.0023	0.0692
26	0.0022	0.0688
27	0.0021	0.0668
28	0.0021	0.0659
29	0.0013	0.0637
30	0.0013	0.0635
31	0.0011	0.0628
32	0.0010	0.0613
33	0.0009	0.0611
34	0.0009	0.0610
35	0.0009	0.0600
36	0.0007	0.0589
37	0.0007	0.0579
38	0.0007	0.0566
39	0.0007	0.0539
40	0.0007	0.0527
41	0.0007	0.0518
42	0.0006	0.0512
43	0.0006	0.0511
44	0.0006	0.0499
45	0.0006	0.0483
46	0.0006	0.0483
47	0.0006	0.0450
48	0.0006	0.0446
49	0.0006	0.0444
50	0.0006	0.0429
51	0.0006	0.0400
52	0.0006	0.0398
53	0.0006	0.0391

POC 6





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #6
Total Pervious Area: 0.41
Total Impervious Area: 0

Mitigated Landuse Totals for POC #6
Total Pervious Area: 0.04
Total Impervious Area: 0.37

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #6

Return Period	Flow(cfs)
2 year	0.001118
5 year	0.003522
10 year	0.00675
25 year	0.014044
50 year	0.023044
100 year	0.036513

Flow Frequency Return Periods for Mitigated. POC #6

Return Period	Flow(cfs)
2 year	0.165232
5 year	0.207111
10 year	0.233658
25 year	0.266235
50 year	0.289962
100 year	0.313328

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #6

Year	Predeveloped	Mitigated
1956	0.002	0.151
1957	0.000	0.226
1958	0.001	0.131
1959	0.001	0.161
1960	0.002	0.193
1961	0.007	0.153
1962	0.000	0.132
1963	0.003	0.254
1964	0.006	0.171
1965	0.002	0.147
1966	0.001	0.118

1967	0.002	0.132
1968	0.000	0.111
1969	0.000	0.117
1970	0.000	0.121
1971	0.002	0.124
1972	0.005	0.177
1973	0.000	0.119
1974	0.003	0.195
1975	0.001	0.205
1976	0.002	0.176
1977	0.000	0.236
1978	0.001	0.189
1979	0.000	0.212
1980	0.001	0.142
1981	0.002	0.209
1982	0.001	0.194
1983	0.000	0.307
1984	0.003	0.134
1985	0.000	0.135
1986	0.001	0.150
1987	0.021	0.255
1988	0.000	0.103
1989	0.000	0.162
1990	0.010	0.221
1991	0.011	0.247
1992	0.000	0.135
1993	0.000	0.105
1994	0.000	0.105
1995	0.002	0.159
1996	0.007	0.181
1997	0.007	0.163
1998	0.000	0.166
1999	0.008	0.188
2000	0.000	0.184
2001	0.000	0.139
2002	0.002	0.161
2003	0.000	0.168
2004	0.002	0.262
2005	0.000	0.156
2006	0.024	0.243
2007	0.008	0.217
2008	0.000	0.167

Ranked Annual Peaks

Ranked Annual Peaks for Predeveloped and Mitigated. POC #6

Rank	Predeveloped	Mitigated
1	0.0235	0.3069
2	0.0211	0.2620
3	0.0114	0.2547
4	0.0096	0.2539
5	0.0084	0.2469
6	0.0076	0.2429
7	0.0074	0.2360
8	0.0068	0.2256
9	0.0065	0.2206
10	0.0056	0.2175
11	0.0051	0.2118
12	0.0033	0.2090

13	0.0031	0.2054
14	0.0027	0.1953
15	0.0025	0.1939
16	0.0023	0.1926
17	0.0022	0.1894
18	0.0022	0.1879
19	0.0022	0.1843
20	0.0020	0.1811
21	0.0019	0.1767
22	0.0018	0.1756
23	0.0017	0.1707
24	0.0017	0.1678
25	0.0012	0.1673
26	0.0011	0.1656
27	0.0010	0.1629
28	0.0010	0.1620
29	0.0007	0.1612
30	0.0006	0.1607
31	0.0006	0.1586
32	0.0005	0.1555
33	0.0005	0.1527
34	0.0005	0.1510
35	0.0004	0.1503
36	0.0004	0.1468
37	0.0003	0.1417
38	0.0003	0.1392
39	0.0003	0.1353
40	0.0003	0.1350
41	0.0003	0.1345
42	0.0003	0.1318
43	0.0003	0.1316
44	0.0003	0.1308
45	0.0003	0.1241
46	0.0003	0.1213
47	0.0003	0.1188
48	0.0003	0.1178
49	0.0003	0.1167
50	0.0003	0.1115
51	0.0003	0.1055
52	0.0003	0.1051
53	0.0003	0.1033

Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

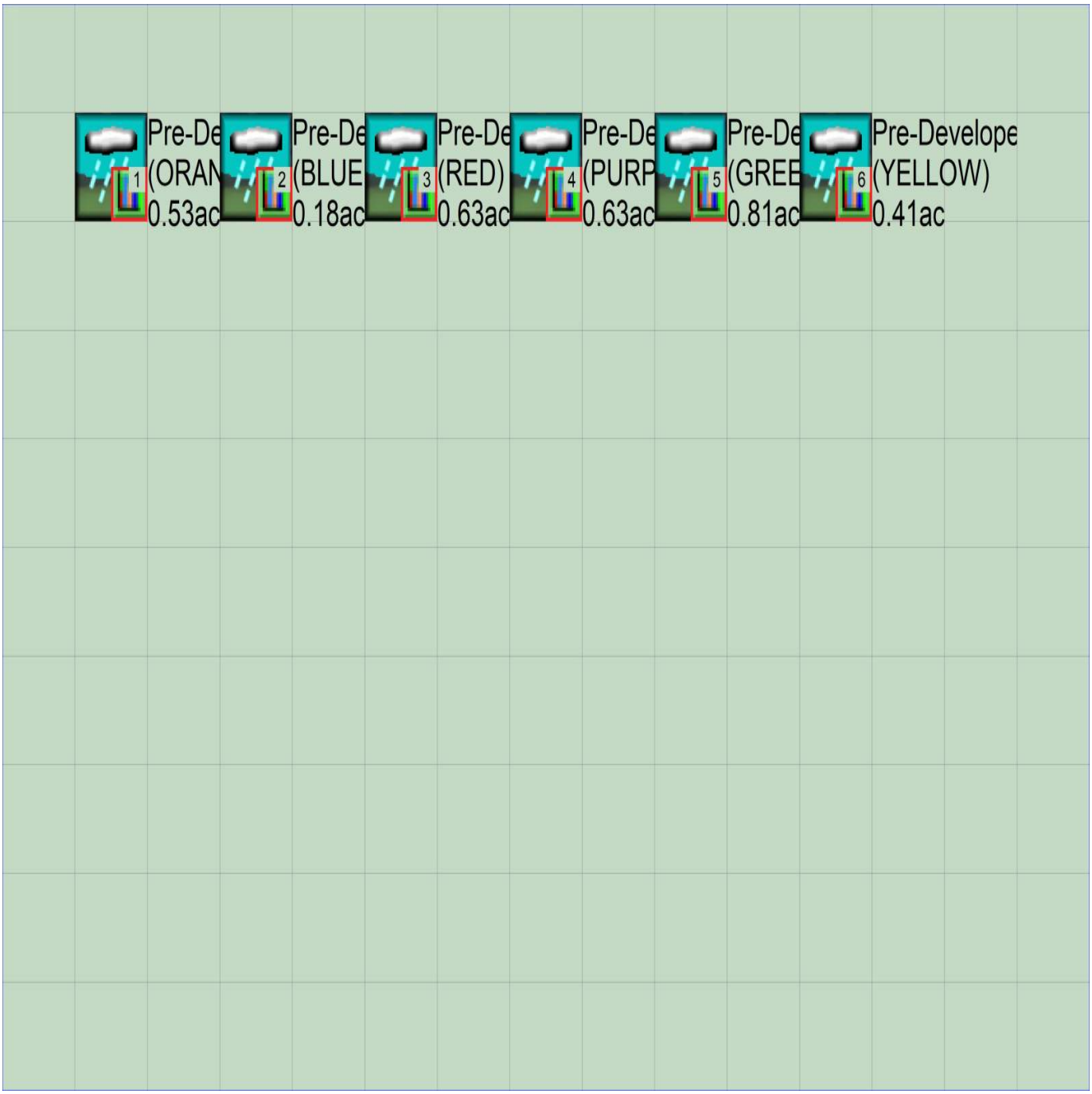
No PERLND changes have been made.

IMPLND Changes

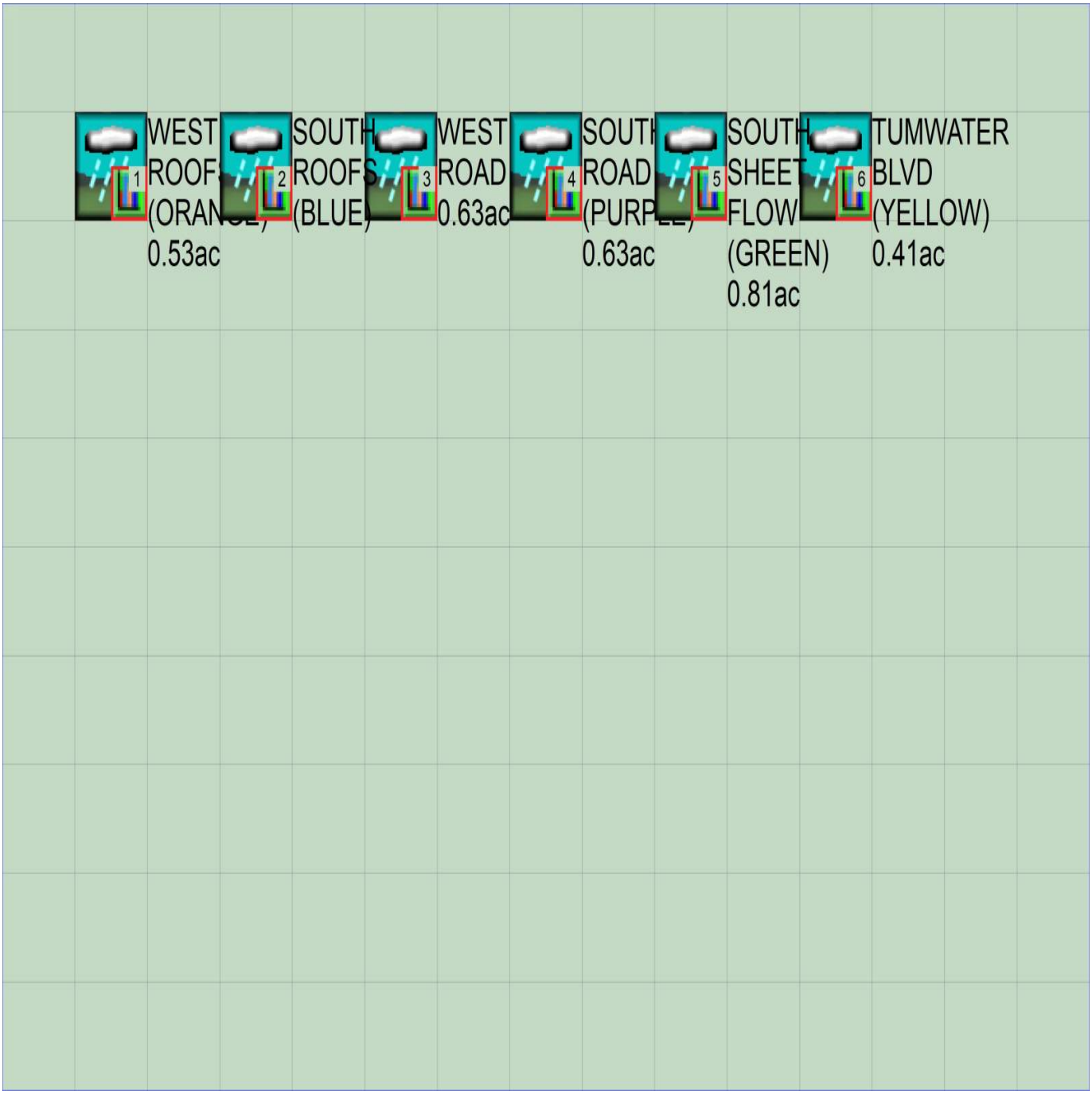
No IMPLND changes have been made.

Appendix

Predeveloped Schematic



Mitigated Schematic



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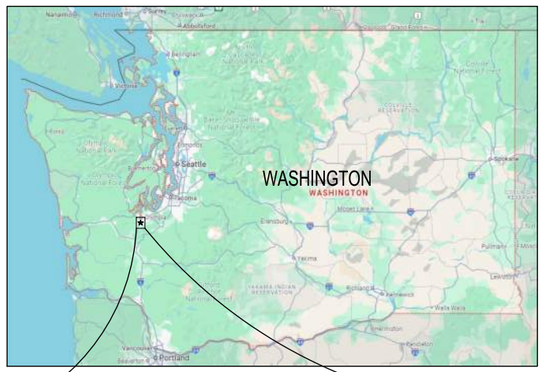
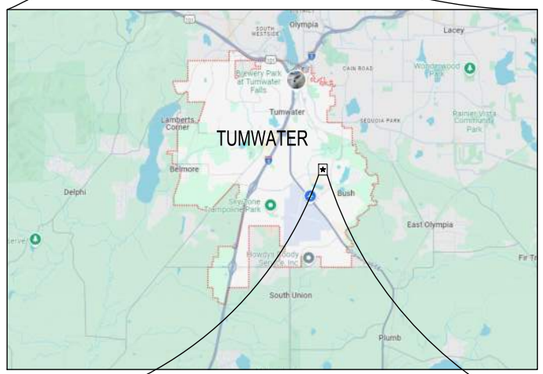
APPENDIX 5
ENGINEERING PLANS

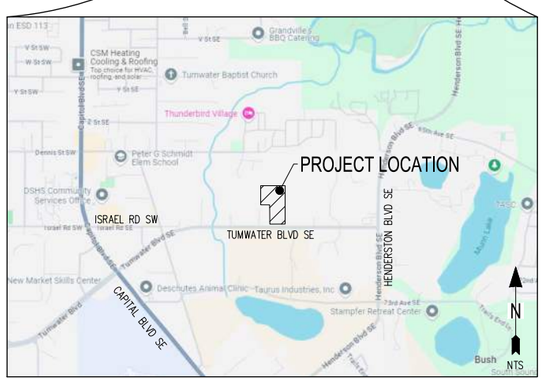
JSA CIVIL

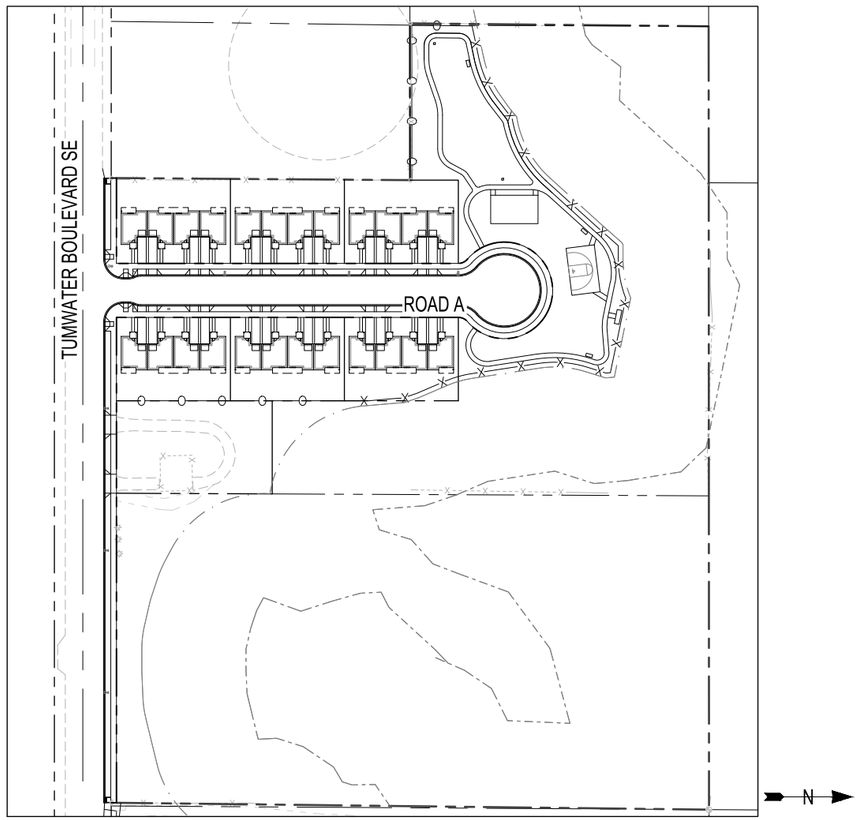
Engineering | Planning | Management

TUMWATER BOULEVARD TOWNHOME CONDOMINIUMS
SITE PLAN REVIEW
TUMWATER, WASHINGTON









OVERALL SITE PLAN
1" = 80'

APPLICANT
TENINO LAND COMPANY, LLC
17348 MARSH RD SW
TENINO, WA 98589
PHONE: 360.264.1360
CONTACT: TODD HANSEN

ENGINEER
JSA CIVIL, LLC
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501
PHONE: 360.515.9600
CONTACT: WHITNEY DUNLAP, PE

ARCHITECT
NORTHWEST HOME DESIGNING, INC.
P.O. BOX 88103
STEILACOOM, WA 98388
PHONE: 253.584.6309

LANDSCAPE ARCHITECT
SCJ ALLIANCE
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LACEY, WAS 98516
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GEOTECHNICAL
INSIGHT GEOLOGIC, INC
1015 4TH AVENUE E
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PHONE: 360.754.2128
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SURVEYOR
MTN2COAST, LLC
2320 MOTTMAN RD SW, SUITE 106
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PHONE: 360.688.1949
CONTACT: SETH PRIGGE

GOVERNING AGENCY
CITY OF TUMWATER
PHONE: 360.754.5855

UTILITIES
SEWER/WATER
CITY OF TUMWATER
PHONE: 360.754.4140

POWER/GAS
PUGET SOUND ENERGY
PHONE: 888.225.5773

CABLE/PHONE
COMCAST
PHONE: 800.934.6489
CENTURYLINK
PHONE: 886.963.6665

REFUSE
LEMAY PACIFIC DISPOSAL
PHONES: 360.923.0111

SITE INFORMATION
ADDRESS: 715 DENNIS ST SE
934 TUMWATER BLVD SE
PARCEL: 79300001100 & 79300001200
ACRES: ±10.77
ZONING: SINGLE FAMILY MEDIUM DENSITY RESIDENTIAL (SFM & SFM2) WITH AIRPORT OVERLAY

LEGAL DESCRIPTION
SEE ALTA/NSPS LAND TITLE SURVEY

HORIZONTAL DATUM
HELD CENTER OF SECTION (TC POINT 6475) POSITION AS BASE POINT FOR THURSTON COUNTY DATUM. SCALED GPS OBSERVATIONS ABOUT THIS POINT FOR GROUND SCALE. CSF FOR PROJECT IS 0.999935457. PROJECT IS ON GROUND SCALE AND WSPC, S2, NAD 83/91.

VERTICAL DATUM
VERTICAL DATUM IS NGVD 29 BASED ON TIES TO THURSTON COUNTY MONUMENTS OLY–AIR ELEV 189.20 AND NGS–Q–531 ELEV 186.51.

TOWNSHIP, RANGE, AND SECTION
A PORTION OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 2, TOWNSHIP 17 NORTH, RANGE 2 WEST, WILLAMETTE MERIDIAN

SHEET INDEX

SHEET	TITLE
CV–01	COVER SHEET
SV–01	ALTA/NSPS LAND TITLE SURVEY
SV–02	ALTA/NSPS LAND TITLE SURVEY
SV–03	ALTA/NSPS LAND TITLE SURVEY
PL–01	PRELIMINARY PLAT MAP
SP–01	PRELIMINARY SITE PLAN
XS–01	PRELIMINARY ROAD SECTIONS
CG–01	PRELIMINARY GRADING PLAN
SD–01	PRELIMINARY STORMWATER PLAN
WT–01	PRELIMINARY WATER PLAN
SS–01	PRELIMINARY SEWER PLAN
FR–01	PRELIMINARY FRONTAGE IMPROVEMENTS
FR–02	PRELIMINARY FRONTAGE GRADING & STORM
LS–01	OVERALL LANDSCAPE PLAN
LS–02	SOUTH LANDSCAPE PLAN
LS–03	NORTH LANDSCAPE PLAN
LS–04	LANDSCAPE DETAILS
IR–01	OVERALL IRRIGATION PLAN
IR–02	SOUTH IRRIGATION PLAN
IR–03	NORTH IRRIGATION PLAN
IR–04	IRRIGATION DETAILS
IR–05	IRRIGATION DETAILS

GEOTECHNICAL & WABO INSPECTION NOTE:
THE CITY OF TUMWATER REQUIRES THAT THE FIRM PROVIDING THE SOILS REPORT, INSIGHT GEOLOGIC, CONDUCT THE SITE INSPECTIONS AS DEFINED IN THE REPORT. THE CITY ALSO REQUIRES THAT IN ADDITION TO THE SOILS ENGINEERING FIRM, A WABO REGISTERED SPECIAL INSPECTOR WITH EXPERIENCE WITH SOIL GRADING BE EMPLOYED, BY THE OWNER, TO CONDUCT COMPACTION TESTING FOR THE BUILDING PADS AND THE REQUIRED FIRE LANES. THE SPECIAL INSPECTOR SHALL NOT BE THE GEOTECHNICAL FIRM, THE CIVIL ENGINEER OF RECORD OR AN EMPLOYEE OF THE CONTRACTOR. ALL GRADING WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE SOILS REPORT PREPARED BY INSIGHT GEOLOGIC. COMPACTION TESTING OF THE SOILS UNDER THE FIRE LANES AND THE BUILDING FOUNDATIONS AND UTILITY TRENCHES SHALL BE VERIFIED BY INSIGHT GEOLOGIC AND THE WABO SPECIAL INSPECTOR.

INADVERTENT DISCOVERY NOTE:
WHEN AN UNANTICIPATED DISCOVERY OF PROTECTED CULTURAL MATERIAL (E.G., BONES, SHELLS, STONE TOOLS, BEADS, CERAMICS, OLD BOTTLES, HEARTHS, ETC.) OR HUMAN REMAINS ARE DISCOVERED, THE PROPERTY OWNER OR CONTRACTOR WILL IMMEDIATELY STOP ALL WORK, COMPLETELY SECURE THE LOCATION, AND CONTACT THE WASHINGTON STATE DEPARTMENT OF ARCHAEOLOGY AND HISTORIC PRESERVATION AND OTHER CONTACTS AS IDENTIFIED IN THE CITY OF TUMWATER STANDARD INADVERTENT ARCHAEOLOGICAL AND HISTORIC RESOURCES DISCOVERY PLAN. THE INDIVIDUAL OR REPRESENTATIVE WHOM THE PERMIT WAS ISSUED TO MUST SEND WRITTEN NOTIFICATION OF THE INADVERTENT DISCOVERY TO THE CITY OF TUMWATER DEPARTMENT OF COMMUNITY DEVELOPMENT.

