

**WASHINGTON COUNTY**

Dept. of Land Use & Transportation
Planning and Development Services Division
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

Development Application

PROCEDURE/CATEGORY TYPE: II

CPO: 1 COMMUNITY PLAN:
Cedar Hills-Cedar Mill

EXISTING LAND USE DISTRICTS:

R-5

ASSESSOR MAP: 1N1 35CB TAX LOT NUMBER(S): 400, 2300, 2400

NOTE: Contiguous property under identical ownership will be reviewed as part of this application and may be subject to conditions of approval. List assessor map and tax lot numbers of all contiguous property under identical ownership:

SITE ADDRESS: 10345 & 10405 NW Leahy Road

SITE SIZE: 8.01 acres

Date of Pre-app. Conference: _____

Staff Member: _____

(Please attach copy of Pre-application notes)

EXISTING USE OF SITE: One single family residential dwelling (Tax Lot 2400)

PROPOSED DEVELOPMENT ACTION: Two Property Line Adjustments; a 15-Lot Subdivision for Detached Single Family Residential Homes "Estates at Leahy Park"; and a Drainage Hazard Area Alteration for a Private Street Crossing

We, the undersigned, hereby authorize the filing of this application and certify that the information contained in this application is complete and correct to the best of our knowledge. This also authorizes the designated Applicant's Representative (if applicable) to act on behalf of the Applicant for the processing of the request.

x *Mitzi Lynn Maeshiro, Trustee to Roy M. Hayes Living Trust*
 OWNER CONTRACT PURCHASER DATE

Print Name: Roy M. HAYES LIVING TRUST

CASEFILE #: L2100311-S/PLA/PLA/DRA
(to be assigned by county)

APPLICANT:

COMPANY: Westwood Homes, LLC

CONTACT: Bill Wagoner

ADDRESS: 12700 NW Cornell Road

Portland OR 97229

PHONE: (503) 980-1708

FAX: _____

E-MAIL ADDRESS: bill@westwoodhomesllc.com

APPLICANT'S REPRESENTATIVE: *NOTE: The Applicant's Representative will be the primary contact for the County.*

COMPANY: Pioneer Design Group

CONTACT: Wayne Hayson

ADDRESS: 9020 SW Washington Square Road, Suite 170

Portland OR 97223

PHONE: 503-643-8286

FAX: _____

E-MAIL ADDRESS: whayson@pd-grp.com

OWNER(S): (attach additional sheets if needed)

NAME: Greg & Janelle Lorts

ADDRESS: 10405 NW Leahy Road

Portland, OR 97229

PHONE: _____

FAX: _____

E-MAIL ADDRESS: _____

ALSO NOTIFY:

NAME: Roy M. Hayes Living Trust; Attn: Mark Hayes

ADDRESS: 10345 NW Leahy Road

Portland, OR 97229

PHONE: _____

FAX: _____

X
 OWNER CONTRACT PURCHASER DATE

Print Name: Roy M. HAYES LIVING TRUST

X
APPLICANT DATE

Print Name: _____

X
APPLICANT DATE

Print Name: _____

OWNER CONTRACT PURCHASER DATE

Print Name: _____

PLEASE NOTE:

- o This application must be signed by ALL the owners or ALL the Contract Purchasers of the subject property.
- o If this application is signed by the Contract Purchaser(s), the Contract Purchaser is also certifying that the Contract Vendor has been notified.
- o The Applicant or a Representative should be present at all Public Hearings.
- o No approval will be effective until the appeal period has expired.
- o Corporations require proof of signature authority for that entity according to their Articles of Incorporation or as registered with the State of Oregon Corporation Division at <http://www.filinginoregon.com>

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NOV 04 2021

WASHINGTON COUNTY
LAND USE REVIEW APPLICATION FOR:

PLANNING & DEVELOPMENT
LAND USE & TRANSPORTATION

ESTATES AT LEAHY PARK

TYPE II REVIEW

**Two Property Line Adjustments; a 15-Lot Subdivision for
Detached Single Family Residential Homes; and a Drainage
Hazard Area Alteration for a Private Street Crossing**

Tax Lots 400, 2300 & 2400, Map 1N1 35CB

September 21, 2021

OWNER TAX LOT 2300:
Roy M. Hayes Living Trust
Mark Hayes, Trustee
11345 NW Leahy Road
Portland, OR 97229

OWNER TAX LOT 400 & 2400
Greg & Janelle Lorts
10405 NW Leahy Road
Portland, OR 97229