SURVEY MONUMENT NOTE
THE PROFESSIONAL LAND SURVEYOR RESPONSIBLE FOR THE SURVEYING OF THE PROJECT MUST OBTAIN A PERMIT FROM DNR BEFORE ANY MONUMENTS ARE DISTURBED.

DEWATERING NOTE
THE CONTRACTOR SHALL UTILIZE APPROPRIATE DEWATERING SYSTEMS AND TECHNIQUES TO MAINTAIN THE EXCAVATED AREA SUFFICIENTLY DRY FROM GROUNDWATER AND/OR SURFACE RUNOFF SO AS NOT TO ADVERSELY AFFECT CONSTRUCTION PROCEDURES OR CAUSE EXCESSIVE DISTURBANCE OF UNDERLYING NATURAL GROUND. THE CONTRACTOR SHALL REPAIR ANY DAMAGE RESULTING FROM THE FAILURE OF THE DEWATERING OPERATIONS OR FROM A FAILURE TO MAINTAIN ALL THE AREAS OF WORK IN A SUITABLE DRY CONDITION. UNLESS OTHERWISE SPECIFIED, CONTINUE DEWATERING UNINTERRUPTED UNTIL THE STRUCTURES, PIPES, AND APPURTENANCES TO BE BUILT HAVE BEEN PROPERLY INSTALLED, BACKFILLED, AND COMPACTED. WHERE SUBGRADE MATERIALS ARE UNABLE TO MEET THE SUBGRADE DENSITY REQUIREMENTS DUE TO IMPROPER DEWATERING TECHNIQUES, REMOVE AND REPLACE THE MATERIALS AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL NOTE
THE CONTRACTOR SHALL PROVIDE ALL FLAGGERS, SIGNS, AND OTHER TRAFFIC CONTROL DEVICES AS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL CONSTRUCTION SIGNS, WARNING SIGNS, DETOUR SIGNS, AND OTHER TRAFFIC CONTROL DEVICES NECESSARY TO WARN AND PROTECT THE PUBLIC AT ALL TIMES FROM INJURY OR DAMAGE AS A RESULT OF THE CONTRACTOR'S OPERATIONS THAT MAY OCCUR IN HIGHWAYS, ROADS, OR STREETS. NO WORK SHALL BE DONE ON OR ADJACENT TO THE ROADWAY UNTIL ALL NECESSARY SIGNS AND TRAFFIC CONTROL DEVICES ARE IN–PLACE. THE CONTRACTOR SHALL NOT CLOSE DOWN THROUGH TRAFFIC ON CITY/COUNTY/STATE ROADS. ACCESS FOR BOTH VEHICULAR AND PEDESTRIAN TRAFFIC SHALL BE MAINTAINED AT ALL TIMES, EXCEPT WHERE THE CONTRACTOR OBTAINS PERMISSION TO TEMPORARILY CLOSE A SIDEWALK. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO CITY OF TUMWATER FOR REVIEW AND APPROVAL PRIOR TO STARTING ANY WORK IN THE RIGHT–OF–WAY.

CALL BEFORE YOU DIG
THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 811 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

VERTICAL DATUM
NGVD 29

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES
–
OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501

STAMP
WHITNEY E. DUNLAP
STATE OF WASHINGTON
PROFESSIONAL ENGINEER
5/16/2025

TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
COVER SHEET

SHEET
CV–01

5/15/2025 11:58:43am – User: WhitneyDunlap
J:\2 – PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD – MULTIFAMILY\CAD\100.006 CV–01.DWG

ALTA/NSPS LAND TITLE SURVEY
A PORTION OF THE NORTH HALF OF THE SOUTHEAST QUARTER OF SECTION 2, TOWNSHIP 17 NORTH, RANGE 2 WEST, WILLAMETTE MERIDIAN

LEGEND (UTILITIES)

- CABLE MARKER POST
- CABLE RISER/ PEDESTAL
- CABLE VAULT/MANHOLE
- CULVERT
- LUMINAIRE WITH ARM
- LUMINAIRE
- LANDSCAPE/YARD LIGHT
- NATURAL GAS MARKER POST
- NATURAL GAS METER
- PROPANE TANK
- NATURAL GAS VALVE
- POWER CONDUIT
- GUY ANCHOR
- GUY POLE
- POWER JUNCTION BOX
- POWER MARKER POST
- POWER METER
- POWER POLE
- PP WITH DROP LINE
- PP WITH DROP AND LIGHT
- PP WITH DROP, LIGHT AND TRANSFORMER
- PP WITH DROP AND TRANSFORMER
- PP WITH LIGHT AND TRANSFORMER
- PP WITH LIGHT
- PP WITH TRANSFORMER
- POWER TRANSFORMER
- POWER VAULT/ MANHOLE
- SIGNAL POLE ARM
- SS CLEANOUT
- SS MANHOLE
- SS MARKER POST
- SEPTIC TANK
- STORM CATCH BASIN
- STORM MANHOLE
- STORM CLEANOUT
- STORM ROOF DRAIN
- STORM YARD DRAIN
- STORM MARKER POST
- TELEPHONE CABINET
- TELEPHONE JUNCTION BOX
- TELEPHONE RISER
- TELEPHONE MARKER POST
- TELEPHONE POLE
- TELEPHONE VAULT/MANHOLE
- WATER AIR RELEASE VALVE
- WATER BLOW OFF
- FIRE DEPARTMENT CONNECTION
- HOSE BIB
- IRRIGATION CONTROL VALVE
- WATER MARKER POST
- WATER METER
- WATER POST INDICATOR VALVE
- SPRINKLER HEAD
- WATER VALVE
- WATER FIRE HYDRANT
- WATER VAULT/MANHOLE
- WELL

LEGEND (SURFACE FEATURES)

- DECIDUOUS TREE
- CONIFER TREE
- MAPLE TREE
- DOUGLAS-FIR TREE
- STUMP
- SHRUB
- BIKE RACK
- MAIL BOX
- WHEEL STOP
- STREET SIGN (AS DESCRIBED)
- ALUMINUM CAP
- AERIAL PANEL
- BRASS CAP
- CONCRETE MONUMENT
- HUB AND TACK
- IRON PIPE
- LEAD AND TACK
- MAG NAIL
- MONUMENT IN CASE
- PK NAIL
- REBAR AND CAP
- SCRIBE
- STONE

HATCHING

- GRAVEL
- ASPHALT
- CONCRETE

LINE TYPES

- WOOD FENCE
- CHAIN LINK FENCE
- WIRE FENCE
- TOE — GROUND TOE
- TOP — GROUND TOP
- BRK — GROUND BREAK
- D — STORM LINE
- S — SANITARY SEWER LINE
- T — BURIED TELEPHONE
- OT — OVERHEAD TELEPHONE
- P — BURIED POWER
- OP — OVERHEAD POWER
- W — WATER LINE
- IR — IRRIGATION LINE
- RW — RECLAIMED WATER
- G — NATURAL GAS LINE
- C — BURIED CABLE TV LINE
- FO — BURIED FIBER OPTIC LINE
- FM — SANITARY FORCED MAIN
- WETLAND LINE
- RL — RACK LINE
- DITCH LINE
- MAJOR CONTOUR
- MINOR CONTOUR

(X) SCHEDULE B TITLE EXCEPTIONS

10. PUBLIC AND/OR PRIVATE EASEMENTS, IF ANY, IN EXISTENCE, OVER, UNDER, ALONG AND ACROSS THAT PORTION OF THE REAL ESTATE UNDER SEARCH LYING WITHIN VACATED STREET OR ALLEYWAY.
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 SHORT SUBDIVISION NO. SS-1856:
    RECORDING NO: 8306200008
12. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: PUGET SOUND POWER & LIGHT COMPANY
    PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION LINE
    RECORDING DATE: OCTOBER 23, 1984
    RECORDING NO.: 8410230052
    AFFECTS: PORTION OF LOT 1 OF SS-1856
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, MARITALSTATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, OR SOURCE OF INCOME, AS SET FORTH IN APPLICABLE STATE OR FEDERALLAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS SET FORTH ON LARGE LOT SUBDIVISION NO. LL-0605:
    RECORDING NO: 9205080108
14. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: CITY OF TUWMATER
    PURPOSE: SLOPES FOR CUTS AND FILLS
    RECORDING DATE: AUGUST 17, 1993
    RECORDING NO.: 9308170286
    AFFECTS: PORTION OF LOT 3 OF LL-0605
15. RIGHT TO MAKE NECESSARY SLOPES FOR CUTS OR FILLS UPON PROPERTY HEREIN DESCRIBED AS GRANTED OR RESERVED IN DEED
    IN FAVOR OF: CITY OF TUMWATER
    RECORDING DATE: JANUARY 18, 1994
    RECORDING NO.: 9401180245
    AFFECTS: PORTION OF LOT 12
16. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: PUGET SOUND POWER & LIGHT COMPANY
    PURPOSE: ELECTRIC TRANSMISSION AND/OR DISTRIBUTION LINE
    RECORDING DATE: OCTOBER 4, 1994
    RECORDING NO.: 9410040217
    AFFECTS: PORTION OF LOT 1 OF SS-1856
17. MATTERS DISCLOSED BY SURVEY RECORDED UNDER AUDITOR'S FILE NO. 3035544, AS FOLLOWS: FENCE LINE ALONG THE WEST BOUNDARY OF LOTS 1 AND 2 OF SS-1856 DO NOT CONFORM TO THE PROPERTY LINE AS SHOWN.
18. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: CITY OF TUMWATER
    PURPOSE: WATER MAIN
    RECORDING DATE: MAY 13, 2008
    RECORDING NO.: 4010031
    AFFECTS: PORTION OF LOT 2 OF LL-0605
19. AGREEMENT FOR WATER MAIN EXTENSION AND LATECOMERS FEES WITH THE CITY OF TUWMATER, AND THE TERMS AND CONDITIONS THEREOF:
    AMOUNT: $89,160.71
    RECORDING DATE: NOVEMBER 18, 2011
    RECORDING NO.: 4238612
    AFFECTS: LOT 2 OF LL-0605
20. AGREEMENT FOR SANITARY SEWER EXTENSION AND LATECOMERS FEES WITH THE CITY OF TUWMATER, AND THE TERMS AND CONDITIONS THEREOF:
    AMOUNT 7930001100: $114,549.13
    AMOUNT 7930001200: $98,803.27
    AMOUNT 7930001400: $76,912.68
    RECORDING DATE: NOVEMBER 18, 2011
    RECORDING NO.: 4238613

(EXCEPTIONS PER CHICAGO TITLE COMMITMENT NUMBER 170016114 WITH EFFECTIVE DATE OF FEBRUARY 3, 2017)

LEGAL DESCRIPTION

LOTS 1 AND 2 OF SHORT SUBDIVSION NO. SS-1856, AS RECORDED JUNE 20, 1983 UNDER AUDITOR'S FILE NO. 8306200008; EXCEPT THAT PORTION OF SAID LOT 1 CONVEYED TO THURSTON COUNTY FOR RIGHT OF WAY BY DEED RECORDED FEBRUARY 8, 1994 UNDER AUDITOR'S FILE NO. 9402080333. IN THURSTON COUNTY, WASHINGTON
AND
LOTS 2 AND 3 OF LARGE LOT SUBDIVISION NO. LL-0605, AS RECORDED MAY 8, 1992 UNDER AUDITOR'S FILE NO. 9205080108. IN THURSTON COUNTY, WASHINGTON
AND
LOT 12 OF THOMPSON'S ADDITION TO BRIGHTON PARK, AS RECORDED IN VOLUME 7 OF PLATS, PAGE 29 1/2; TOGETHER WITH THE WESTERLY 30 FEET OF VACATED THOMPSON STREET ADJOINING ON THE EAST, WHICH UPON VACATED ATTACHED TO SAID PREMISES BY OPERATION OF LAW PURSUANT TO RESOLUTION NO. 5872 ADOPTED JUNE 6, 1978; EXCEPT ANY MOBILE OR MANUFACTURED HOME LOCATED THEREON.
IN THURSTON COUNTY, WASHINGTON

SURVEY NOTES

1. INSTRUMENT USED: SOKKIA SRX 3 TOTAL STATION AND TOPCON GR5 GPS.
2. THIS SURVEY MEETS OR EXCEEDS THE STANDARDS OF WAC 332-130-090
3. SURVEY COMPLETED JULY 2017
4. ALL MONUMENTS SHOWN AS FOUND VISITED JULY 2017.
5. THERE ARE NO DESIGNATED PARKING SPACES ON THE SITE.
6. CITY OF TUMWATER SEWER LIFT STATION EXIST ON TRACT 12.
7. HOUSES ON ALL LOTS ARE VERY DILAPIDATED.
8. WETLANDS FLAGGED BY OTHERS.

DATUM

HELD CENTER OF SECTION (TC POINT 6475) POSITION AS BASE POINT FOR THURSTON COUNTY DATUM. SCALED GPS OBSERVATIONS ABOUT THIS POINT FOR GROUND SCALE. CSF FOR PROJECT IS 0.999935457. PROJECT IS ON GROUND SCALE AND STATE PLANE GRID BEARINGS.

VERTICAL IS NGVD 29 BASED ON TIES TO THURSTON COUNTY MONUMENTS OLY-AIR ELEV 189.20 AND NGS-Q-531 ELEV 186.51

(X) EASEMENTS NOT INCLUDED IN TITLE REPORT

21. SEWER LIFT STATION EASEMENT AND INGRESS AND EGRESS EASEMENT, AND TERMS AND CONDITIONS THEREOF:
    GRANTED TO: CITY OF TUMWATER
    PURPOSE: SEWER LIFT STATION
    RECORDING DATE:JUNE 14, 2007
    RECORDING NO.: 3935011 AND 3935010

CERTIFICATION

TO: SAPPHIRE RE PROPERTY HOLDINGS, LLC , CHICAGO TITLE INSURANCE COMPANY OF WASHINGTON :
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 4, 5, 7A, 8, 9, 11, 13 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON JUNE, 2017.

DATE OF PLAT OR MAP: JULY 12, 2017

BLAIR PRIGGE, PLS 29278

SHEET INDEX

SV-0	NOTES, LEGAL DESCRIPTION, TITLE EXCEPTIONS AND DATUM
SV-1	OVERALL BOUNDARY AND EASEMENTS
SV-2	TOPOGRAPHY - SOUTHWEST
SV-3	TOPOGRAPHY - NORTHWEST
SV-4	TOPOGRAPHY - EAST SIDE

DATE	7/12/2017
SCALE	1" = 80'
M2C PROJECT NO.:	17-591
DRAWN	BEP
CHECKED	BEP
APPROVED	BEP

BLAIR E. PRIGGE — STATE OF WASHINGTON — 29278 — REGISTERED PROFESSIONAL LAND SURVEYOR

MTN 2 COAST LLC
1506 FAIRVIEW ST SE
OLYMPIA, WA 98501
360.239.1497

PROJECT NAME: ALTA/NSPS LAND TITLE SURVEY - TUMWATER BLVD

CLIENT NAME: SCJ ALLIANCE

SHEET NAME: SV-1

SHEET NO. 1 OF 5

DENNIS STREET

THUNDERBIRD VILLAGE RESIDENTS ASSOC
TPN 12702130500
ADDRESS: 706 DENNIS ST SE

DENNIS STREET

328.35
N88°08'37"W

660.60
N88°08'37"W

ACCORDING TO TITLE COMPANY VACATED DENNIS ST WAS NOT TRANSFERRED IN DEED. OWNERSHIP UNCERTAIN

ACCORDING TO TITLE COMPANY VACATED DENNIS ST WAS NOT TRANSFERRED IN DEED. OWNERSHIP UNCERTAIN

OLD HOUSE
24.5'X 55.9'

N02°15'07"E
165.00

HELD EAST LINE OF SILVER RIDGE PLAT

65.45
N88°08'13"W

SILVER RIDGE
VOLUME 27, PAGE
42 PLATS

LOT 21
TPN 74290002100
ADDRESS: 793 SILVER RIDGE WAY SE

LOT 23
TPN 74290002300
ADDRESS: 790 SILVER RIDGE WAY SE

N02°08'10"E
465.87

OLD WELL HOUSE
8.0'X 8.0'

TRACT A
SILVER RIDGE
VOLUME 27, PAGE
42 PLATS

TPN 74290000000
ADDRESS: 6730
SILVER RIDGE DR SE

TPN 79300000300
ADDRESS: 715 DENNIS ST SE
19.435 ACRES

TRACT 2 LLS-06605

TPN 79300000101
ADDRESS: UNKNOWN

N02°04'08"E
631.48

M2C

0' 80' 160'
SCALE 1" = 80'

MONUMENT NOTES

1. FOUND 1/2" REBAR AND CAP, GLIDDEN 5329. 2.3' WEST OF CALC'D POSITION.
2. FOUND 1" OD IRON PIPE, 3.5' WEST OF CALC'D POSITION.
3. FOUND 1/2" REBAR AND CAP, LS 5154, 2.9' WEST OF CALC'D POSITION.
4. FOUND 1/2" REBAR AND CAP, LS 5154, 4.8' WEST OF CALC'D POSITION.
5. FOUND SURFACE BRASS CAP, PLAT MONUMENT

S88°07'02"E
165.26

S88°07'02"E
330.49

S88°07'02"E
331.32

S88°07'02"E
333.66

S88°07'02"E
329.09

TPN 79300000094
ADDRESS: 804
TUMWATER BLVD SE

315.40
S02°07'19"W

TRACT 3
LLS-06605

TPN 79300001100
ADDRESS: 715 DENNIS ST SE
5.981 ACRES

TPN 79300001200
ADDRESS: 934 TUMWATER BLVD SE
4.792 ACRES

LOT 2 SS-2771
AFN 3035544

LOT 1 SS-2771
AFN 3035544

OLD HOUSE
25.7'X 58.3'

LOT 2 SS-1856

OUT HOUSE

TPN 79300001401
ADDRESS: 1046 TUMWATER BLVD SE
1.744 ACRES

S88°07'02"E
328.64

TPN 79300001400
ADDRESS: 1030 TUMWATER BLVD SE
2.894 ACRES

TPN 79300001500
ADDRESS: 6911 HENDERSON BLVD SE

N01°57'29"E
623.25

N02°04'08"E
586.00

LOT 1 SS-1856

SS-0300
AFN 973660

S88°06'15"E
165.18

TPN 79300001000
ADDRESS: 816
TUMWATER BLVD SE

N02°08'10"E
315.44

TPN 79300001302
ADDRESS: 1008
TUMWATER BLVD SE

631.19
S02°15'51"W

TPN 79300001300
ADDRESS: 1010
TUMWATER BLVD SE

SHED AND WELL HOUSE

OLD HOUSE
48.0'X 57.0'

S71°23'31"E
10.70

N01°54'32"E
10.00

200.00

N67°40'52"E
74.28

N02°04'08"E
45.48

330.21
N88°05'28"W

330.19
N88°05'28"W

N88°05'28"W
50.00

TUMWATER BLVD

OP

1/16TH CORNER

DATE	7/12/2017
SCALE	1" = 80'
M2C PROJECT NO.:	17-591
DRAWN	BEP
CHECKED	BEP
APPROVED	BEP

BLAIR E. PRIGGE
STATE OF WASHINGTON
29278
REGISTERED
PROFESSIONAL LAND SURVEYOR

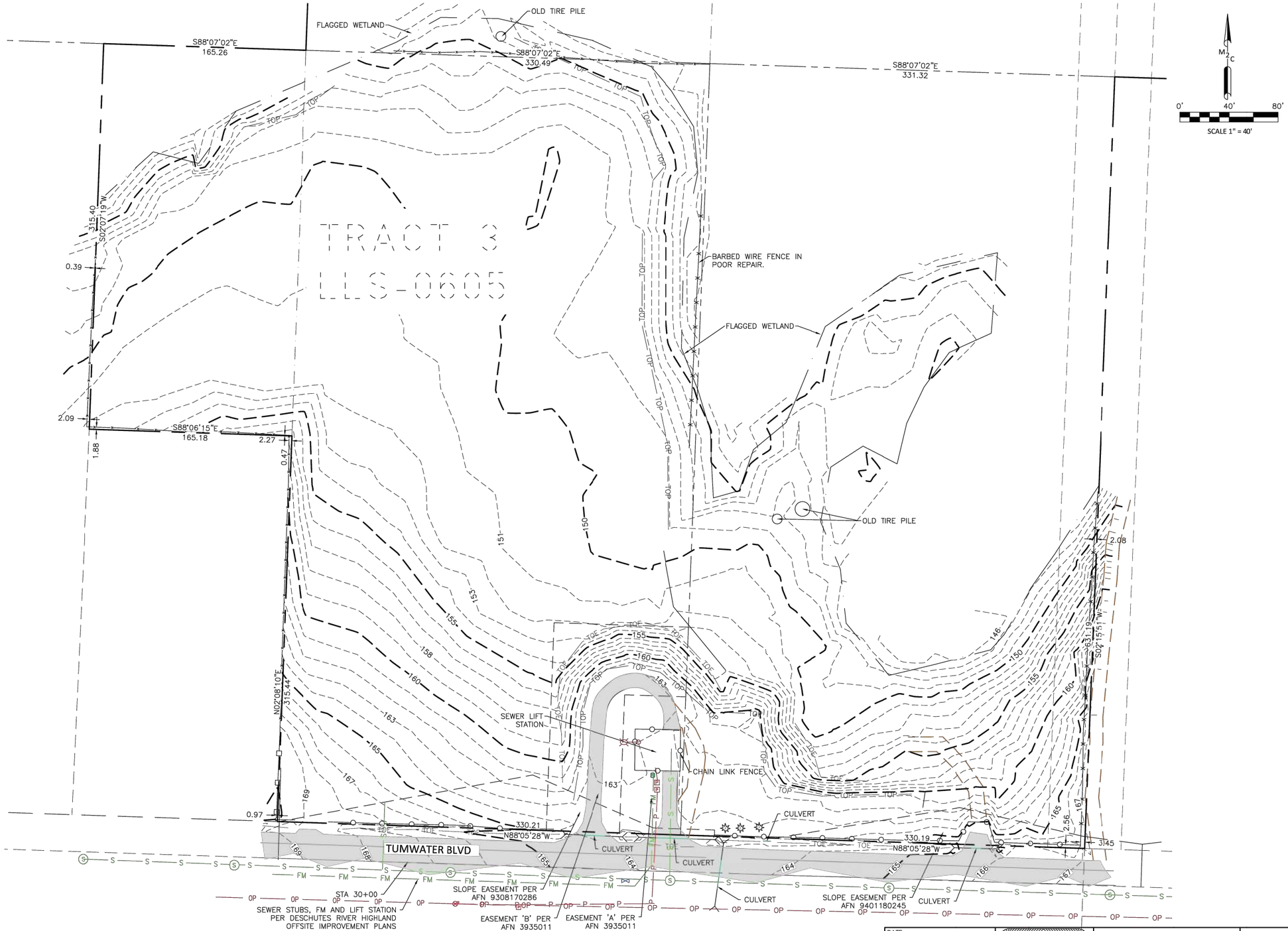
MTN 2 COAST LLC
1506 FAIRVIEW ST SE
OLYMPIA, WA 98501
360.239.1497

PROJECT NAME:
ALTA/NSPS LAND TITLE SURVEY - TUMWATER BLVD

CLIENT NAME:
SCJ ALLIANCE

SHEET NAME:
SV-1

SHEET NO. 2 OF 5



DATE	7/12/2017
SCALE	1" = 40'
M2C PROJECT NO.:	17-591
DRAWN	BEP
CHECKED	BEP
APPROVED	BEP

BLAIR E. PRIGGE
STATE OF WASHINGTON
29278
REGISTERED
PROFESSIONAL LAND SURVEYOR

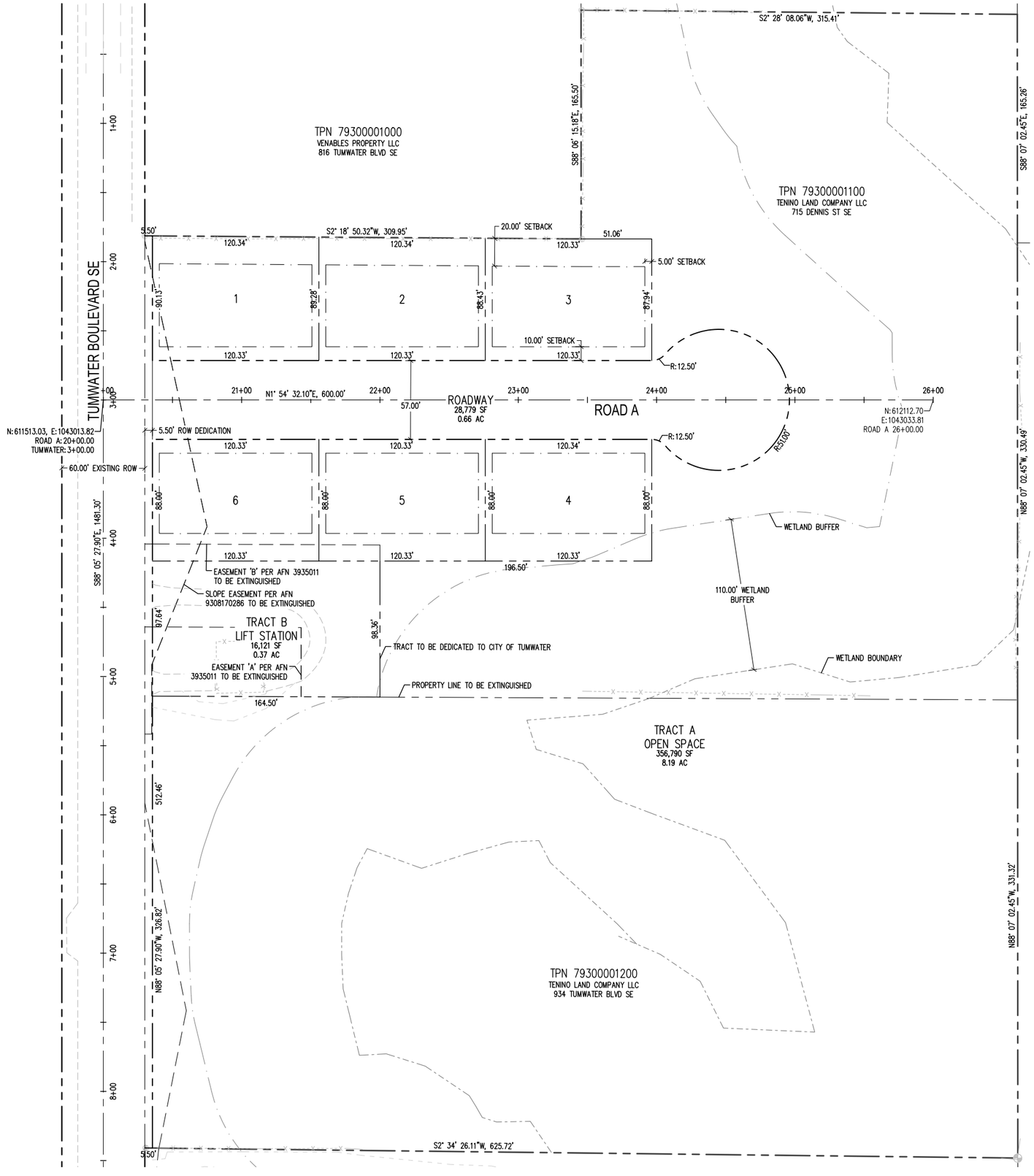
MTN 2 COAST, LLC
1506 FAIRVIEW ST SE
OLYMPIA, WA 98501
360.239.1497

PROJECT NAME:
ALTA/NSPS LAND TITLE
SURVEY - TUMWATER BLVD

CLIENT NAME:
SCJ ALLIANCE

SHEET NAME:
SV-2

SHEET NO. 3 OF 5



N

0 40 80

SCALE IN FEET

LEGEND

- PROPERTY LINE
- LOT LINE
- SETBACK LINE
- EASEMENT LINE
- EXISTING CHANNELIZATION
- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER

PARCEL AREA TABLE

PARCEL #	AREA (SF)
1	10794
2	10692
3	10599
4	10589
5	10589
6	10589

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES
OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501

STAMP
WHITNEY E. DUNLAP
STATE OF WASHINGTON
22774
REGISTERED
PROFESSIONAL ENGINEER
5/16/2025

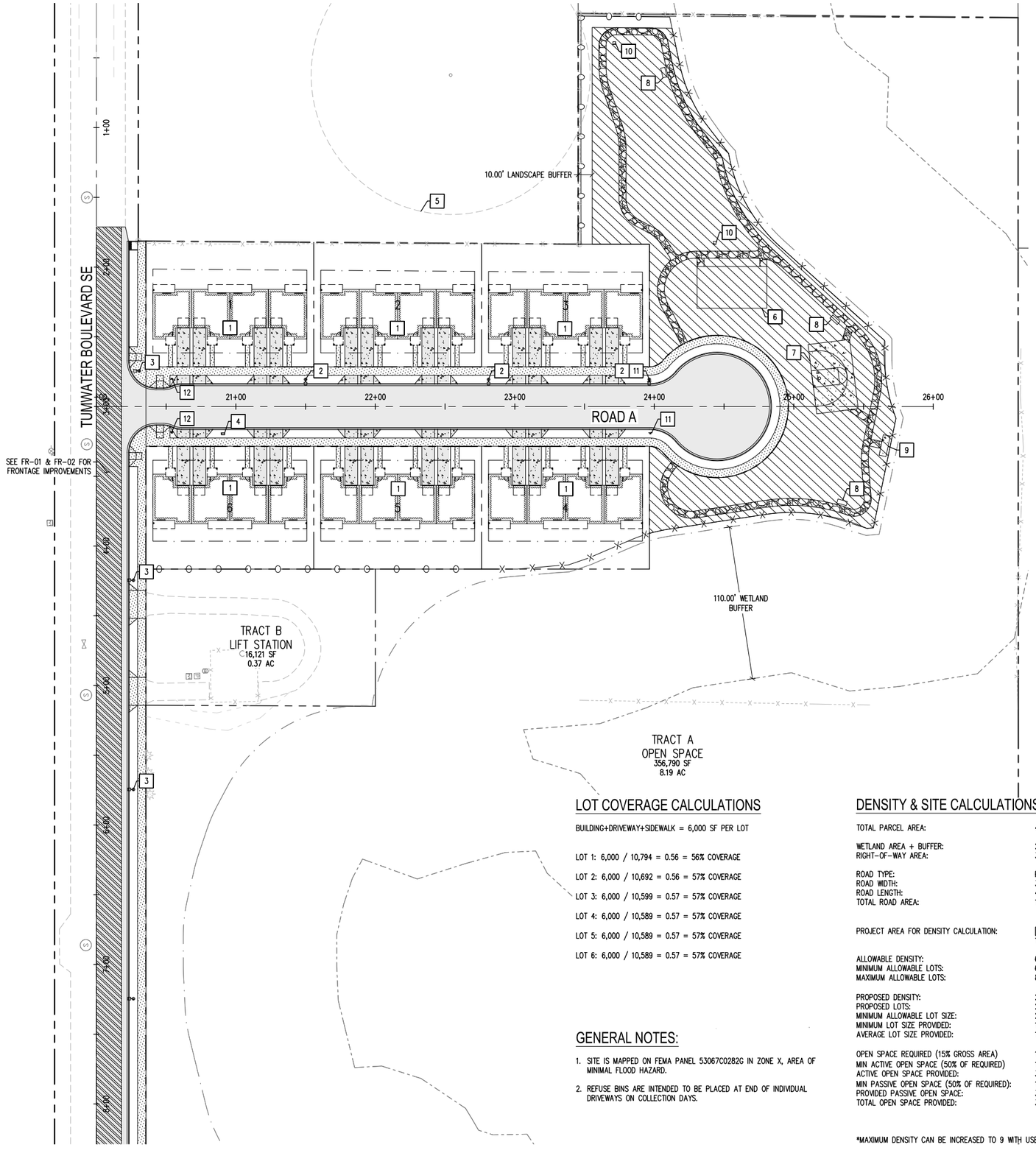
TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY PLAT MAP

SHEET
PL-01

Jul 15, 2025 12:00:12pm – User: WWhitney@jsainc.com
Z:\ – PROJECTS\100 TODD HANSEN\100.006 TUMWATER BLVD – MULTIFAMILY\ACAD\100.006 PL-01.DWG



N

0 40 80

SCALE IN FEET

LEGEND

- PROPERTY LINE
- LOT LINE
- SETBACK LINE
- EASEMENT LINE
- EXISTING CHANNELIZATION
- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER
- 42" CEDAR SPLIT RAIL WETLAND FENCING PLACE WETLAND BUFFER SIGN EVERY 50'
- 72" CEDAR FENCING
- PROPOSED STREET LIGHT
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- CEMENT CONCRETE SIDEWALK
- CEMENT CONCRETE DRIVEWAYS
- ASPHALT PAVEMENT
- GRIND & OVERLAY
- CEMENT CONCRETE AS NOTED
- DECOMPOSED GRANITE PATHWAY
- ACTIVE OPEN SPACE SEE LANDSCAPE PLANS FOR USE OF AREA

LOT COVERAGE CALCULATIONS

BUILDING+DRIVEWAY+SIDEWALK = 6,000 SF PER LOT

LOT 1: 6,000 / 10,794 = 0.56 = 56% COVERAGE

LOT 2: 6,000 / 10,692 = 0.56 = 57% COVERAGE

LOT 3: 6,000 / 10,599 = 0.57 = 57% COVERAGE

LOT 4: 6,000 / 10,589 = 0.57 = 57% COVERAGE

LOT 5: 6,000 / 10,589 = 0.57 = 57% COVERAGE

LOT 6: 6,000 / 10,589 = 0.57 = 57% COVERAGE

GENERAL NOTES:

1. SITE IS MAPPED ON FEMA PANEL 53067C0282G IN ZONE X, AREA OF MINIMAL FLOOD HAZARD.
2. REFUSE BINS ARE INTENDED TO BE PLACED AT END OF INDIVIDUAL DRIVEWAYS ON COLLECTION DAYS.

DENSITY & SITE CALCULATIONS

TOTAL PARCEL AREA:	469,168 SF	10.77 AC
WETLAND AREA + BUFFER:	287,616 SF	6.60 AC
RIGHT-OF-WAY AREA:	32,405 SF	0.74 AC
ROAD TYPE:	PUBLIC – LOCAL RESIDENTIAL	
ROAD WIDTH:	32 FT	
ROAD LENGTH:	450 FT	
TOTAL ROAD AREA:	14,400 SF	
PROJECT AREA FOR DENSITY CALCULATION:	[SITE AREA] – [CRITICAL AREA] – [ROW]	10.77 – 6.60 – 0.74 = 3.43 AC
ALLOWABLE DENSITY:	6–8 UNITS PER AC*	
MINIMUM ALLOWABLE LOTS:	6 UNITS PER AC X 3.43 AC = 21 LOTS	
MAXIMUM ALLOWABLE LOTS:	8 UNITS PER AC X 3.43 AC = 27 LOTS	
PROPOSED DENSITY:	24 UNITS / 3.43 AC = 7 LOTS PER AC	
PROPOSED LOTS:	24 CONDOMINIUM TOWNHOMES	
MINIMUM ALLOWABLE LOT SIZE:	2,400 SF	
MINIMUM LOT SIZE PROVIDED:	10,589 SF	
AVERAGE LOT SIZE PROVIDED:	10,642 SF	
OPEN SPACE REQUIRED (15% GROSS AREA)	10.77 AC X 0.15 = 1.62 AC	
MIN ACTIVE OPEN SPACE (50% OF REQUIRED)	1.62 AC X 0.50 =	0.81 AC
ACTIVE OPEN SPACE PROVIDED:	36,380 SF	0.84 AC
MIN PASSIVE OPEN SPACE (50% OF REQUIRED):	1.62 AC X 0.50 =	0.81 AC
PROVIDED PASSIVE OPEN SPACE:	334,100 SF	7.67 AC
TOTAL OPEN SPACE PROVIDED:	370,480 SF	8.51 AC

*MAXIMUM DENSITY CAN BE INCREASED TO 9 WITH USE OF DEVELOPMENT CREDITS

[X] CONSTRUCTION NOTES

1. PROPOSED 4 UNIT, 2-STORY TOWNHOME BUILDING
2. INTERNAL STREET LIGHTING
   LIGHTS SHALL BE AT A MOUNTING HEIGHT OF 25' WITH AN ARM LENGTH OF 6'. MAXIMUM SPACING 120 FEET ON CENTER
3. TUMWATER BLVD STREET LIGHTING
   LIGHTS SHALL BE AT A MOUNTING HEIGHT OF 35' WITH AN ARM LENGTH OF 8'. MAXIMUM SPACING 150 FEET ON CENTER
4. MAILBOX CLUSTER
5. 100' WELLHEAD PROTECTION RADIUS
6. PLAYGROUND, CONCRETE PERIMETER WITH WOOD CHIP BASE
7. HALF COURT BASKETBALL
8. BENCH
9. WETLAND VIEWING PLATFORM WITH INFORMATIONAL SIGNAGE
10. DISC GOLF BASKET TARGET
11. "NO PARKING IN CUL-DE-SAC" SIGN
12. "NO PARKING HERE TO CORNER" SIGN

PROJECT INFORMATION

APPLICANT	TENINO LAND COMPANY, TODD HANSEN
ENGINEER	JSA CIVIL, WHITNEY DUNLAP
PARCEL NUMBER	79300001100 & 79300001200
PROPOSED USE	SINGLE FAMILY RESIDENTIAL – TOWNHOME CONDOS
SIZE OF EACH UNIT	± 1,452 SF
FLOOR AREA RATIO	RANGE FROM 0.50 TO 0.60
BUILDING HEIGHT	± 30' (35' MAX ALLOWABLE)
NUMBER OF PARKING SPACES	1 GARAGE SPACE + 1 DRIVEWAY SPACE PER LOT = 48 PARKING SPACES FOR DEVELOPMENT
IMPERVIOUS SURFACE PER LOT	SEE CALCULATIONS THIS SHEET, MAX 70% ALLOWABLE
ZONING	SINGLE FAMILY MEDIUM DENSITY (SFM & SFM2) WITH AIRPORT OVERLAY
WATER	CITY OF TUMWATER
SEWER	CITY OF TUMWATER
SETBACKS	FRONT 10' SIDE 5' (0' FOR CONNECTED UNITS) REAR 20'

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
CHECKED
W. DUNLAP
SUBMITTAL DATES

OTB DATE
–

JSA CIVIL
Engineering | Planning | Management
111 TUMWATER BLVD SE, SUITE B203
TUMWATER, WA 98501

STAMP
WHITNEY E. DUNLAP
STATE OF WASHINGTON
22774
REGISTERED
PROFESSIONAL ENGINEER
5/16/2025

TUMWATER BOULEVARD
TOWNHOME CONDOMINIUMS
715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY SITE PLAN

SHEET
SP-01

May 15, 2025 12:00:59pm – User: WhitneyDunlap
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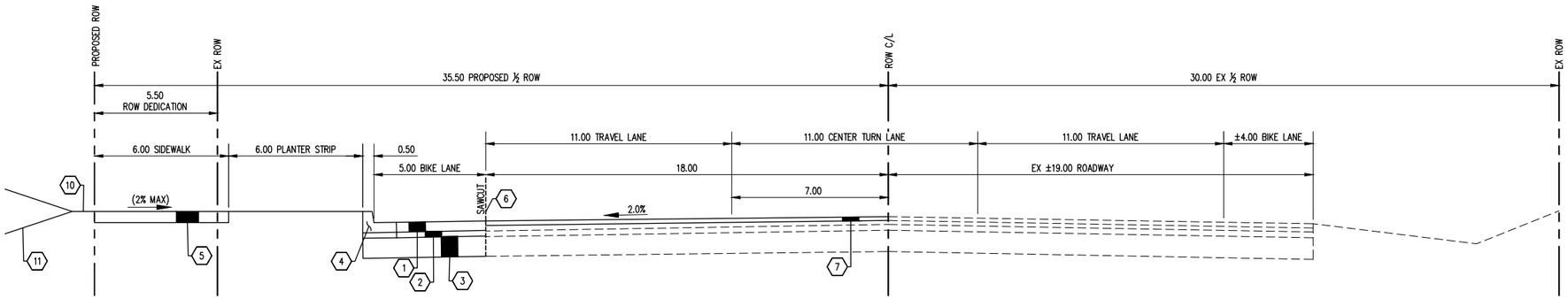
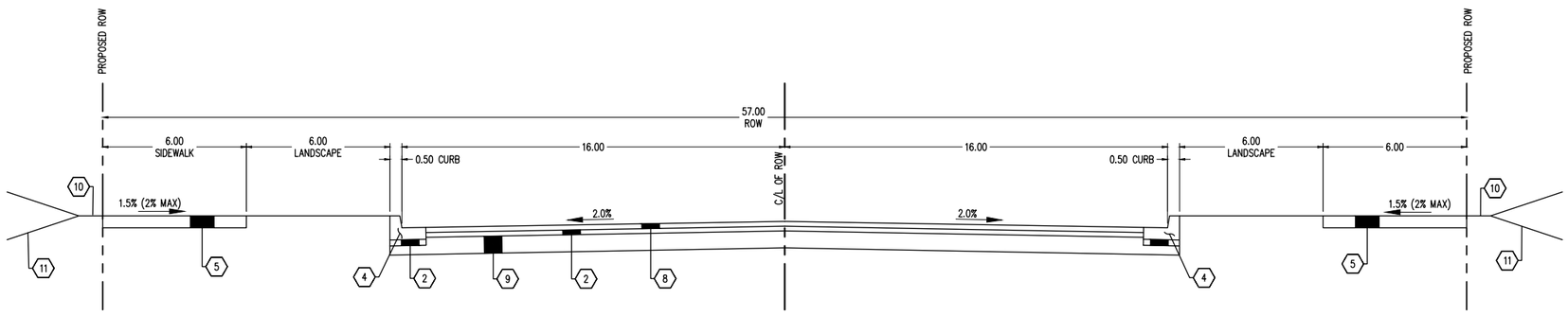


TUMWATER BLVD WIDENING (ARTERIAL)

NTS



ROAD A (LOCAL ACCESS)

NTS

CONSTRUCTION NOTES

1. 0.50' COMPACTED DEPTH HMA
2. 0.20' COMPACTED DEPTH CSTC
3. 1.50' COMPACTED DEPTH CSBC
4. CEMENT CONCRETE CURB & GUTTER
5. CEMENT CONCRETE SIDEWALK
6. SAWCUT A CLEAN VERTICAL EDGE
7. 0.17' GRIND AND OVERLAY EXISTING ASPHALT AS SHOWN ON PLAN
8. 0.30' COMPACTED DEPTH HMA
9. 0.80' COMPACTED CSBC
10. 1.0' BENCH BEHIND SIDEWALK
11. MAXIMUM 3(H) TO 1(V) CATCH SLOPE

CALL BEFORE YOU DIG

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VERTICAL DATUM
NGVD 29

REVISIONS

PROJECT NO.
100.006
DRAWN
S. JANIK
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W. DUNLAP
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TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY ROAD SECTIONS

SHEET
XS-01

May 15, 2025, 12:01:14pm - User: WhitneyDunlap
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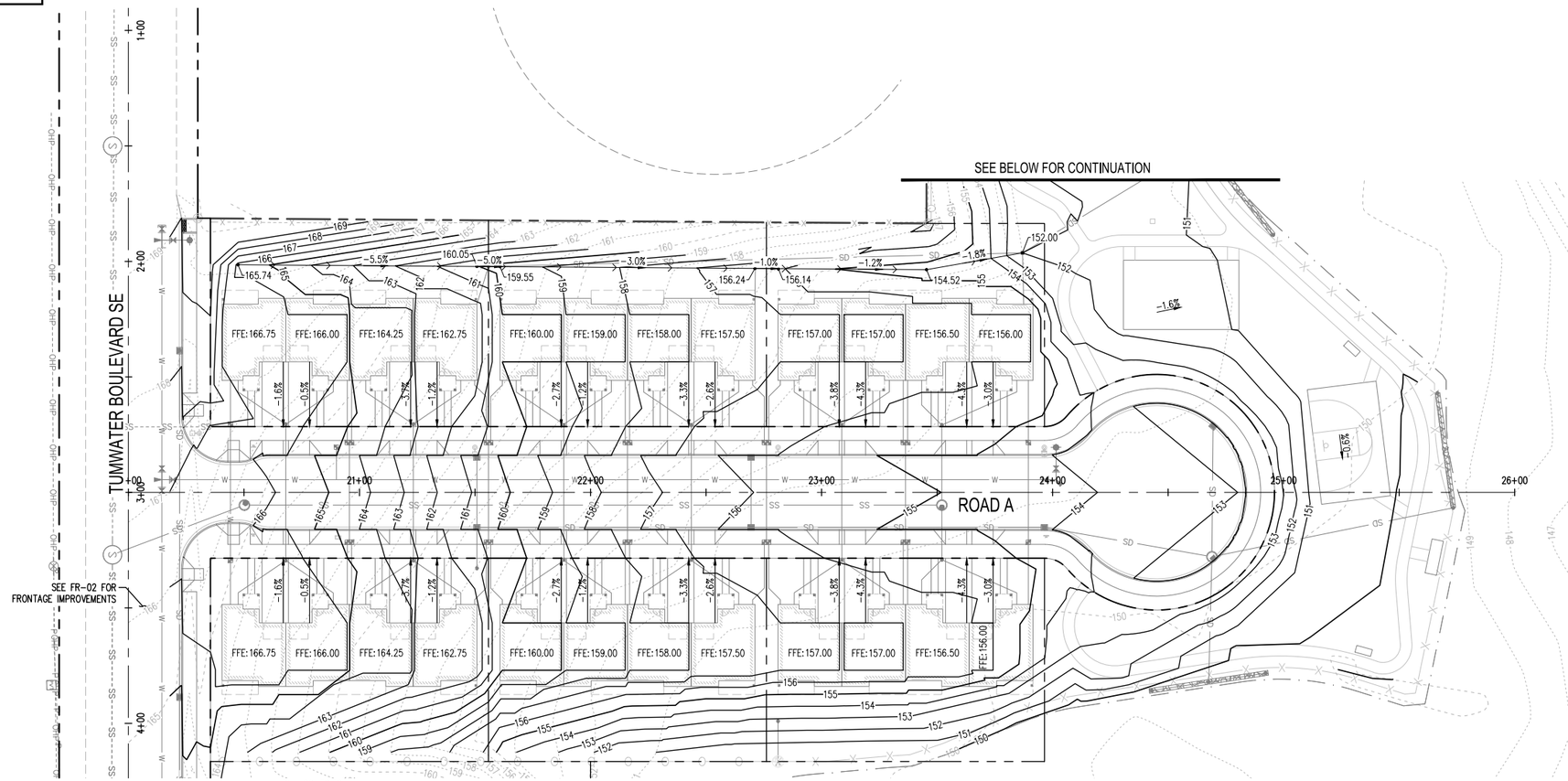