APPLICANT:
Westwood Homes, LLC
12700 NW Cornell Road
Portland, OR 97229
Contact: Bill Wagoner

APPLICANT'S REPRESENTATIVE:
Pioneer Design Group, Inc.
9020 SW Washington Square Rd., Suite 170
Portland, OR 97223
Contact: Wayne Hayson
Phone: (503) 643-8286
Email: whayson@pd-grp.com



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WASHINGTON COUNTY TRAFFIC IMPACT STATEMENT WAIVER

"STATEMENT OF UNDERSTANDING"

Resolution & Order 86-95 indicates that a Traffic Impact Statement (TIS) is to be prepared for a land use application for a development that would increase traffic by more than 40 ADT. The TIS was created by Resolution & Order 83-219 to ensure that adequate technical information is available to make findings of fact on the transportation development regulations under the Comprehensive Framework Plan.

A TIS prepared by County staff is one option to ensure that the information needed for review of the County's transportation development regulations is provided. As an alternative, applicants may, at their own option, forego a TIS prepared by County staff and provide the necessary technical information and traffic analysis in their application materials. The applicant recognizes that he/she is solely responsible for researching the required transportation requirements, incorporating the requirements into their proposal, and submitting a complete application containing the necessary traffic information. The applicant further recognizes that failure to provide complete and correct information will result in the application being deemed incomplete for review.

I have read and understand the above statement.

Tax Map: 1N1 35CB Tax Lot(s): 400, 2300 & 2400

APPLICANT: Westwood Homes, LLC Attn: Bill Wagoner


Bill Wagoner
APPLICANT'S SIGNATURE

9/20/2021
DATE

WASHINGTON COUNTY
LAND USE REVIEW APPLICATION FOR:

ESTATES AT LEAHY PARK

TYPE II REVIEW

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Detached Single Family Residential Homes; and a Drainage
Hazard Area Alteration for a Private Street Crossing**

Tax Lots 400, 2300 & 2400, Map 1N1 35CB

September 21, 2021

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Roy M. Hayes Living Trust
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11345 NW Leahy Road
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FACT SHEET

Project Name:	Estates at Leahy Park
Proposed Actions:	Two Property Line Adjustments; a 15-Lot Subdivision for Detached Single Family Residential Homes; and a Drainage Hazard Area Alteration for a Private Street Crossing
Review:	Type II
Tax Maps/Lot:	IN1 35CB 400, 2300 & 2400
Site Size: *(Based on Survey)	TL 400 3.50 acres; or 152,385 SF TL 2300 3.10 acres; or 135,172 SF TL 2400 1.41 acres; or 61,279 SF Total 8.01 acres; or 348,836 SF*
Addresses:	10345 & 10405 NW Leahy Road
Location:	On the north side of NW Leahy Road, opposite its westernmost intersection with NW Alpenglow Way.
Zoning:	R-5
Community Plan:	Cedar Hills – Cedar Mill, Cedar Mill East Subarea.
OWNER TAX LOT 2300: Trustee	Roy M. Hayes Living Trust; Attn: Mark Hayes, 10345 NW Leahy Road Portland, OR 97229
OWNER TAX LOT 400 & 2400:	Greg & Janelle Lorts 10405 NW Leahy Road Portland, OR 97229
APPLICANT:	Westwood Homes, LLC 12700 NW Cornell Road Portland, OR 97229 Contact: Bill Wagoner Phone: Email: bill@westwoodhomesllc.com
APPLICANT'S REPRESENTATIVE:	Pioneer Design Group, Inc. 9020 SW Washington Square Rd., Suite 170 Portland, OR 97223 Contact: Wayne Hayson Phone: (503) 643-8286 Email: whayson@pd-grp.com

GENERAL INFORMATION

The applicant is proposing two Property Line Adjustments (PLA's); a 15-Lot Subdivision for Detached Single Family Residential Homes "Estates at Leahy Park"; and a Drainage Hazard Area Alteration for a private street crossing. The subject site is specifically identified as Tax Lots 400, 2300 & 2400 of Tax Map 1N1 35CB. The three lots combine for a total of 8.01 acres, or 348,818 square feet in area, based on the site Record of Survey.

The site is within the Cedar Hills – Cedar Mill Community Plan, Cedar Mill East Sub-Area and is zoned R-5 (Residential, 5 units per acre) by Washington County.