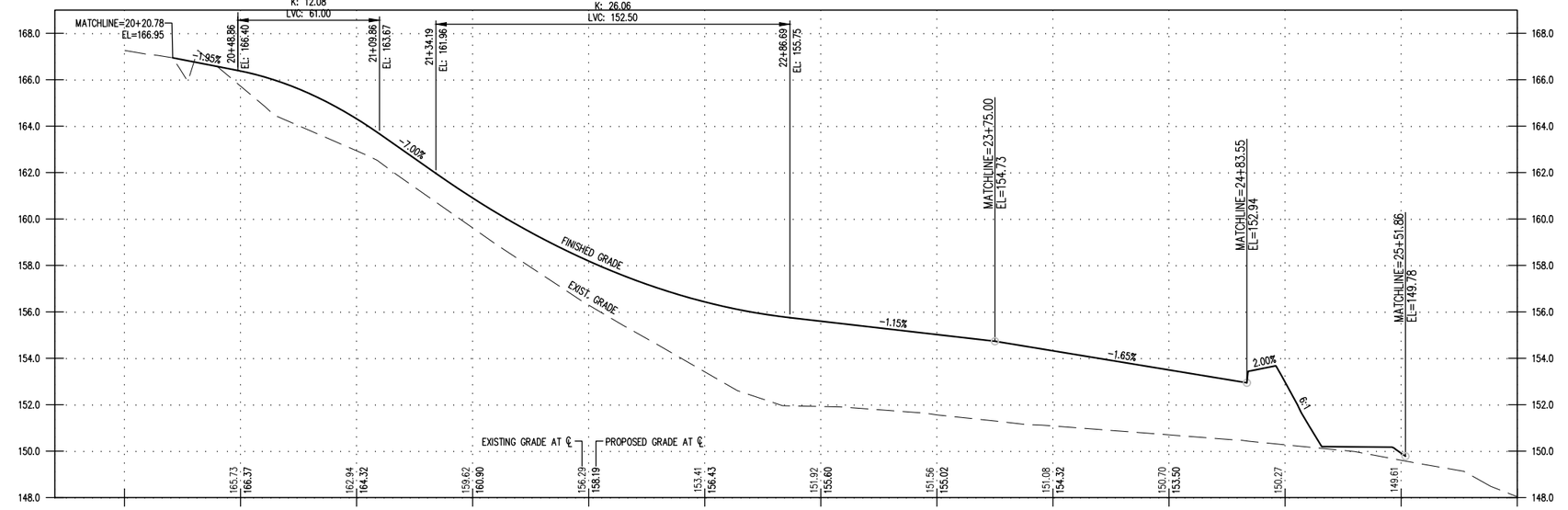

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VERTICAL DATUM
NGVD 29

N

0 30 60
SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- GRADE BREAK
- EXISTING CHANNELIZATION
- EXISTING STORM LINE
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- STORM LINE
- CATCH BASIN
- SLOPE ARROW
- SPOT ELEVATION

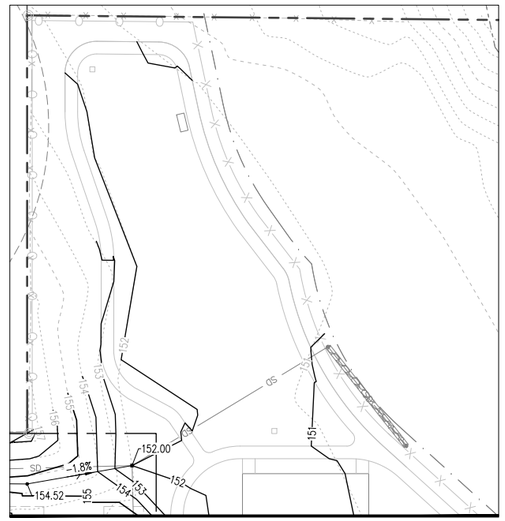
GENERAL NOTES

1. SPOT ELEVATIONS REPRESENT FINISHED GRADE AT FLOW LINE UNLESS OTHERWISE NOTED
2. CATCH SLOPES TO EXISTING GRADE SHALL NOT EXCEED 3:1
3. CONTRACTOR SHALL NOT ALLOW WATER TO POND AT SUBGRADE OR BASE MATERIAL ADJACENT TO CURB INLETS AND CATCH BASINS PRIOR TO PLACEMENT OF PAVEMENT. TEMPORARY PROVISIONS SUCH AS DEWATERING AND INSTALLATION OF SUBDRAINS SHALL BE TAKEN TO KEEP THE SUBGRADE DRY DURING CONSTRUCTION.
4. ACRONYMS FOR SPOT ELEVATIONS:
   - BW: BOTTOM OF WALL
   - HP: HIGH POINT
   - LP: LOW POINT
   - MATCH EX: MATCH EXISTING GRADE
   - TBC: TOP BACK OF CURB
   - TW: TOP OF WALL
   - SW: SIDEWALK

GRADING QUANTITIES

CUT: 1,000 CY
FILL: 10,000 CY

NOTE: QUANTITIES ARE APPROXIMATE FOR PERMITTING PURPOSES ONLY



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W. DUNLAP
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OTB DATE
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JSA CIVIL
Engineering | Planning | Management
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TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY GRADING PLAN

SHEET
CG-01

Jul 15, 2025 12:02:02pm - User: WhitneyDunlap
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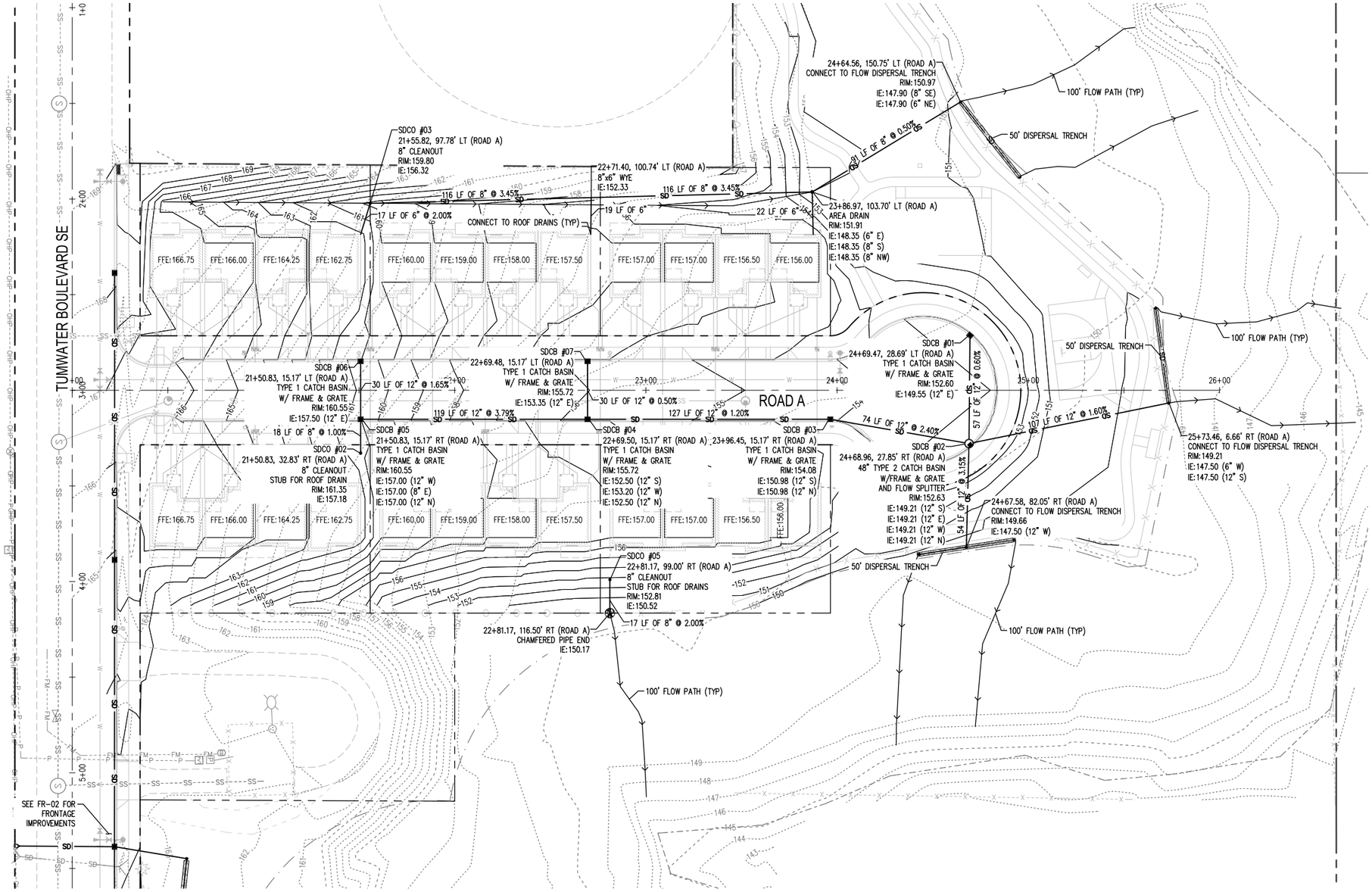

N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING CHANNELIZATION
- EXISTING STORM LINE
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- WATER LINE
- WATER SERVICE LINE
- SEWER LINE
- ADS N-12 STORM LINE UNLESS OTHERWISE NOTED
- CATCH BASIN
- STORM CLEANOUT
- AREA DRAIN
- RIP RAP
- FLOW DISPERSAL TRENCH

CALL BEFORE YOU DIG

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VERTICAL DATUM
NGVD 29

Jul 15, 2025 12:02:45pm – User: WhitneyDunlap
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REVISIONS

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QTR DATE
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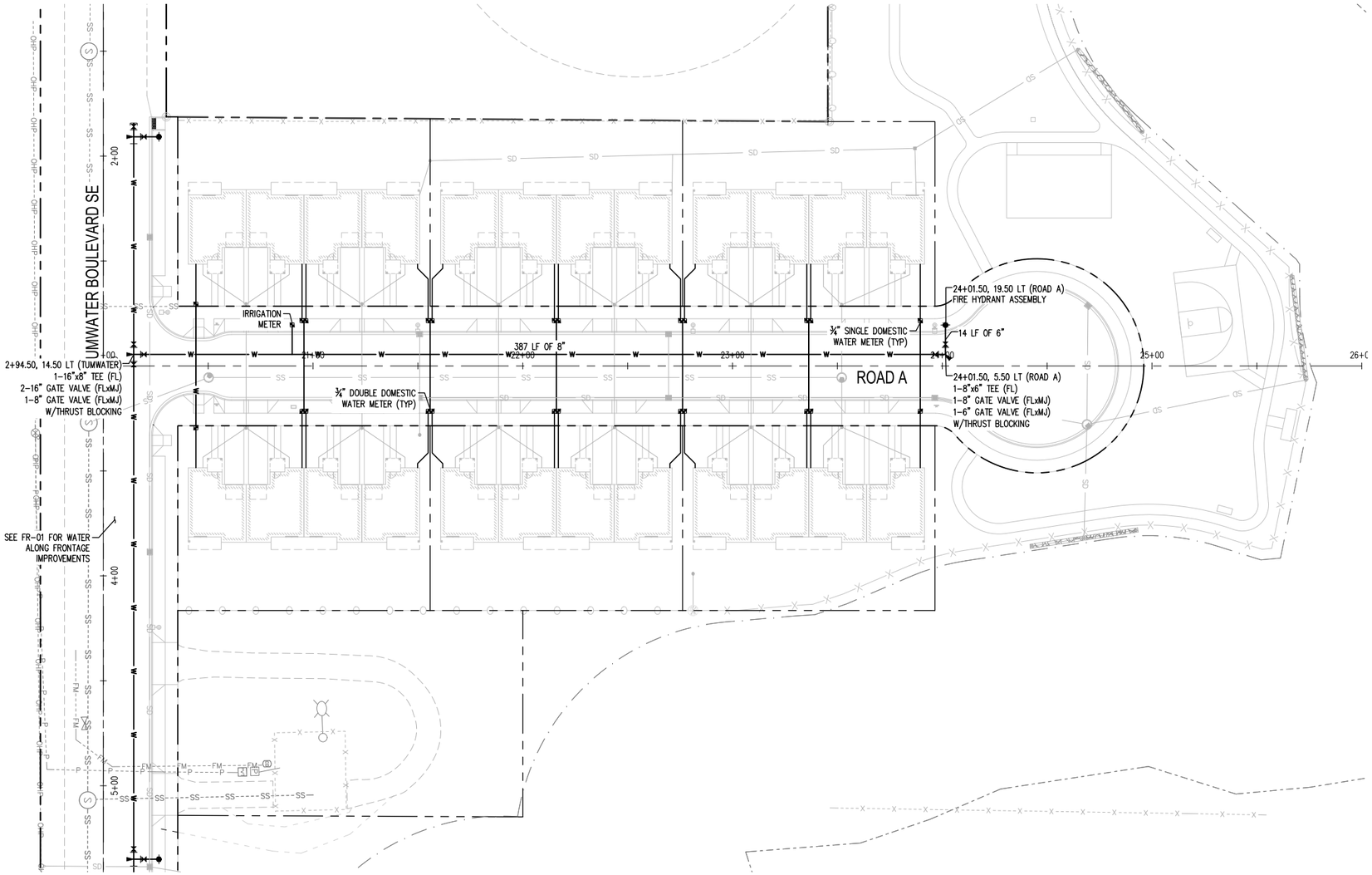
TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY
STORMWATER PLAN

SHEET
SD-01



N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CHANNELIZATION
- EXISTING WATER LINE
- EXISTING WATER METER
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- STORM LINE
- SEWER LINE
- ANSI/AWWA PVC C900 DR 18 WATER LINE UNLESS OTHERWISE NOTED
- HDPE WATER SERVICE LINE UNLESS OTHERWISE NOTED
- WATER FITTINGS W/ THRUST BLOCKING
- WATER METER
- FIRE HYDRANT

CALL BEFORE YOU DIG

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NGVD 29

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TENINO LAND COMPANY
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SHEET TITLE
PRELIMINARY WATER PLAN

SHEET
WT-01

May 15, 2025 12:03:24pm – User WhitneyDunlap
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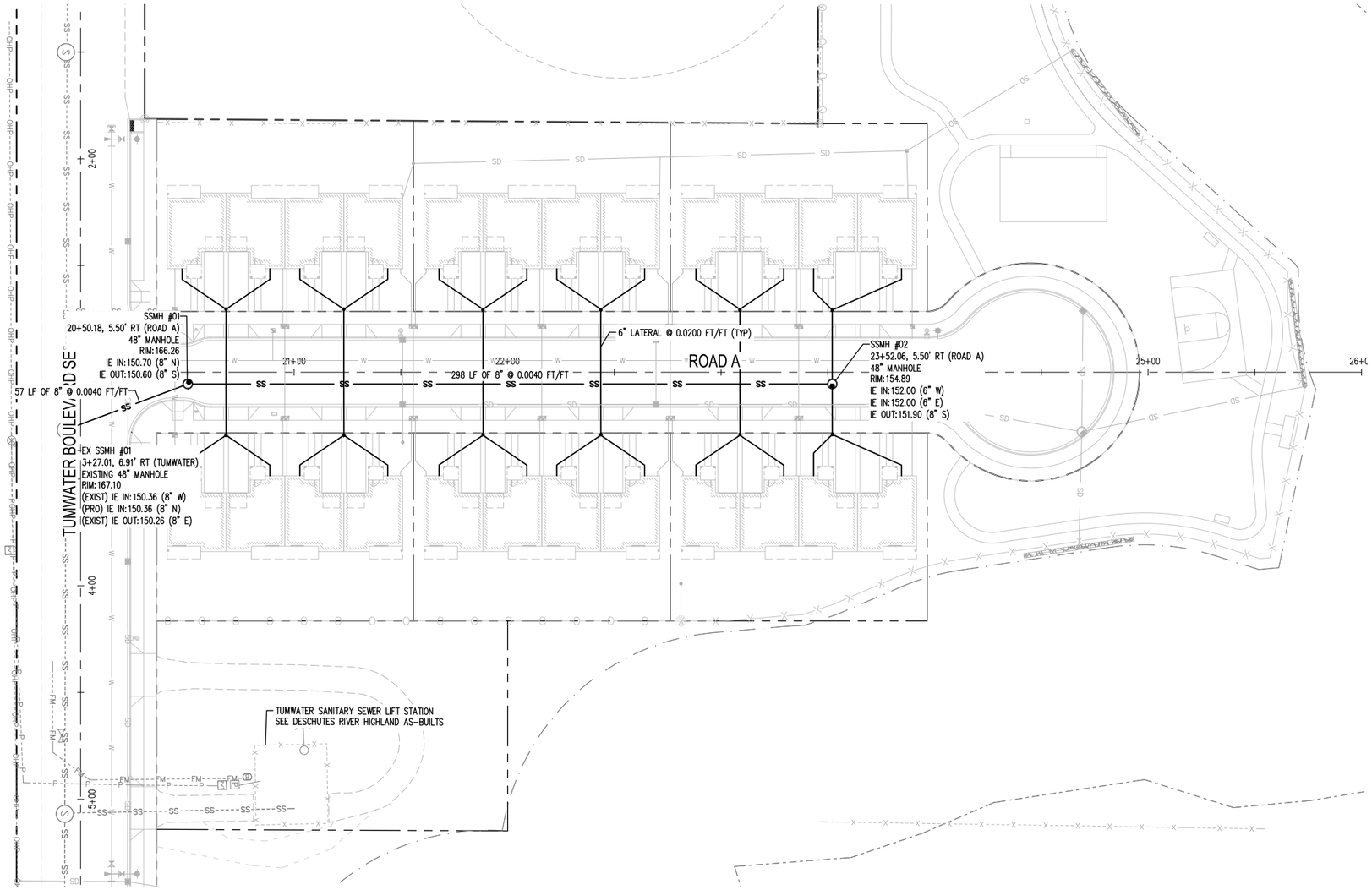

N

0 30 60

SCALE IN FEET

LEGEND

- PROPERTY LINE
- EXISTING CHANNELIZATION
- EXISTING SEWER LINE
- EXISTING FORCE MAIN LINE
- EXISTING SEWER CLEANOUT
- EXISTING SEWER MANHOLE
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- STORM LINE
- WATER LINE
- WATER SERVICE LINE
- ASTM D 3034 SDR 35 PVC SEWER LINE UNLESS OTHERWISE NOTED
- SEWER MANHOLE
- SEWER CLEANOUT

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715 DENNIS ST SE
TUMWATER, 98501

TENINO LAND COMPANY
17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY
SEWER PLAN

SHEET
SS-01

Jul 15, 2025 12:04:04pm – User: WhitneyDunlap
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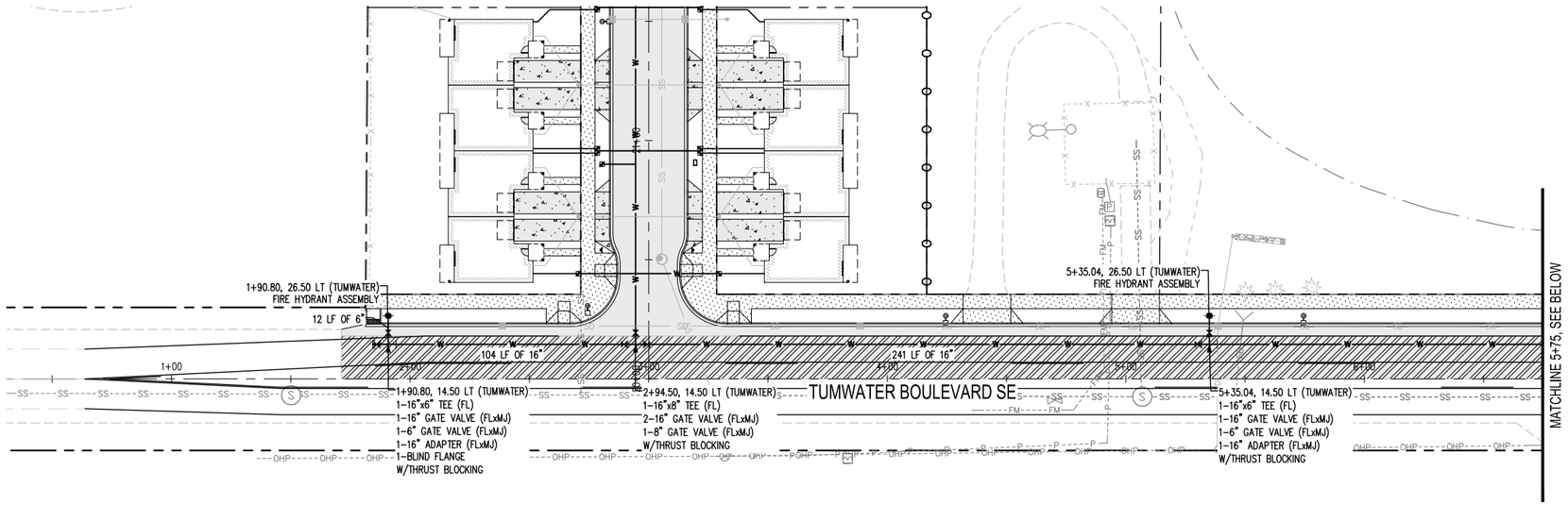