There are two existing houses on the site. Following the PLA's, the home located at 10405 NW Leahy Road will be retained on Tax Lot 2400. Tax Lots 400 and 2400 will not be further associated with the application, with the exception of driveway improvements to connect Tax Lot 2400 to the private street proposed as part of the subdivision development, and mitigation plantings associated with a small area of vegetated corridor impact for the location of the storm water facility. Tax Lot 2300 is ultimately proposed to consist of approximately 4.49 acres, prior to subdivision. The outbuildings on Tax Lot 2300 will be demolished or otherwise removed to accommodate the subdivision.

VICINITY & SITE INFORMATION

Site Location

The site is located on the north side of NW Leahy Road, opposite its westernmost intersection with NW Alpenglow Way, in unincorporated Washington County.

Existing Uses

The property consists of three tax lots. The site is mostly vacant, but there is one existing house on Tax Lot 2400, and several outbuildings on Tax Lot 2300. The existing house will be retained on the PLA adjusted Tax Lot 2400.

Topography

The property is sloping from the northeast to the southwest. The high point of the site is at the North side corner of the property line at an elevation of approximately 427 feet. The low point of the site is at the south west property line at an approximate elevation of 365 ft.

Vegetation

Most of the two eastern parcels are undeveloped (Tax Lots 2300 and 2400), while most of the western parcel is landscaped with a lawn area and ornamental trees surrounding the driveway (Tax Lot 400). The area directly surrounding the home, trailer, and out buildings is cleared of native understory with several large trees providing canopy cover.

The undeveloped portion of site is largely mature vegetation with generally >50% aerial cover of Douglas Fir (*Pseudotsuga menziesii*) within the upland habitat areas and >50% aerial cover of black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Oregon ash (*Fraxinus latifolia*), and western red cedar (*Thuja plicata*) within the riparian corridor. Other mature

trees in the canopy are Bigleaf Maple (*Acer macrophyllum*), Pacific Madrone (*Arbutus menziesii*), and red alder (*Alnus rubra*). The understory has generally moderate diversity of native shrubs, with the areas closest to the residence and the northern property boundary of the two eastern parcels with a higher percentage of nonnative invasives. For more details, see the Technical Memorandum from Environmental Science & Assessment, LLC, dated September 9, 2021, included with this submittal.

Significant Natural Resources

Schott & Associates completed a wetland delineation for the property in October 2019 (WD #2019-0503, which was subsequently approved by DSL, Concurrence Letter dated 10-9-2019 (attached hereto).

The Cedar Hills -Cedar Mill Community Plan identifies Wildlife Habitat on most of Tax Lot 2300 corresponding to the onsite canopy cover, and does not map any Wildlife habitat on the western two parcels (Tax Lots 400 and 2400). The plan maps Water Area and Wetlands and Fish and Wildlife Habitat in a corridor passing east-west through the center of the three parcels, however, this mapping is assumed to correspond to the stream running through the site, which flows through the southern end of these parcels.

Both upland wildlife habitat and waters-related fish and wildlife habitat were field verified onsite by Environmental Science & Assessment biologists using the Washington County Habitat Assessment Guidelines (Washington County, 2020). Waters-related resource areas were field verified using the methodology for delineating water areas and wetlands described in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and companion Regional Supplement for Western Mountains, Valleys, and Coast Region (Version 2.0). Because the proposed project plans to fill several small wetlands and this area is within the jurisdiction of CWS, both a wetland delineation and CWS Tier II Site Assessment is being conducted.

Surrounding Land Uses

The surrounding neighborhood is primarily residential, with homes on various sized lots. All surrounding properties are designated in the R-5 district by Washington County, with various lot sizes surrounding the site as infill development occurs in the area.

Utilities

There is an existing stormwater system connection at the southeast corner of the property. The storm system drains to the southwest across NW Leahy Road

There is an existing sanitary sewer line that runs through the property generally aligned with the stream corridor. This line is within a CWS easement. The public sewerage system flows to the southwest across NW Leahy Road west of the site.

There is an existing water line in NW Leahy Road.

Transportation

Transportation facilities for automobile, transit, pedestrians, and bicyclists continue to develop in the local area, but circulation patterns are well established. The site abuts the north side of

NW Leahy Road, between the two ends of the loop of NW Alpenglow Way. NW Leahy Road is designated as collector (C1) street.

The closest bus route to the site is Tri Met's Route 50 – "Cedar Mill", which runs on NW Leahy Road. There is an existing transit stop located to the east of the proposed access, adjacent to the existing driveway access. Therefore, this property is served by transit.