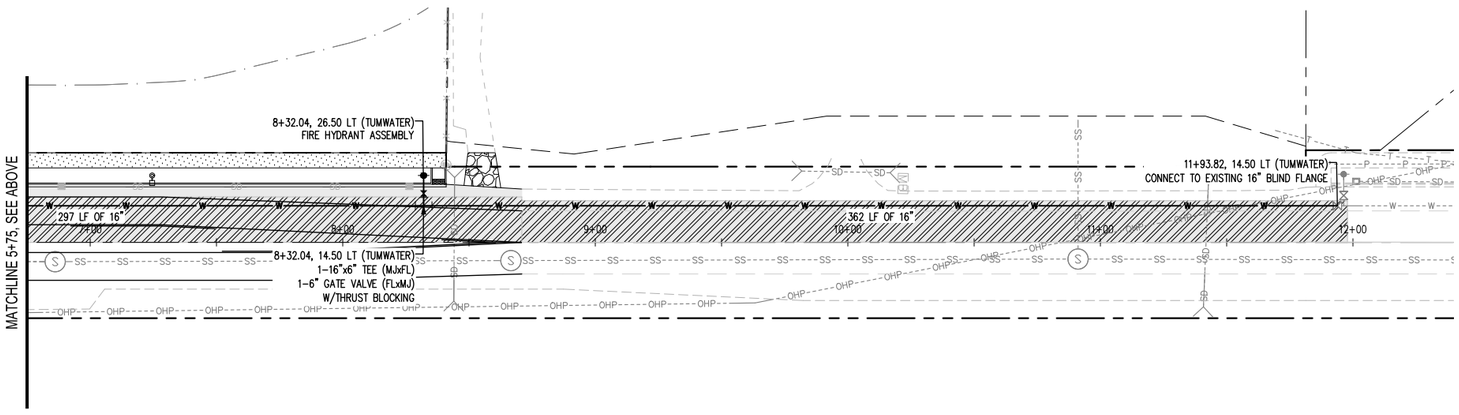

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NGVD 29

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0 30 60

SCALE IN FEET

LEGEND

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- LOT LINE
- EASEMENT LINE
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- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- CEMENT CONCRETE SIDEWALK
- CEMENT CONCRETE DRIVEWAYS
- ASPHALT PAVEMENT
- GRIND & OVERLAY
- SD — STORM LINE
- SS — SEWER LINE
- W — ANSI/AWWA PVC C900 DR 18 WATER LINE UNLESS OTHERWISE NOTED
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- WATER FITTINGS W/THRUST BLOCKING
- WATER METER
- FIRE HYDRANT

REVISIONS

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100.006

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W. DUNLAP

SUBMITTAL DATES

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17348 MARCH ST SW
TENINO, WA 98589

SHEET TITLE
PRELIMINARY
FRONTAGE
IMPROVEMENTS

SHEET
FR-01

May 15, 2025, 12:04:48pm – User: WhitneyDunlap
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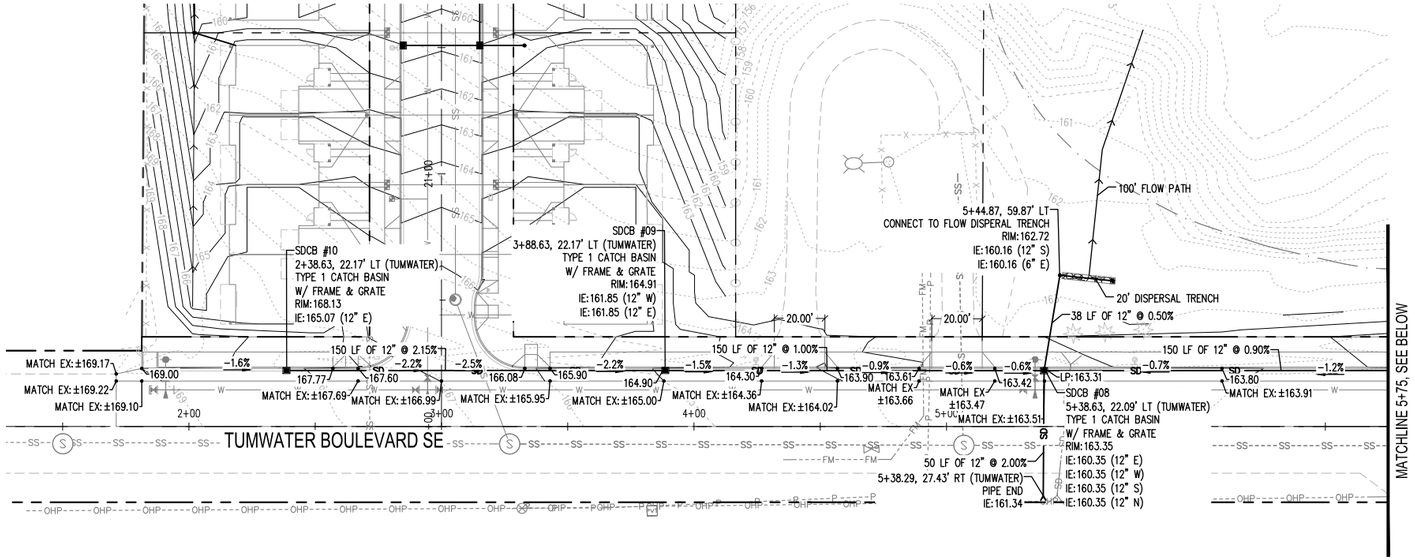

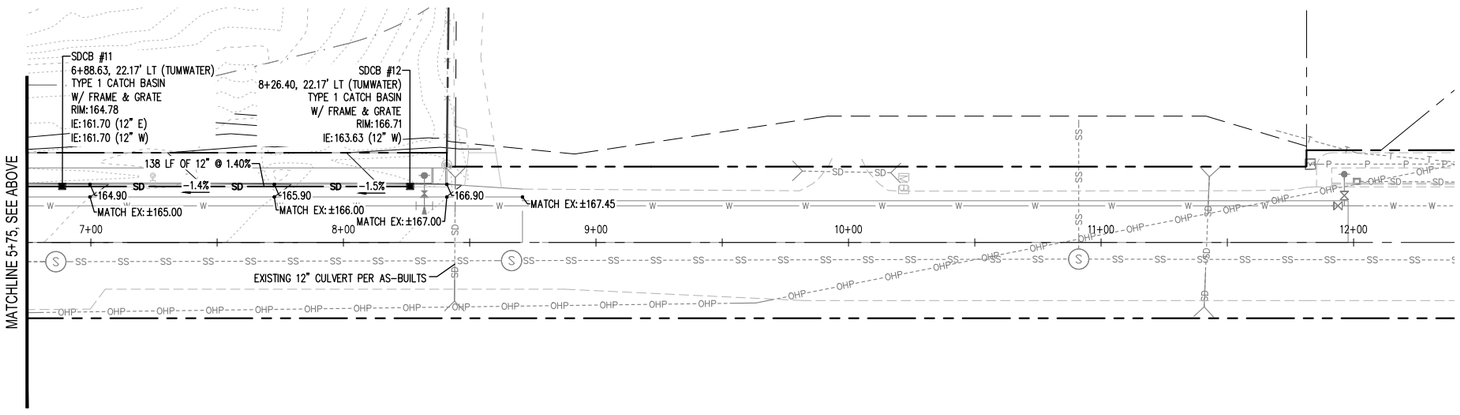

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- LOT LINE
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- EXISTING WETLAND BOUNDARY
- 110' WETLAND BUFFER
- PROPOSED BUILDING
- CEMENT CONCRETE CURB & GUTTER
- SS — SEWER LINE
- W — WATER LINE
- SD — ADS N-12 STORM LINE UNLESS OTHERWISE NOTED
- CATCH BASIN
- RIP RAP PAD

REVISIONS

PROJECT NO.
100.006

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S. JANIK

CHECKED
W. DUNLAP

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OTB DATE
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TENINO, WA 98589

SHEET TITLE
PRELIMINARY
FRONTAGE GRADING
& STORM

SHEET
FR-02

May 15, 2025, 12:05:35pm – User: WhitneyDunlap
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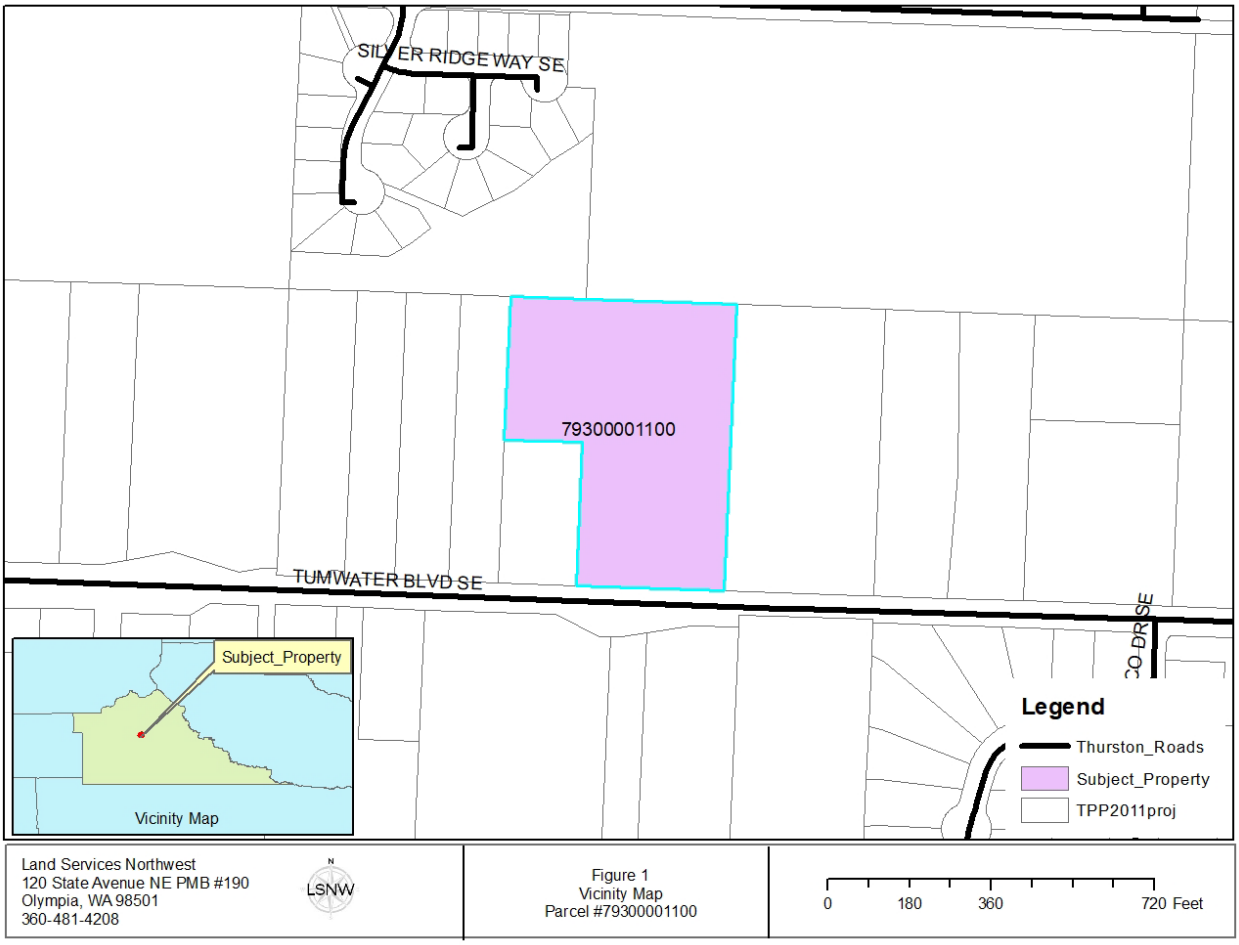
REGULATED PRAIRIE ABSENCE REPORT

Prepared for Tenino Land Company
May 13, 2024

Land Services Northwest
Alex Callender MS, PWS
120 State Ave NE PMB 190, Olympia, WA, 98501
360.481.4208

1.0 INTRODUCTION

This report is the result of a Regulated Prairie Survey of the 5.86 acre parcel #79300001100 at 715 DENNIS ST SE Tumwater, WA with the partial legal description of Section 02 Township 17 Range 2W Quarter NW SE Plat THOMPSONS TO BRIGHTON PARK LL-0605 LT 3 Document 004/413.
(Figure 1)



The Purpose of this report is to provide a study of the presence or absence of indicators of Regulated Prairie under Tumwater Code Title 16 Environment.

.

Regulated Prairie, Garry Oaks and Mima Mounds

The parcel contains soil types associated with prairies as defined in the Tumwater Code Title 16 Environment. Transects were walked throughout the parcel (or at least throughout the building envelope and 50-foot buffer area). A list of plant species encountered during the survey was recorded and CAO target prairie plants were noted. Regulated prairie can be either wet or dry outwash prairie and is critical habitat for the Taylors checkerspot butterfly and the Mardon skipper butterfly. Prairie habitat is regulated if three indictor species are found within 5 meters (15 feet) of each other with 25 or more of each species in the plot.

2.0 METHODS

2.1 Review of Existing Information

Background Review

Background information on the subject property was reviewed prior to field investigations and included the following:

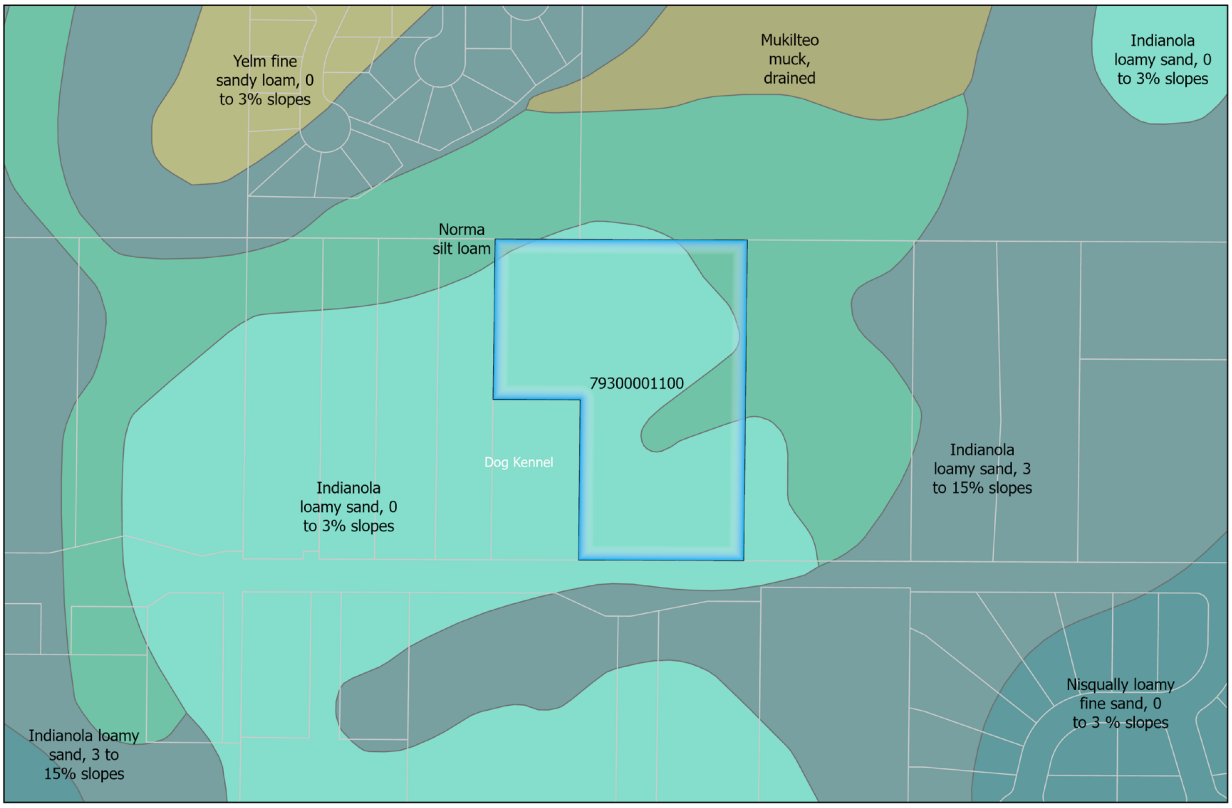
- Thurston County Geodata Gopher Soils Shapefiles
- WDFW Priority Habitats and Species Information
- USFWS species list information
- WDFW species information

2.2 Regulated Prairie Survey Protocol

1.0 Prairie Review Method

The existing information shows Indianola loamy sand 0 to 3 percent slopes, which is a prairie soil (Figure 2 and attachment A).

Transects were walked throughout the parcel (or at least throughout the building envelope and 50-foot buffer area).



N LSNW Land Services Northwest 120 State Avenue NE PMB 190 Olympia,WA 98501	Figure Two NRCS Soil Survey	0 187.5 375 750 Feet

Soils That Require Prairie Plant Review*

SCS_CODE	SCS_NAME	USFWS Gopher? (Y/N)
005	Baldhill very stony sandy loam, 0 to 3% slopes	N
007	Baldhill very stony sandy loam, 15 to 30% slopes	N
006	Baldhill very stony sandy loam, 3 to 15% slopes	N
008	Baldhill very stony sandy loam, 30 to 50% slopes	N
020	Cagey loamy sand	Y
032	Everett very gravelly sandy loam, 0 to 3% slopes	Y
033	Everett very gravelly sandy loam, 3 to 15% slopes	Y
042	Grove very gravelly sandy loam, 3 to 15% slopes	N
046	Indianola loamy sand, 0 to 3% slopes	Y
047	Indianola loamy sand, 3 to 15% slopes	Y
073	Nisqually loamy fine sand, 0 to 3 % slopes	Y
074	Nisqually loamy fine sand, 3 to 15 % slopes	Y
109	Spana gravelly loam	Y
114	Spanaway-Nisqually complex, 2 to 10% slopes	Y
110	Spanaway gravelly sandy loam, 0 to 3% slopes	Y
111	Spanaway gravelly sandy loam, 3 to 15% slopes	Y
112	Spanaway stony sandy loam, 0 to 3% slopes	Y
113	Spanaway stony sandy loam, 3 to 15% slopes	Y
117	Tenino gravelly loam, 3 to 15% slopes	N

*Soils highlighted in yellow are not considered MPG habitat

Attachment A

2. A list of plant species encountered during the survey was recorded and CAO target prairie plants were noted.

The list of plants encountered is found in Appendix C.

3. Confirmation that CAO prairie plants were surveyed for and either found or not found, prairie criteria met or not met, etc. An example statement of your findings could be:

No CAO prairie plants were found.

See Appendix C.

4. If prairie habitat is identified onsite it is regulated pursuant to Tumwater City Code Chapter 16 Environment.. Provide either a GPS map or hand-drawn aerial map indicating location of prairie plants on the parcel in relation to the proposed building area.

No prairie habitat was identified during the survey.

5. A full species list of plants (prairie and non-prairie) found at the time of survey. Attached is a blank checklist and data sheet if you choose to use. Even if no CAO prairie plants were detected, a complete species list of vegetation observed helps characterize site conditions.

A full list of plants encountered are found on the checklist in Appendix C.

6. Color photos of plant species encountered.

See Appendix A.

7. Transect map. If done concurrently with gopher review, you can use the same transect map.

The transect map is located in Appendix B.

8. Oregon white oak trees, if observed onsite, must also be documented, mapped, and included in the prairie plant survey. As with prairie plants, provide either a GPS map or hand-drawn aerial map indicating location of oaks on the parcel in relation to the proposed building area.

No Oregon white oak trees were found on the subject parcel.

9. Mima mounds, if observed onsite, must also be documented, mapped, and included in the prairie plant survey. Provide either a GPS map or hand-drawn aerial map indicating location of Mima mounds on the parcel in relation to the proposed building area.

There are no Mima mounds on the subject parcel.

3.0 CURRENT CONDITIONS AND METHODS

Land Services Northwest conducted a survey on May 8, 2024, walking the area and looking for signs of the MPG and regulated prairie in accordance with the protocol.

The 5.86 parcel is a cleared field with a slope to the north. It is located in an area of predominantly undeveloped parcels.

4.0 RESULTS

No CAO prairie plants, Garry oaks or Mima mounds were found.

Appendix A – Photos

LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

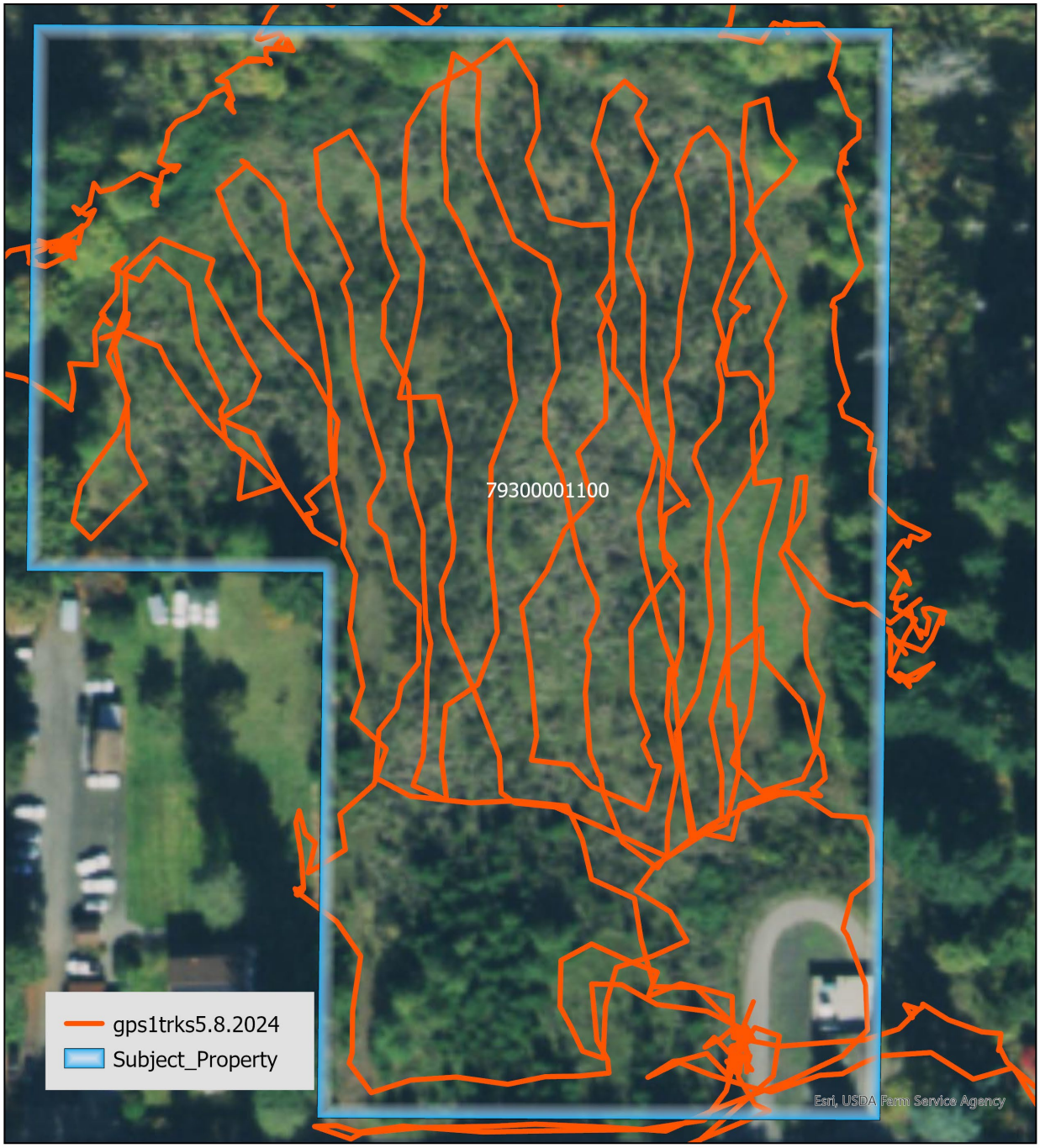
LSNWw5
Project: Tenino LAND
804 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
Oswet a
934 Tumwater Blvd SE, Olympia, WA 98501
LSNWw5
Project: Tenino LAND
Tp1
934 Tumwater Blvd SE, Olympia, WA 98501

LSNWw5
Project: Tenino LAND
Tp2
934 Tumwater Blvd SE, Olympia, WA 98501

Appendix B - Transect Map



N LSNW Land Services Northwest 120 State Avenue NE PMB 190 Olympia,WA 98501	Appendix B Prairie Survey 5.8.24	0 37.5 75 150 Feet

Appendix C - CAO Prairie Data Sheet

2019 Thurston County Critical Areas Ordinance (CAO) Prairie Screening Data Sheet

Parcel Number: 79300001100	**CAO prairie criteria met?** Yes or (No)
Property Owner: Tenino Land Company	**Mima mounds present?** Yes or (No)
Surveyor(s): Alex Callender	**Oaks (*Quercus garryana*) present?** Yes or (No)
Date: 5.8.24	Mature:
Composition of Vegetation:	Sapling:
	Seedling:

X	Target species	Class* (circle)
	Apocynum androsaemifolium	1 2 3 4 5 N/A
	Balsamorhiza deltoidea	Present / Absent
	Bistorta bistortoides	Present / Absent
	Brodiaea coronaria	1 2 3 4 5 N/A
	Camassia leichtlinii	1 2 3 4 5 N/A
	Camassia quamash	Present / Absent
	Carex densa	Present / Absent
	Carex feta	1 2 3 4 5 N/A
	Carex inops ssp. *inops*	1 2 3 4 5 N/A
	Carex tumulicola	1 2 3 4 5 N/A
	Carex unilateralis	1 2 3 4 5 N/A
	Castilleja hispida	1 2 3 4 5 N/A
	Castilleja levisecta	Present / Absent
	Danthonia californica	1 2 3 4 5 N/A
	Delphinium menziesii	1 2 3 4 5 N/A
	Delphinium nuttallii	1 2 3 4 5 N/A
	Deschampsia cespitosa	1 2 3 4 5 N/A
	Deschampsia danthonioides	1 2 3 4 5 N/A
	Dodecatheon hendersonii	1 2 3 4 5 N/A
	Downingia yina	1 2 3 4 5 N/A
	Erigeron speciosus	1 2 3 4 5 N/A
	Eriophyllum lanatum	Cover: ___ m^2 N/A
	Eryngium petiolatum	Present / Absent
	Festuca roemeri (F. idahoensis)	1 2 3 4 5 N/A
	Fragaria virginiana	Cover: 3 m^2 N/A
	Fritillaria affinis	1 2 3 4 5 N/A
	Hieracium scouleri	1 2 3 4 5 N/A
	Hosackia pinnata *(Lotus pinnatus)*	Present / Absent
	Koeleria macrantha (K. cristata)	1 2 3 4 5 N/A
	Leptosiphon bicolor (Linanthus b.)	1 2 3 4 5 N/A
	Lomatium bradshawii	Present / Absent
	Lomatium nudicaule	1 2 3 4 5 N/A
	Lomatium triternatum	1 2 3 4 5 N/A
	Lomatium utriculatum	Present / Absent

	Lupinus albicaulis	1 2 3 4 5 N/A
	Lupinus lepidus var. *lepidus*	1 2 3 4 5 N/A
	Lupinus polyphyllus	1 2 3 4 5 N/A
	Micranthes integrifolia (Saxifraga i.)	Present / Absent
	Micranthes oregana (Saxifraga o.)	1 2 3 4 5 N/A
	Microseris laciniata	Present / Absent
	Perideridia gairdneri	1 2 3 4 5 N/A
	Plagiobothrys figuratus	1 2 3 4 5 N/A
	Plectritis congesta	Present / Absent
	Polemonium carneum	Present / Absent
	Potentilla gracillis	Present / Absent
	Ranunculus alismifolius	1 2 3 4 5 N/A
	Ranunculus occidentalis	Present / Absent
	Ranunculus orthorhynchus	1 2 3 4 5 N/A
	Sericocarpus rigidus	Present / Absent
	Sidalcea malviflora* var. *virgata	Present / Absent
	Silene scouleri	Present / Absent
	Sisyrinchium idahoense	1 2 3 4 5 N/A
	Solidago missouriensis	1 2 3 4 5 N/A
	Solidago simplex (S. spathulata)	1 2 3 4 5 N/A
	Toxicoscordion venenosum var. venenosum (Zigadenus venenosus)	1 2 3 4 5 N/A
	Trifolium willdenowii (T. tridentatum)	1 2 3 4 5 N/A
	Triteleia grandiflora	1 2 3 4 5 N/A
	Triteleia hyacinthina	1 2 3 4 5 N/A
	Veratrum californicum	1 2 3 4 5 N/A
	Veratrum viride	1 2 3 4 5 N/A
	Viola adunca	1 2 3 4 5 N/A
	Viola praemorsa var. *nuttallii*	1 2 3 4 5 N/A

*Species Count Class:
1 = < 25
2 = 25 - 49
3 = 50 - 74
4 = 75 - 100
5 = >100

Prairie Plant Manual:
https://www.thurstoncountywa.gov/planning/planningdocuments/cao-prairie-plant-manual-4.23.2018.pdf

Non-CAO vegetation

	Species or codons (i.e. "HYPRAD" for *Hypochaeris radicata*)	Notes
1	Hairy cats ear (*Hypochaeris radicata*)	
2	Himalayan blackberry (*Rubus armeniacus*)	
3	Ox eye daisey (Leucanthemum vulgare)	
4	Hairy brackenfern *(Pteridium aquilinum)*	
5	Trailing blackberry (Rubus ursinus)	
6	Scotch broom *(Cytisus scoparius)*	
7	Orchard Grass *(Dactylis glomerata)*	
8	Reed canary grass (Phalaris arundinacea)	
9	Hawkweed (Hieracium spp.)	
10	Dovefoot geranioum *(Geranium molle))*	
11	Western dock (Rumex occidentalis)	
12	Bitter dock *(Rumex obtusifolius)*	
13	Common velvetgrass *(Holcus lanatus)*	
14	Red fescue *(Festuca rubra)*	
15	Common chichweed *(Stellaria media)*	

Prairie Habitat Criteria: If at any point at least three target species, totaling in general at least 25 plants each are encountered within about 5 meters of each other (WDFW 2015), the area in question meets the criteria to be established as occurrence of prairie. For certain plants such as WNHP rare plants (indicated here in bold), or species which serves as nectar or host plants for both TCB and either SCC or SGCN butterflies (indicated here with underline), presence is enough to meet prairie habitat criteria for such species, even if their count is less than 25 individual plants. CAO wet and dry prairie plant lists can be found in Tables 24.25-7 and 24.25-8, respectively. More info available at: https://www.thurstoncountywa.gov/planning/Pages/hcp-prairie-review.aspx
Mima mounds and oak habitat definitions can be found in TCC 24.03.010

FRONT ELEVATION

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PRELIMINARY

REAR ELEVATION

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SHEET NUMBER	6
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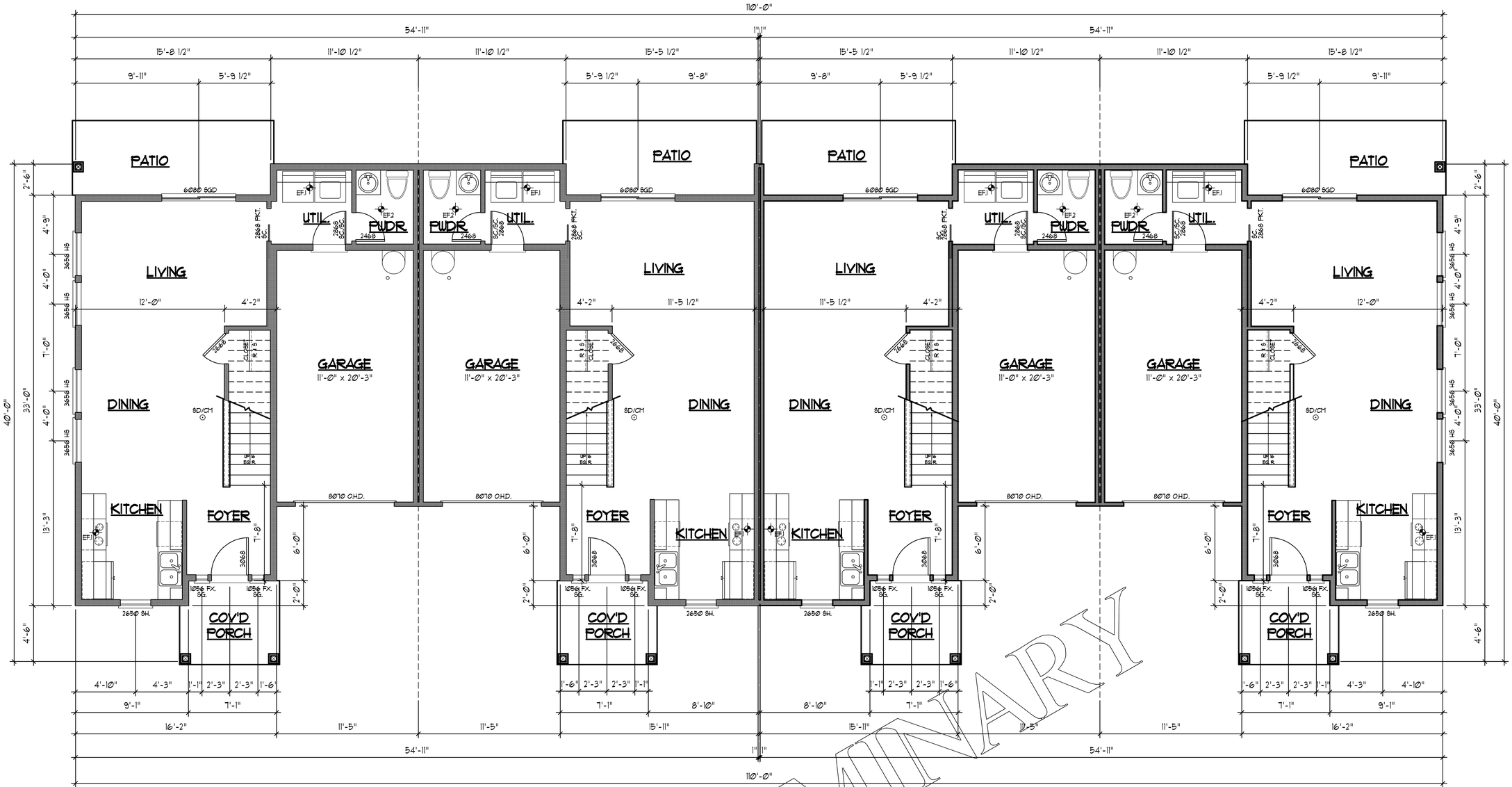

PRELIMINARY

MAIN FLOOR PLAN

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AREA SUMMARY

MAIN FLOOR: 599 SF. PER UNIT
UPPER FLOOR: 853 SF. PER UNIT
TOTAL: 1,452 Sq. Ft. PER UNIT

GARAGE: 224 Sq. Ft. Per Unit

COV'D PORCH, PATIO, & DECK: 123 Sq. Ft. PER UNIT

GLASS AREA: 255 Sq. Ft.
GLAZING PERCENTAGE (GL / FL): 21.2 %

VENTILATION REQUIREMENTS

1	"PANASONIC" FV-11VK3 110CFM .8 SONES	112 CFM @ .25 WS 110 CFM @ .1 WS
2	"PANASONIC" FV-08VK3 80CFM .4 SONES	79 CFM @ .25 WS 80 CFM @ .1 WS

NOTES:
1. USE PANASONIC FV-11VK3 (100 CFM MIN.) @ ALL KITCHEN & WHOLE HOUSE FAN.
2. USE PANASONIC FV-08VK3 (50 CFM MIN.) @ ALL OTHER LOCATIONS.
3. ALL FANS TO VENT DIRECTLY TO OUTSIDE.
4. ALL OTHER REQUIREMENTS OF WSEC MUST BE MET.

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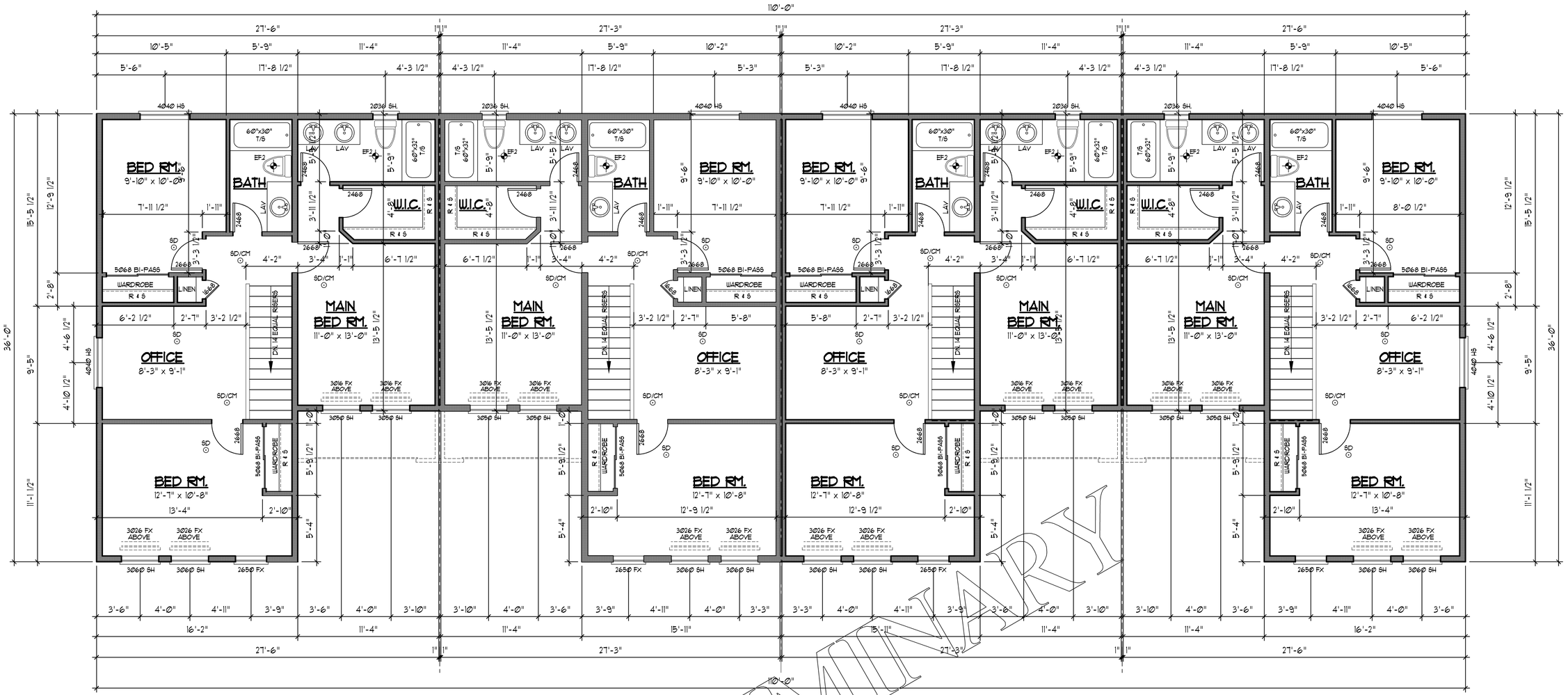

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UPPER FLOOR PLAN

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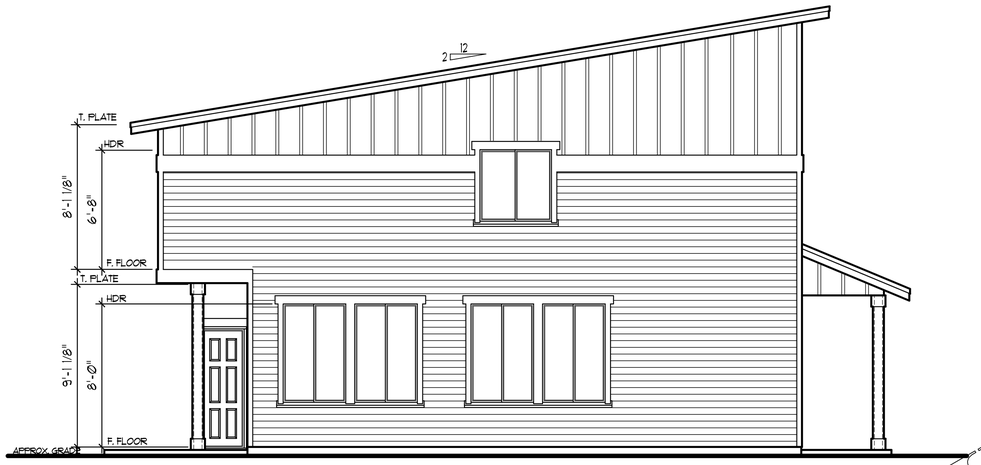

LEFT ELEVATION

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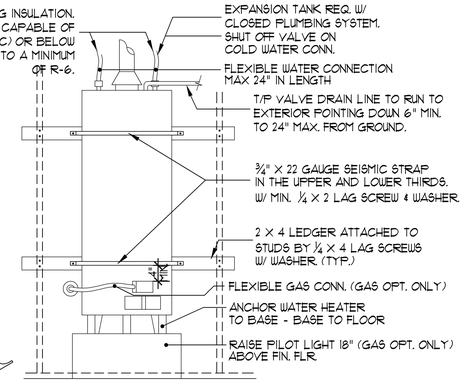
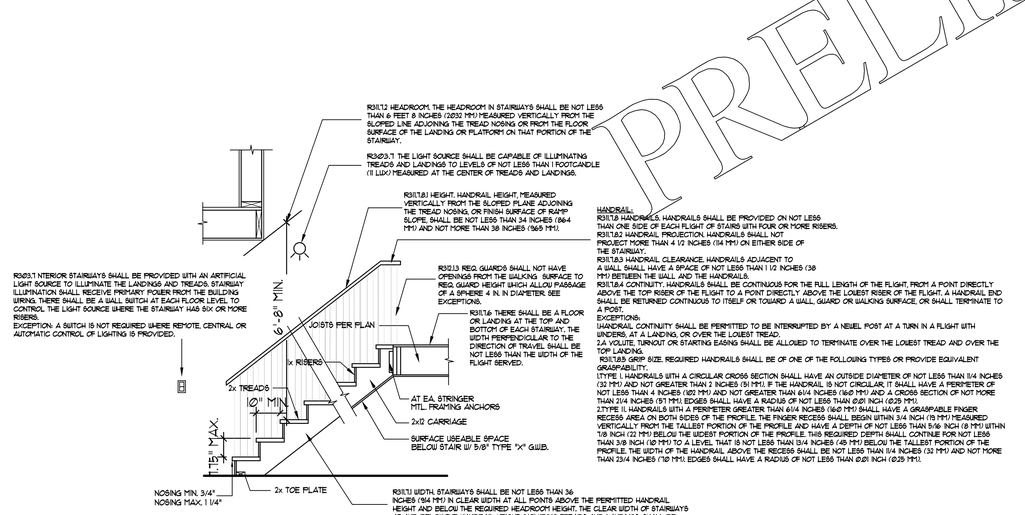
R403.4 MECHANICAL SYSTEM PIPING INSULATION. MECHANICAL SYSTEM PIPING CAPABLE OF CARRYING FLUIDS ABOVE 105°F (41°C) OR BELOW 55°F (13°C) SHALL BE INSULATED TO A MINIMUM OF R-6.



WATER HEATER SUPPORT (A)

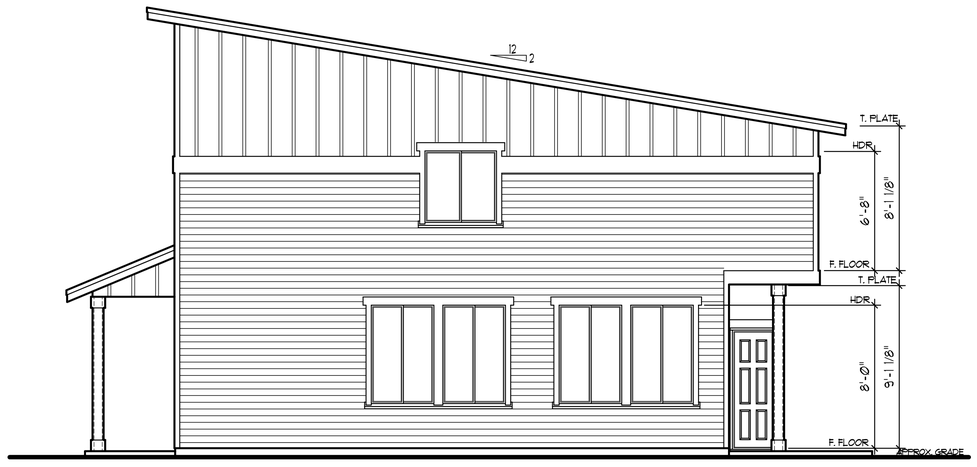
WSEC R403.5.5 WATER HEATER INSTALLATION LOCATION. SERVICE HOT WATER SYSTEMS SHALL BE INSTALLED WITHIN THE BUILDING THERMAL ENVELOPE.
EXCEPTIONS:
1. WHERE THE HOT WATER SYSTEM EFFICIENCY IS GREATER THAN OR EQUAL TO 2.0 UEF.
2. TANKLESS WATER HEATERS.
3. GAS HEAT PUMP WATER HEATERS INTENDED FOR EXTERIOR INSTALLATION.
4. ATMOSPHERIC VENTED GAS WATER HEATERS.
R403.5.6 WATER HEATER INSULATION. ALL TANK-TYPE WATER HEATERS IN UNCONDITIONED SPACES, OR ON CONCRETE FLOORS IN CONDITIONED SPACES, SHALL BE PLACED ON AN INSULATED SURFACE WITH A MINIMUM THERMAL RESISTANCE OF R-10, AND A MINIMUM COMPRESSIVE STRENGTH OF 40 PSI OR ENGINEERED TO SUPPORT THE APPLIANCE.



HANDRAIL:
R311.7.8 HANDRAILS. HANDRAILS SHALL BE PROVIDED ON NOT LESS THAN ONE SIDE OF EACH FLIGHT OF STAIRS WITH FOUR OR MORE RISERS.
R311.7.8.2 HANDRAIL PROJECTION. HANDRAILS SHALL NOT PROJECT MORE THAN 4 1/2 INCHES (114 MM) ON EITHER SIDE OF THE STAIRWAY.
R311.7.8.3 HANDRAIL CLEARANCE. HANDRAILS ADJACENT TO A WALL SHALL HAVE A SPACE OF NOT LESS THAN 1 1/2 INCHES (38 MM) BETWEEN THE WALL AND THE HANDRAILS.
R311.7.8.4 CONTINUITY. HANDRAILS SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE FLIGHT, FROM A POINT DIRECTLY ABOVE THE TOP RISER OF THE FLIGHT TO A POINT DIRECTLY ABOVE THE LOWEST RISER OF THE FLIGHT. A HANDRAIL END SHALL BE RETURNED CONTINUOUS TO ITSELF OR TOWARD A WALL, GUARD OR BALKING SURFACE, OR SHALL TERMINATE TO A POST.
EXCEPTIONS:
1.HANDRAIL CONTINUITY SHALL BE PERMITTED TO BE INTERRUPTED BY A NEWEL POST AT A TURN IN A FLIGHT WITH WINDERS, AT A LANDING, OR OVER THE LOWEST TREAD.
2.A VOLUTE, TURNOUT OR STARTING EASING SHALL BE ALLOWED TO TERMINATE OVER THE LOWEST TREAD AND OVER THE TOP LANDING.
R311.7.8.5 GRIP SIZE. REQUIRED HANDRAILS SHALL BE OF ONE OF THE FOLLOWING TYPES OR PROVIDE EQUIVALENT GRASPABILITY.
1.TYPE I. HANDRAILS WITH A CIRCULAR CROSS SECTION SHALL HAVE AN OUTSIDE DIAMETER OF NOT LESS THAN 1¼ INCHES (32 MM) AND NOT GREATER THAN 2 INCHES (51 MM). IF THE HANDRAIL IS NOT CIRCULAR, IT SHALL HAVE A PERIPHERY OF NOT LESS THAN 4 INCHES (102 MM) AND NOT GREATER THAN 6¼ INCHES (160 MM) AND A CROSS SECTION OF NOT MORE THAN 2¼ INCHES (57 MM). EDGES SHALL HAVE A RADIUS OF NOT LESS THAN Ø.01 INCH (0.25 MM).
2.TYPE II. HANDRAILS WITH A PERIPHERY GREATER THAN 6¼ INCHES (160 MM) SHALL HAVE A GRASPABLE FINGER RECESS AREA ON BOTH SIDES OF THE PROFILE. THE FINGER RECESS SHALL BEGIN WITHIN 3/4 INCH (19 MM) MEASURED VERTICALLY FROM THE TALLEST PORTION OF THE PROFILE AND HAVE A DEPTH OF NOT LESS THAN 5/16 INCH (8 MM) WITHIN 7/8 INCH (22 MM) BELOW THE WIDEST PORTION OF THE PROFILE. THIS REQUIRED DEPTH SHALL CONTINUE FOR NOT LESS THAN 3/8 INCH (10 MM) TO A LEVEL THAT IS NOT LESS THAN 1¾ INCHES (45 MM) BELOW THE TALLEST PORTION OF THE PROFILE. THE WIDTH OF THE HANDRAIL ABOVE THE RECESS SHALL BE NOT LESS THAN 1¼ INCHES (32 MM) AND NOT MORE THAN 2¾ INCHES (70 MM). EDGES SHALL HAVE A RADIUS OF NOT LESS THAN Ø.01 INCH (0.25 MM).

STAIR CONSTRUCTION DETAIL (B)

NTS. (SIMILAR)



RIGHT ELEVATION

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SHEET NUMBER 7
7 OF 8

December 12, 2024

Tenino Land Company, LLC

17348 Marsh Street SW

Tenino, WA 98589

RE: **Water Availability – Parcels # 79300001100, 79300001200**
Sent via email to Nick Wheeler nick.wheeler@jsa-civil.com

Dear Applicant,

The City of Tumwater, WA PWSID #89700Q, is pleased to accommodate your request for water and sewer connection and service to the above parcels sited at 715 Dennis Street SE and 934 Tumwater Blvd SE. The parcels are zoned Single Family Residential - Low Density and Medium Density, respectively. The requested services can be accommodated by the City under the following conditions:

1. Sewer and water extensions to serve the development will be per the City of Tumwater's comprehensive plans.
2. Easements necessary for utility maintenance shall be dedicated to the City of Tumwater in advance of making the physical connection to the water and sewer systems.
3. All connection/latecomer fees, if any, are due at time of building permit issuance or subdivision occurs.
4. Existing water wells or septic systems, if any, will be legally decommissioned.
5. Follow and comply with all standard city requirements.

This letter serves as the City's Certificate of Water and Sewer Availability for the proposed 24 single-family residential townhomes for domestic water and sewer uses. The project has been approved for **24 Water ERUs and 24 Wastewater ERUs**, per TMC 13.08 and TMC 13.04. If additional consumptive needs for the project are identified, please notify us as soon as possible.

This agreement will expire 180 days after the date shown above. This agreement will remain valid for the duration of permit approval coverage, including extensions. Additional information may be required to accurately determine wastewater connection fees. If you have further questions, please contact Jared Crews at 360-754-4140.

Warm regards,

Carrie Gillum

Carrie Gillum
Water Resources Specialist

cc: Dan Smith, Water Resources & Sustainability Director
Jared Crews, Engineer II, Jeff Query, Engineer II

JSA CIVIL

Engineering | Planning | Management

Technical Memorandum

To: City of Tumwater

From: Nick Wheeler

Date: May 21, 2025

Subject: Project Narrative

Project: Tumwater Boulevard Townhome Condominiums

City of Tumwater Staff,

The purpose of this narrative is to outline the improvements proposed by the Tumwater Boulevard Townhome Condominiums development located at 715 Dennis Street SE on Thurston County TPNs 71300001100 and 79300001200. The project proposes 6 townhome-style condominium buildings, including a new public roadway, underground utilities, landscaping, and stormwater facilities. The following memorandum has been prepared in support of the project and is intended to provide an overall summary of the project and to outline the project's compliance with the City of Tumwater's development standards.

Existing Conditions

The subject parcels, Thurston County TPNs 71300001100 and 7900001200, are situated north of Tumwater Blvd SE and are currently undeveloped aside from a City of Tumwater sewer lift station located within an easement which will remain in place. Access to the site is currently provided by the lift station maintenance driveways off Tumwater Blvd SE. Existing vegetation consists of mixed grasses, Evergreen trees, shrubs, and brush.

Proposed Development & Zoning

The project proposes 24 townhome-style condominiums across 6 buildings. Each building will be located on a separate tax parcel with a separate condo association (4 single-family dwelling units in each). Access will be provided by a new public roadway with curb, gutter, and sidewalks, extending from Tumwater Blvd SE and including public water and sanitary sewer extensions to serve the development. The site is zoned SFM Single-Family Medium Density Residential and is regulated by the City's SFM2 zoning overlay, as it is located within Zone 3 of the Olympia Regional Airport runways. The project will be permitted through the City of Tumwater's Binding Site Plan and Planned Unit Development processes. Common stormwater and open space tracts are proposed and include amenities to meet the requirements of a Planned Unit Development. Currently, the project proposes a playground and half-court basketball court in a common tract at the north end of the site.

In addition to the condo associations for each building, a homeowner's association (HOA) will be created through the development of this project. The HOA will provide for the operation and maintenance of the shared spaces which include open space amenities and landscaping outside of the specific lot areas. The intent of the project is for each single-family condominium unit to be sold to the resident or other entity following the construction of the residences. The tax lots will remain under common ownership of the

condo associations and the common areas will be governed by the HOA. The project is projected to start in 2025 and be completed by 2026 pending permit approvals.

- Open Space: The project requires 15% of the gross site area be set aside for open space. The total site area is 10.77 acres, of which a minimum of 1.62 acres is required to be open space. Of this value, 50% of the area is to be active open space, with the remainder as passive open space.
- Summary of Minimum Open Space Requirements:
    - 0.81 acres active open space meeting *17.12.210.G.1 (i.e. children's play equipment, sport court, open field, etc.)*
    - 0.81 acres passive open space meeting *17.12.210.G.3 (i.e. walking trails, plazas, picnic facilities, storm ponds, wetland buffers, etc.)*
- Summary of Provided Amenities to meet Open Space Requirements:
    - A children's play structure, ½ court basketball court, open field area, and two disc golf basket targets are being provided within the designated active open space area totaling 0.84 acres of active open space.
    - Wetland buffer enhancement and natural habitat area are being provided to meet the passive open space requirement totaling 7.67 acres of passive open space.

PUD Public Benefit
This project is developing over 20 units, therefore 2 points from the list in TMC 18.36.010 are required.

Point One – Enhanced Usable Parks & Open Space:
TMC Section 18.36.010.B.1 "*One point: provide enhanced usable parks and open space as a result of the planned unit development. Both the applicant and the city shall agree upon the location, size, and extent of the enhanced usable parks and open space.*"

- This project is proposing a walking path through the open space area, a viewing platform with informational wetland signage, benches, disc golf basket targets, and a half-court basketball area. This is in addition to the children's play structure that is required under active open space requirements.

Point Two – Critical Areas Enhancement:
TMC Section 18.36.010.B.3 "*One point: Go significantly beyond the minimum requirements for critical area protections to preserve, enhance, or rehabilitate critical areas and buffers in the planned unit development. Both the applicant and the city shall agree upon the location, size, and extent of the additional protection, enhancement, or rehabilitation.*"

- This project proposes to enhance the prairie and wetland habitat in the vicinity of Wetland A. Improvements include a one-time removal of a large area of Himalayan blackberry and Scotch broom (invasive plant species). Native plants will be added in the area where the invasive species are removed to improve screening, food resources, nutrient uptake, and beneficial uses of the water that benefits the area fauna. Three wood duck boxes, three bat boxes, and two Martin houses will be installed in the trees at the edge of Wetland A to enhance wildlife habitat at the site.

Overall, the enhanced open space amenities and critical areas enhancement are proposed to meet the PUD criteria for a combined total of two points.

Airport Overlay – SFM2, Zone 3

The project site is located within Zone 3 of the Olympia Regional Airport runway overlay. Site development must comply with TMC Section 18.32.080.A Residential Standards:

Residential land divisions of one acre or more located within compatible use zones 3, 4 or 5 shall meet the following standards:

1. *The land division is approved as a clustered development with the residential lots located as far away from the runway centerline as possible;*
    - The site is encumbered by critical areas (wetlands) and their associated buffers. The land division and residential development will be clustered within the developable upland areas to limit impacts to critical areas.
2. *An open space area is provided on the project site. The purpose of this open space area is to provide sites that are suitable for the emergency landing of aircraft. The required minimum size of this open space area is one-half acre or ten percent of the gross site area, whichever is greater. This open space area may be used to fulfill other applicable open space/park requirements for residential developments; provided, that active recreation facilities and aboveground stormwater ponds and infiltration facilities shall not be located in this open space area. This open space area should be contiguous to other open space areas within or adjacent to the project site, and may include wetlands and their buffers and other critical areas.*
    - The project proposes a total contiguous open space area of approximately 8.51 acres (79% of the project site). This is comprised of 0.84 acres of recreational active open space and the remainder classified as passive open space including critical areas (wetlands and buffers) which will remain undeveloped.

Critical Areas

Thurston County GIS mapping indicates the presence of on-site wetlands, hydric soils, and a combination of more- & less-preferred Mazama Pocket Gopher soils. The site is mapped within a Class 1 Critical Aquifer Recharge Area (CARA), Class I & III Agricultural CARA, and 5- & 10-year wellhead protection areas. The site is impacted by two wetlands which have been delineated and rated for the development. The on-site wetlands include Wetland A, a large depressional wetland located to the north and west, and Wetland B, a depressional wetland that drains to Wetland A via an existing culvert and ditch. The project proposes a wetland buffer reduction through buffer enhancement, please refer to the enclosed Wetland Delineation Report & Assessment for additional information. A Mazama Pocket Gopher & Regulated Prairie Absence Report has also been prepared by a professional biologist and is enclosed for review.

Landscaping

The project site abuts Light Industrial (LI) land to the west and a City of Tumwater sanitary sewer pump station located along the southern portion of the site. A Type 1 landscape buffer will be installed along the western boundary and around the perimeter of the sewer pump station easement to provide a sight barrier in accordance with TMC 18.47.050.C.1. The project will also include street trees along the Tumwater Blvd frontage and the new internal roadway to meet the City's minimum design requirements. Please refer to the enclosed preliminary landscape plan for additional information.

Townhome Design Guidelines

City staff identified Townhome Design Guidelines during the Feasibility Site Plan Review meeting the project must adhere to. Please find the applicable Design Guidelines listed below with our responses bulleted beneath each:

2.B.3.2 - Pedestrian circulation in residential development

a. *Pathways between dwelling units and the street are required. Such pathways between the street and buildings fronting on the street should be in a straight line. Exceptions may be allowed by the Director where steep slopes prevent a direct connection or where an indirect route would enhance the design and/or use of a common open space.*
    - Entry walkways are proposed to connect the dwelling units to the frontage sidewalk.

b. *The pedestrian circulation system shall connect all main entrances on the site. For townhouses or other residential units fronting the street, the sidewalk may be used to meet this standard. For multifamily developments, pedestrian connections to other areas of the site, such as parking areas, recreational areas, common outdoor areas, and any pedestrian amenities shall be required.*
    - All main entrances are connected to the sidewalk; recreational areas are connected to the sidewalk via pedestrian pathways within the open space areas.

c. *Direct pedestrian access shall be provided to adjacent publicly accessible parks, open space, and trails, and transit, rideshare and bicycle storage facilities.*
    - Pedestrian access is provided via sidewalks and pathways connecting the residential units, open space, and trails.

d. *External stairways or elevated walkways which provide pedestrian access to dwelling units located above the ground floor are prohibited. The director may allow exceptions for external stairways or walkways located in or facing interior courtyard areas provided they do not compromise visual access from dwelling units into the courtyard. This is not intended to prohibit skywalks or pedestrian bridges between buildings.*
    - No external stairways or elevated walkways are proposed by the project.

2.B.11 - Special Guidelines for Ground-Related Residences

- *To ensure that townhouse developments enhance the character of the street.*
    - The project proposes curb, gutter, and detached sidewalks with landscape planter strips along the roadway frontage to enhance the character of the street.
- *To reduce the impact of garages and driveways on the pedestrian environment.*
    - The condominium buildings will be constructed in blocks of 4 dwelling units; the driveways and garages will be grouped in sets of two (2) to reduce the impact of garages and driveways along the roadway frontage.
- *To reduce the apparent bulk and scale of townhouse buildings.*
    - The proposed buildings are two-story townhome-style condominiums; building design includes modulation of the height and depth of the building façades, as well as varied building materials and textures to reduce the scale of the buildings.
- *To promote infill development compatible and complementary to the surrounding neighborhood.*

- The project is proposed on an undeveloped site. The development has been designed to be compatible with City Design Guidelines and Tumwater Municipal Code to complement the surrounding area.

- *To promote attractive, safe and functional design that addresses the needs of future residents and is properly integrated into the surrounding neighborhood environment.*
  - The project proposes landscaping, active and passive open space, and enhanced critical areas to address the needs of future residents and integrate into the surrounding environment.

2.B.11.1 - Townhouse Street Fronts (Street Access, Pedestrian Entries (porch, planted area, garage door), Garage Configuration)

a. *Street access. Townhouses and other ground-related residences fronting a street must all have individual ground-related entries accessible from the street. Configurations where enclosed rear yards back up to a street are prohibited. The Director may allow exceptions to these rules depending on the nature of the site and where design treatments have been included to enhance the character of the street.*
   - The project proposes individual ground-related entries with pedestrian pathways to the public way; no enclosed rear yards are proposed to back up to a street.

b. *Pedestrian entries. New developments must emphasize individual pedestrian entrances over private garages to the extent possible by using the following three measures:*

   1) *Provide a porch, at least 6 feet wide by 4 feet deep, or other architectural weather protection that provides cover for a person entering the unit and a transitional space between outside and inside the dwelling.*
      - Covered porches exceeding the minimum dimensional requirements are proposed; please see the enclosed site plan for additional information.

   2) *Provide a planted area in front of each pedestrian entry of at least twenty square feet in area, with no dimension less than four feet. Provide a combination of shrubs or groundcover and a street tree.*
      - Landscape beds of twenty square feet or more will be installed as the individual buildings are constructed.

   3) *Set the garage door (if applicable) at least 5 feet further from the street than the building entrance.*
      - Garage doors are proposed six (6) feet further from the street than the front entry doors for the individual condominium residences.

c. *Garage configuration. For any townhouse configuration where the primary pedestrian access is off the same facade as vehicular access, developments shall incorporate singlewidth parking configurations for at least fifty percent of the units. This will minimize the impact of garage doors on the pedestrian environment. The director may grant departures to this provision provided design treatments effectively minimize the impacts of garage doors on the pedestrian environment.*
   - All of the proposed driveways are a single-width configuration.

2.B.11.2 - Driveways on private internal streets

Where townhouse units are served by private internal streets, developments are encouraged to limit the depth of driveways between the streets and the garage wall to de-emphasize vehicular access. Driveway depths of five to ten feet are appropriate to allow the maneuverability and provide space to include the required landscaping and entry elements for each unit. The shallow width also discourages residents from parking cars in their driveways. By default, this encourages residents to keep their vehicles in their garage. Additional surface parking spots should be scattered around the development to provide space for guests.

- Not applicable; private internal streets are not proposed by the project.

Signature Roads:

2.B.2.2.b.2 Appearance

b. On Signature Roads, development must adhere to the following:

(2) Residential buildings on non-arterials located within 30 feet of the ROW must feature (note, the following are in addition to the guidelines that all residential buildings follow, such as 2.C.1.3 Residence Faces Fronting on Pedestrian Pathways and Open Spaces):

i. No garages or storage space along the front facade on the ground floor,

- The project does not propose garages or storage space along the front façade of the buildings facing Tumwater Boulevard, a Signature Road.

ii. At least 15% transparency on the front facade or Type 1 or Type 2 landscaping per TMC 18.47.040,

- The project proposes 15% transparency on the façade fronting Tumwater Blvd.

iii. A covered porch, stoop, or patio for individual unit entries (preferred), or a clearly recognizable, covered shared entry.

- Separate covered porches are proposed for each of the residential units.

2.B.2.3.b Parking Orientation

b. On Signature Roads, all parking must be located beside, behind, underneath, or above the ground floor use facing the street (i.e., no parking is allowed between the building and the street). Parking is limited to 50% of the street front or 65 feet, whichever is narrower. Any parking areas along the street must be screened (see Section 2.D.2.2).

- No parking areas are proposed between the buildings and Tumwater Boulevard by the project.

2.B.2.5.b.2 Space between building and street edge

b. On Signature Roads, development setbacks are as follows:
(2) Residential building requirements:

i. Front maximum: 25 feet (10 to 15 feet is preferred)

- The proposed front setbacks are ± 15.5’ to the covered porches ± 20’ to the dwelling units.

ii. Front minimum: 10 feet (unless Director approves a design that accomplishes the public to private transition goals in a narrower or no setback (e.g., with a recessed entry and ground floor windows above eye level)). Note, porches and stoops may protrude into the setback.

- The proposed front setbacks are ± 15.5’ to the covered porches ± 20’ to the dwelling units.

iii. *Side: Zero-lot-line is encouraged in multifamily zones.*

- The project proposes 5’ side lot setbacks between the buildings and zero-lot-line setbacks along the adjoining walls.

2.B.2.6.b Streetscape

b. On Signature Roads, development must adhere to the following streetscape standards:

(1) Landscape strip between sidewalk and street:

i. Minimum 5 feet unless the Director determines that trees in grates meet the intent of buffering pedestrians from the street and enclosing the street with trees. The Director will identify the street edge if there is none existing or if there is a planned street improvement.

- The project proposes a ± 6’ landscape strip between the sidewalk and street along Tumwater Boulevard.

ii. Street trees provided at least every 40 feet (average) on center.

- Street trees are proposed at ± 30’ (average) on center along Tumwater Boulevard.

(2) Sidewalk: Minimum 6 feet clear walking space. If a building more than 3 stories tall abuts the sidewalk, there must be either an additional 3 foot vegetative strip between the sidewalk and the building or the sidewalk width increased 3 additional feet.

- A 6’ pedestrian sidewalk is proposed along the project’s Tumwater Boulevard frontage.

2.B.2.7 Public to private transition

*a. On **Signature Roads**, residential ground floors with individual unit entries (in addition to adhering to **Section 2.C.1.3 Residence Faces Fronting on Pedestrian Pathways and Open Spaces**) must be raised at least 2 feet above the sidewalk grade and basement unit floors must be at least 2 feet below the sidewalk grade unless the Director determines it infeasible.*

- Not applicable; the project does not propose any entries facing Tumwater Blvd.

Wet Utilities

City of Tumwater water and sanitary sewer mains will be extended along the Tumwater Blvd frontage and into the site, following the roadway corridor. The City of Tumwater previously confirmed system capacity to serve the new units proposed by the project; please find the Water-Sewer Availability Letter enclosed. New fire hydrant locations were identified by City staff during the Feasibility Site Plan Review meeting on February 12, 2025, and have been included on the utility design plans. Please refer to the enclosed preliminary civil engineering plans for additional information.

Dry Utilities

Power will be provided by Puget Sound Energy (PSE) to serve the project. Primary power will be extended along the new roadway during construction of the civil site improvements and will be connected to the future residential buildings as they are constructed. Communication services may include Comcast and/or Century Link, with final connections made once requested by residents as the future condominiums are constructed and occupied.

JSA CIVIL
Engineering | Planning | Management

Stormwater

Stormwater design has been prepared to comply with the minimum requirements of the 2022 City of Tumwater Drainage Design and Erosion Control Manual (DDECM). Storm runoff from the frontage improvements on Tumwater Blvd, the new roadway, and individual lots will be collected and dispersed to the existing natural flow path which enters the existing on-site wetland(s). Please refer to the enclosed preliminary stormwater site plan and civil engineering plans for additional information.

Thank you for accepting this project narrative for the Tumwater Blvd Townhome Condominiums project. Please contact me with any questions or comments.

Respectfully,

Nick Wheeler

Digitally signed by Nick Wheeler
DN: C=US, E=nick.wheeler@jsa-civil.com, O="JSA Civil, LLC", CN=Nick Wheeler
Location: Tuwmater, WA
Reason: I attest to the accuracy and integrity of this document
Contact Info: nick.wheeler@jsa-civil.com
Date: 2025.05.21 16:39:26-07'00'

Nick Wheeler
JSA Civil, LLC
nick.wheeler@jsa-civil.com

First American Title™ Exhibit A	**First American Title Insurance Company** **673 Woodland Square Loop SE, #407** **Lacey, WA 98503** File No: 4299-4221265

EXHIBIT A

LEGAL DESCRIPTION: Real property in the County of Thurston, State of Washington, described as follows:

Parcel A: Lot 3 of Thurston County large Lot No. LL 0605, according to declaration recorded May 8, 1992 under Recording No. 9205080108, in Thurston County, Washington. Parcel b: Lot 12 of THOMPSON'S ADDITION TO BRIGHTON PARK, according to plat recorded in volume 7 of plats at Page(s) 29 1/2, in Thurston County, Washington; together with the Westerly 30 feet of vacated Thompson Street adjoining or abutting on the East, which upon vacation, attached to said premises by operation of law, pursuant to Resolution No. 5872 adopted June 6, 1978.

Situs Address: 715 Dennis St SE, 934 Tumwater Blvd SE, Tumwater, WA 98501
Tax Parcel ID No. 79300001100 and 79300001200

_____	_____
BUYER	SELLER
_____	_____
BUYER	SELLER

First American Title™

First American Title Insurance Company

673 Woodland Square Loop SE, #407
Lacey, WA 98503

November 20, 2024

Todd Hansen
DRP Holdings LLC
17348 Marsh Street SW
Tenino , WA 98589

Phone: (360)870-3580
Fax:

Title Officer:	Tracy Comas
Phone:	(360)350-6782
Fax No.:	(866)343-5409
E-Mail:	Title.Thurston.WA@FirstAM.com
Order Number:	4221265

Escrow Number: 4221265

Buyer:

Owner:

Property: 715 Dennis St SE and 934 Tumwater Blvd SE
Tumwater, Washington 98501

Attached please find the following item(s):

Guarantee

Thank You for your confidence and support. We at First American Title Insurance Company maintain the fundamental principle:

Customer First!

First American Title™

Guarantee

Subdivision Guarantee

ISSUED BY
First American Title Insurance Company

GUARANTEE NUMBER
5003353-4221265

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE LIMITS OF LIABILITY AND THE CONDITIONS AND STIPULATIONS OF THIS GUARANTEE,

FIRST AMERICAN TITLE INSURANCE COMPANY
a Nebraska corporation, herein called the Company

GUARANTEES

DRP Holdings LLC

the Assured named in Schedule A against actual monetary loss or damage not exceeding the liability stated in Schedule A, which the Assured shall sustain by reason of any incorrectness in the assurances set forth in Schedule A.

FIRST AMERICAN TITLE INSURANCE COMPANY

By: _____
Kenneth D. DeGiorgio, President

By: _____
Lisa W. Cornehl, Secretary

This jacket was created electronically and constitutes an original document

Item 2a.

SCHEDULE OF EXCLUSIONS FROM COVERAGE OF THIS GUARANTEE

1. Except to the extent that specific assurances are provided in Schedule A of this Guarantee, the Company assumes no liability for loss or damage by reason of the following:
   (a) Defects, liens, encumbrances, adverse claims or other matters against the title, whether or not shown by the public records.
   (b) (1) Taxes or assessments of any taxing authority that levies taxes or assessments on real property; or, (2) Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not the matters excluded under (1) or (2) are shown by the records of the taxing authority or by the public records.
   (c) (1) Unpatented mining claims; (2) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (3) water rights, claims or title to water, whether or not the matters excluded under (1), (2) or (3) are shown by the public records.
2. Notwithstanding any specific assurances which are provided in Schedule A of this Guarantee, the Company assumes no liability for loss or damage by reason of the following:
   (a) Defects, liens, encumbrances, adverse claims or other matters affecting the title to any property beyond the lines of the land expressly described in the description set forth in Schedule (A), (C) or in Part 2 of this Guarantee, or title to streets, roads, avenues, lanes, ways or waterways to which such land abuts, or the right to maintain therein vaults, tunnels, ramps or any structure or improvements; or any rights or easements therein, unless such property, rights or easements are expressly and specifically set forth in said description.
   (b) Defects, liens, encumbrances, adverse claims or other matters, whether or not shown by the public records; (1) which are created, suffered, assumed or agreed to by one or more of the Assureds; (2) which result in no loss to the Assured; or (3) which do not result in the invalidity or potential invalidity of any judicial or non-judicial proceeding which is within the scope and purpose of the assurances provided.
   (c) The identity of any party shown or referred to in Schedule A.
   (d) The validity, legal effect or priority of any matter shown or referred to in this Guarantee.

GUARANTEE CONDITIONS AND STIPULATIONS

1. Definition of Terms.
The following terms when used in the Guarantee mean:
(a) the "Assured": the party or parties named as the Assured in this Guarantee, or on a supplemental writing executed by the Company.
(b) "land": the land described or referred to in Schedule (A)(C) or in Part 2, and improvements affixed thereto which by law constitute real property. The term "land" does not include any property beyond the lines of the area described or referred to in Schedule (A)(C) or in Part 2, nor any right, title, interest, estate or easement in abutting streets, roads, avenues, alleys, lanes, ways or waterways.
(c) "mortgage": mortgage, deed of trust, trust deed, or other security instrument.
(d) "public records": records established under state statutes at Date of Guarantee for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without knowledge.
(e) "date": the effective date.

2. Notice of Claim to be Given by Assured Claimant.
An Assured shall notify the Company promptly in writing in case knowledge shall come to an Assured hereunder of any claim of title or interest which is adverse to the title to the estate or interest, as stated herein, and which might cause loss or damage for which the Company may be liable by virtue of this Guarantee. If prompt notice shall not be given to the Company, then all liability of the Company shall terminate with regard to the matter or matters for which prompt notice is required; provided, however, that failure to notify the Company shall in no case prejudice the rights of any Assured unless the Company shall be prejudiced by the failure and then only to the extent of the prejudice.

3. No Duty to Defend or Prosecute.
The Company shall have no duty to defend or prosecute any action or proceeding to which the Assured is a party, notwithstanding the nature of any allegation in such action or proceeding.

4. Company's Option to Defend or Prosecute Actions; Duty of Assured Claimant to Cooperate.
Even though the Company has no duty to defend or prosecute as set forth in Paragraph 3 above:
(a) The Company shall have the right, at its sole option and cost, to institute and prosecute any action or proceeding, interpose a defense, as limited in (b), or to do any other act which in its opinion may be necessary or desirable to establish the title to the estate or interest as stated herein, or to establish the lien rights of the Assured, or to prevent or reduce loss or damage to the Assured. The Company may take any appropriate action under the terms of this Guarantee, whether or not it shall be liable hereunder, and shall not thereby concede liability or waive any provision of this Guarantee. If the Company shall exercise its rights under this paragraph, it shall do so diligently.
(b) If the Company elects to exercise its options as stated in Paragraph 4(a) the Company shall have the right to select counsel of its choice (subject to the right of such Assured to object for reasonable cause) to represent the Assured and shall not be liable for and will not pay the fees of any other counsel, nor will the Company pay any fees, costs or expenses incurred by an Assured in the defense of those causes of action which allege matters not covered by this Guarantee.
(c) Whenever the Company shall have brought an action or interposed a defense as permitted by the provisions of this Guarantee, the Company may pursue any litigation to final determination by a court of competent jurisdiction and expressly reserves the right, in its sole discretion, to appeal from an adverse judgment or order.
(d) In all cases where this Guarantee permits the Company to prosecute or provide for the defense of any action or proceeding, an Assured shall secure to the Company the right to so prosecute or provide for the defense of any action or proceeding, and all appeals therein, and permit the Company to use, at its option, the name of such Assured for this purpose. Whenever requested by the Company, an Assured, at the Company's expense, shall give the Company all

reasonable aid in any action or proceeding, securing evidence, obtaining witnesses, prosecuting or defending the action or lawful act which in the opinion of the Company may be necessary or desirable to establish the title to the estate or interest as stated herein, or to establish the lien rights of the Assured. If the Company is prejudiced by the failure of the Assured to furnish the required cooperation, the Company's obligations to the Assured under the Guarantee shall terminate.

5. Proof of Loss or Damage.

In addition to and after the notices required under Section 2 of these Conditions and Stipulations have been provided to the Company, a proof of loss or damage signed and sworn to by the Assured shall be furnished to the Company within ninety (90) days after the Assured shall ascertain the facts giving rise to the loss or damage. The proof of loss or damage shall describe the matters covered by this Guarantee which constitute the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage. If the Company is prejudiced by the failure of the Assured to provide the required proof of loss or damage, the Company's obligation to such assured under the Guarantee shall terminate. In addition, the Assured may reasonably be required to submit to examination under oath by any authorized representative of the Company and shall produce for examination, inspection and copying, at such reasonable times and places as may be designated by any authorized representative of the Company, all records, books, ledgers, checks, correspondence and memoranda, whether bearing a date before or after Date of Guarantee, which reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the Assured shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect and copy all records, books, ledgers, checks, correspondence and memoranda in the custody or control of a third party, which reasonably pertain to the loss or damage. All information designated as confidential by the Assured provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the Assured to submit for examination under oath, produce other reasonably requested information or grant permission to secure reasonably necessary information from third parties as required in the above paragraph, unless prohibited by law or governmental regulation, shall terminate any liability of the Company under this Guarantee to the Assured for that claim.

6. Options to Pay or Otherwise Settle Claims: Termination of Liability.

In case of a claim under this Guarantee, the Company shall have the following additional options:

(a) To Pay or Tender Payment of the Amount of Liability or to Purchase the Indebtedness.

The Company shall have the option to pay or settle or compromise for or in the name of the Assured any claim which could result in loss to the Assured within the coverage of this Guarantee, or to pay the full amount of this Guarantee or, if this Guarantee is issued for the benefit of a holder of a mortgage or a lienholder, the Company shall have the option to purchase the indebtedness secured by said mortgage or said lien for the amount owing thereon, together with any costs, reasonable attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of purchase.

Such purchase, payment or tender of payment of the full amount of the Guarantee shall terminate all liability of the Company hereunder. In the event after notice of claim has been given to the Company by the Assured the Company offers to purchase said indebtedness, the owner of such indebtedness shall transfer and assign said indebtedness, together with any collateral security, to the Company upon payment of the purchase price.

Upon the exercise by the Company of the option provided for in Paragraph (a) the Company's obligation to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosecution of any litigation for which the Company has exercised its options under Paragraph 4, and the Guarantee shall be surrendered to the Company for cancellation.

(b) To Pay or Otherwise Settle With Parties Other Than the Assured or With the Assured Claimant.

To pay or otherwise settle with other parties for or in the name of an Assured claimant any claim assured against under this Guarantee, together with any costs, attorneys' fees and expenses incurred by the Assured claimant which were authorized by the Company up to the time of payment and which the Company is obligated to pay.

Upon the exercise by the Company of the option provided for in Paragraph (b) the Company's obligation to the Assured under this Guarantee for the claimed loss or damage, other than to make the payment required in that paragraph, shall terminate, including any obligation to continue the defense or prosection of any litigation for which the Company has exercised its options under Paragraph 4.

7. Determination and Extent of Liability.

This Guarantee is a contract of Indemnity against actual monetary loss or damage sustained or incurred by the Assured claimant who has suffered loss or damage by reason of reliance upon the assurances set forth in this Guarantee and only to the extent herein described, and subject to the Exclusions From Coverage of This Guarantee.

The liability of the Company under this Guarantee to the Assured shall not exceed the least of:

(a) the amount of liability stated in Schedule A or in Part 2;

(b) the amount of the unpaid principal indebtedness secured by the mortgage of an Assured mortgagee, as limited or provided under Section 6 of these Conditions and Stipulations or as reduced under Section 9 of these Conditions and Stipulations, at the time the loss or damage assured against by this Guarantee occurs, together with interest thereon; or

(c) the difference between the value of the estate or interest covered hereby as stated herein and the value of the estate or interest subject to any defect, lien or encumbrance assured against by this Guarantee.

8. Limitation of Liability.

(a) If the Company establishes the title, or removes the alleged defect, lien or encumbrance, or cures any other matter assured against by this Guarantee in a reasonably diligent manner by

GUARANTEE CONDITIONS AND STIPULATIONS (Continued)

any method, including litigation and the completion of any appeals therefrom, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused thereby.

(b) In the event of any litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals therefrom, adverse to the title, as stated herein.

(c) The Company shall not be liable for loss or damage to any Assured for liability voluntarily assumed by the Assured in settling any claim or suit without the prior written consent of the Company.

9. Reduction of Liability or Termination of Liability.

All payments under this Guarantee, except payments made for costs, attorneys' fees and expenses pursuant to Paragraph 4 shall reduce the amount of liability pro tanto.

10. Payment of Loss.

(a) No payment shall be made without producing this Guarantee for endorsement of the payment unless the Guarantee has been lost or destroyed, in which case proof of loss or destruction shall be furnished to the satisfaction of the Company.

(b) When liability and the extent of loss or damage has been definitely fixed in accordance with these Conditions and Stipulations, the loss or damage shall be payable within thirty (30) days thereafter.

11. Subrogation Upon Payment or Settlement.

Whenever the Company shall have settled and paid a claim under this Guarantee, all right of subrogation shall vest in the Company unaffected by any act of the Assured claimant.

The Company shall be subrogated to and be entitled to all rights and remedies which the Assured would have had against any person or property in respect to the claim had this Guarantee not been issued. If requested by the Company, the Assured shall transfer to the Company all rights and remedies against any person or property necessary in order to perfect this right of subrogation. The Assured shall permit the Company to sue, compromise or settle in the name of the Assured and to use the name of the Assured in any transaction or litigation involving these rights or remedies.

If a payment on account of a claim does not fully cover the loss of the Assured the Company shall be subrogated to all rights and remedies of the Assured after the Assured shall have recovered its principal, interest, and costs of collection.

12. Arbitration.

Unless prohibited by applicable law, either the Company or the Assured may demand arbitration pursuant to the Title Insurance Arbitration Rules of the American Land Title Association. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the Assured arising out of or relating to this Guarantee, any service of the Company in connection with its issuance or the breach of a Guarantee provision or other obligation. All arbitrable matters when the Amount of Liability is $2,000,000 or less shall be arbitrated at the option of either the Company or the Assured. All arbitrable matters when the amount of liability is in excess of $2,000,000 shall be arbitrated only when agreed to by both the Company and the Assured. The Rules in effect at Date of Guarantee shall be binding upon the parties. The award may include attorneys' fees only if the laws of the state in which the land is located permits a court to award attorneys' fees to a prevailing party. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court having jurisdiction thereof.

The law of the situs of the land shall apply to an arbitration under the Title Insurance Arbitration Rules.

A copy of the Rules may be obtained from the Company upon request.

13. Liability Limited to This Guarantee; Guarantee Entire Contract.

(a) This Guarantee together with all endorsements, if any, attached hereto by the Company is the entire Guarantee and contract between the Assured and the Company. In interpreting any provision of this Guarantee, this Guarantee shall be construed as a whole.

(b) Any claim of loss or damage, whether or not based on negligence, or any action asserting such claim, shall be restricted to this Guarantee.

(c) No amendment of or endorsement to this Guarantee can be made except by a writing endorsed hereon or attached hereto signed by either the President, a Vice President, the Secretary, an Assistant Secretary, or validating officer or authorized signatory of the Company.

14. Notices, Where Sent.

All notices required to be given the Company and any statement in writing required to be furnished the Company shall include the number of this Guarantee and shall be addressed to the Company at **First American Title Insurance Company, Attn: Claims National Intake Center, 1 First American Way, Santa Ana, California 92707 Claims.NIC@firstam.com Phone: 888-632-1642 Fax: 877-804-7606**

First American Title

First American Title™

Schedule A

Subdivision Guarantee

ISSUED BY
First American Title Insurance Company

GUARANTEE NUMBER
4221265

Order No.: 4221265 Liability: $2,000.00 Fee: $350.00
Tax: $33.95

Name of Assured: DRP Holdings LLC

Date of Guarantee: October 31, 2024

The assurances referred to on the face page hereof are:

1. Title is vested in:

2. That, according to the public records relative to the land described in Schedule C attached hereto (including those records maintained and indexed by name), there are no other documents affecting title to said land or any portion thereof, other than those shown under Record Matters in Schedule B.

3. The following matters are excluded from the coverage of this Guarantee

   A. Unpatented Mining Claims, reservations or exceptions in patents or in acts authorizing the issuance thereof.

   B. Water rights, claims or title to water.

   C. Tax Deeds to the State of Washington.

   D. Documents pertaining to mineral estates.

4. No guarantee is given nor liability assumed with respect to the validity, legal effect or priority of any matter shown herein.

5. This Guarantee is restricted to the use of the Assured for the purpose of providing title evidence as may be required when subdividing land pursuant to the provisions of Chapter 58.17, R.C.W., and the local regulations and ordinances adopted pursuant to said statute. It is not to be used as a basis for closing any transaction affecting title to said property.

6. Any sketch attached hereto is done so as a courtesy only and is not part of any title commitment, guarantee or policy. It is furnished solely for the purpose of assisting in locating the premises and First American expressly disclaims any liability which may result from reliance made upon it.

First American Title™

Subdivision Guarantee

ISSUED BY
First American Title Insurance Company

GUARANTEE NUMBER
4221265

Schedule B

RECORD MATTERS

1. Facility Charges, if any, including but not limited to hook-up, or connection charges and latecomer charges for sewer, water and public facilities of City of Tumwater, a municipal corporation as disclosed by instrument recorded under recording no. 4238612 and 4238613.

   In this connection we note Waiver of Water Main Extension Agreement Fees recorded April 11, 2017 under Recording No. 4558151.

   In this connection we note Waiver of Sanitary Sewer Extension Agreement Fees recorded April 11, 2017 under Recording No. 4558156.

2. Taxes which may be assessed and extended on any subsequent roll for the tax year 2024, with respect to new improvements and the first occupancy which may be included on the regular assessment roll and which are an accruing lien not yet due or payable.

3. Deed of Trust and the terms and conditions thereof.

Grantor/Trustor:	Tenino Land Company, LLC, a Washington limited liability company, as to Parcels B and C and DRP Holdings LLC, a Nevada limited liability company, as to Parcels A, D, E and F through N, inclusive
Grantee/Beneficiary:	Security State Bank
Trustee:	First American Title Insurance Company
Amount:	$2,532,827.82
Dated:	May 27, 2021
Recorded:	June 07, 2021
Recording Information:	4856506

   Affects said premises and other property

4. Deed of Trust and the terms and conditions thereof.

Grantor/Trustor:	Tenino Land Company, LLC, a Washington Limited Liability Company
Grantee/Beneficiary:	Security State Bank
Trustee:	First American Title Insurance Company
Amount:	$1,521,728.05
Dated:	March 09, 2022
Recorded:	March 21, 2022
Recording Information:	4921678

   Said instrument is a re-record of recording no(s). 4919972

   Affects said premises and other property

   We question the effect, if any, and the validity of the certain Full Reconveyance recorded under Recording No. 5035156.

Note: The Company will require satisfactory proof of full payment of the debt secured by said mortgage or deed of trust prior to removing this exception or insuring the contemplated transaction.

5. Any and all offers of dedication, conditions, restrictions, easements, boundary discrepancies or encroachments, notes and/or provisions shown or disclosed by Short Plat or Plat of Thompson's Addition to Brighton Park recorded in Volume 7 of Plats, Page(s) 29 1/2.
   Affects: Parcel B

6. Easement rights and maintenance agreements, if any, for utilities which may have been granted in vacated streets and alleys prior to their vacation.
   Affects: Parcel B

7. Any and all offers of dedication, conditions, restrictions, easements, boundary discrepancies or encroachments, notes and/or provisions shown or disclosed by Thurston County Large Lot Subdivision No. LL-0605 recorded under recording number 9205080108.
   Affects: Parcel A

8. Terms, covenants, conditions, restrictions, easements, boundary discrepancies and encroachments as contained in recorded Lot Line Adjustment (Boundary Line Revisions):
   Recorded: May 08, 1992
   Recording Information: 9205080108

   Affects: Parcel A

9. Easement, including terms and provisions contained therein:
   Recording Information: 9211090216
   In Favor of: Port of Olympia, a municipal corporation
   For: free and unobstructed use and passage of all types of aircraft, in and through all air space

10. The terms and provisions contained in the document entitled "City of Tumwater Ordinance No. 1347"
    Recorded: December 03, 1992
    Recording No.: 9212030168

11. Easement, including terms and provisions contained therein:
    Recording Information: 9308170286
    In Favor of: Thurston County, a municipal corporation
    For: constructing and maintaining roadway slopes in excavation or enbankment
    Affects: Parcel A

12. Easement, including terms and provisions contained therein:
    Recording Information: 9401180245
    In Favor of: Thurston County, a municipal corporation
    For: constructing and maintaining roadway slopes in excavation or embankment
    Affects: Parcel B

13. The terms and provisions contained in the document entitled "Protective Covenants"
    Recorded: January 22, 1998

Recording No.: 3131277
Affects: Parcel B

14. The terms and provisions contained in the document entitled "City of Tumwater Ordinance No. O2006-024"
Recorded: July 31, 2006
Recording No.: 3852817

15. Memorandum of Agreement and the terms and conditions thereof:

Between: Chinook Landing, LLC
And: The Quadrant Corporation
Recording Information: 3873592

Modification and/or amendment by instrument:
Recorded: September 06, 2007
Recording Information: 3956126

16. Early Entry Agreement and the terms and conditions thereof:

Between: Chinook Landing, LLC
And: The Quadrant Corporation
Recording Information: 3873593

17. Easement, including terms and provisions contained therein:
Recorded: June 04, 2007
Recording Information: 3931768
In Favor Of: Puget Sound Energy, Inc., a Washington corporation
For: Electric and/or gas transmission and/or distribution system
Affects: Parcel A

18. Easement, including terms and provisions contained therein:
Recording Information: 3935010 and 3935011
In Favor of: City of Tumwater, a municipal corporation
For: repair, construct, operate, maintain, inspect, alter, modify, replace, remove and update to present and future technological standards sanitary sewer lift station and related appurtenances
Affects: Parcel A

19. The terms and provisions contained in the document entitled "City of Tumwater Ordinance No. O2015-008"
Recorded: October 13, 2015
Recording No.: 4470022

20. Easement, including terms and provisions contained therein:
Recorded: May 22, 2020
Recording Information: 4754831
In Favor Of: Puget Sound Energy, Inc., a Washington corporation
For: Electric and/or gas transmission and/or distribution system

21. Conditions, notes, easements, provisions and/or encroachments contained or delineated on the face of the Survey recorded under Recording No. 5030742.

Informational Notes, if any

1. General taxes for the year 2024, which have been paid.

Tax Account No.:	79300001100
Code Area:	440
Amount:	$ 2,588.28
Assessed Land Value:	$ 255,500.00
Assessed Improvement Value:	$ 0.00

Affects: Parcel A

2. General taxes for the year 2024, which have been paid.

Tax Account No.:	79300001200
Code Area:	440
Amount:	$ 2,247.18
Assessed Land Value:	$ 221,400.00
Assessed Improvement Value:	$ 0.00

Affects: Parcel B

First American Title™

Schedule C

Subdivision Guarantee

ISSUED BY
First American Title Insurance Company

GUARANTEE NUMBER
4221265

The land in the County of Thurston, State of Washington, described as follows:

Parcel A: Lot 3 of Thurston County large Lot No. LL 0605, according to declaration recorded May 8, 1992 under Recording No. 9205080108, in Thurston County, Washington. Parcel b: Lot 12 of THOMPSON'S ADDITION TO BRIGHTON PARK, according to plat recorded in volume 7 of plats at Page(s) 29 1/2, in Thurston County, Washington; together with the Westerly 30 feet of vacated Thompson Street adjoining or abutting on the East, which upon vacation, attached to said premises by operation of law, pursuant to Resolution No. 5872 adopted June 6, 1978.

First American Title Insurance Company
673 Woodland Square Loop SE, #407
Lacey, WA 98503

Illegal Restrictive Covenants

Please be advised that any provision contained in this document, or in a document that is attached, linked, or referenced in this document, that under applicable law illegally discriminates against a class of individuals based upon personal characteristics such as race, color, religion, sex, sexual orientation, gender identity, familial status, disability, national origin, or any other legally protected class, is illegal and unenforceable by law.