PROJECT DESCRIPTION

The applicant is proposing 2 consecutive PLA's to reconfigure Tax Lot 400, 2300, and 2400. Each property line adjustment will meet the requirements of the Community Development Code, as described later in this report. The existing house on the site will be retained on Tax Lot 2400. Tax Lots 400 and 2400 will not be further associated with the application, with the exception of driveway improvements to connect Tax Lot 2400 to the private street and utilities proposed as part of the subdivision development, and mitigation plantings associated with a small area of vegetated corridor impact for the location of the storm water facility. Following completion of the PLA's, the applicant proposes a 15-Lot subdivision "Estates at Leahy Park" on the resultant Tax Lot 2300, which is proposed to contain 4.49 acres. The project is a residential subdivision creating lots for single-family detached homes in Washington County's R-5 zoning district.

The applicant is proposing two Property Line Adjustments (PLAs):

1. The first PLA (Sheet P2.1) adjusts the common line between Tax Lots 400 and 2400.
2. The second PLA (Sheet P2.2) adjusts the common line between Tax Lots 2300 and 2400.

The proposed subdivision divides adjusted Tax Lot 2300 creating 15 lots of various sizes. The lots average of 6,001 square feet from a small of 5,512 square feet to a large of 7,651 square feet.

The subject property abuts the north side of NW Leahy Road east of 107th Avenue. NW Leahy Road is a designated as 3-lane collector street, C-1 standard. The existing right-of-way is 20 feet to center line. The County's C-1 collector standard calls for a 37-foot centerline section. Therefore, the applicant will dedicate an additional 17 feet of right-of-way.

Access to the site will be provided by construction of a new private street located within Tract C. The private street will extend from NW Leahy Road north approximately 795 feet to a hammerhead turn-around meeting Fire Marshal requirements.

There is an existing sanitary sewer line that runs through the property generally aligned with the stream corridor, as discussed under wetland area above. This line is within a CWS easement. The public sewerage system flows to the southwest across NW Leahy Road west of the site.

COMMUNITY PLAN COMPLIANCE

The site is within the Cedar Hills – Cedar Mill Community Plan, Cedar Mill East Sub-Area. There are designated Significant Natural Resources on the site including Washington County Water Area, Fish and Wildlife Habitat, Wildlife Habitat, and Class I and II Riparian Habitat and Class A Upland Habitat on Metro's Regionally Significant Fish & Wildlife Habitat Inventory Map. The site is also designated by the County as including Drainage hazard Areas commensurate with the stream alignment.

The site is identified on the Local Street Connectivity (Map 7.2), but there are no specified points of connectivity or pedestrian connectivity areas on the site. There are also no applicable Special Area Street designations, or Areas of Special Concern. This property is not within a Major Transit stop or route area. The site is located within Parking Zone B.

CEDAR HILLS-CEDAR MILL COMMUNITY PLAN

General Design Elements

1. *In the design of new development, floodplains, drainage hazard areas, streams and their tributaries, riparian and wooded areas, steep slopes, scenic features, and powerline easements and rights-of-way shall be:*
 - a. *used to accept, define, or separate areas of differing residential densities and differing planned land uses;*

RESPONSE: Washington County designated these and surrounding properties through a comprehensive planning process following the criteria of this design element. The surrounding properties are developed or are generally developing in accordance with the R-5 residential densities as required.

There is a stream with associated wetlands and riparian areas, and fish & wildlife habitat designated on the property that runs northeast to southwest across the southern portion of the site. This vegetative corridor will be preserved (Tract A containing 62,894 square feet) consistent with CWS and Washington County standards. The resource area (Tract A) will be located between NW Leahy Road and the proposed lots, and will serve to separate the residential areas of the site from the collector street.

Therefore, this element is met.

- b. *preserved and protected consistent with the provisions of the Community Development Code to enhance the economic, social, wildlife, open space, scenic, recreation qualities of the community; and*

RESPONSE: The resource and habitat area will be preserved and protected as a separate tract (Tract A), which will be located between NW Leahy Road and the proposed lots.

- c. where appropriate, interconnected as part of a park and open space system.

RESPONSE: The CWS vegetative corridor and its preservation within Tract A provides an opportunity to interconnect the on-site features with other off-site open space features as they develop as part of a park or open space system. THPRD has not identified the site for acquisition, and is not designated on the THPRD Trails Functional Plan. This element is met.

2. *Master Planning Primary Use of Planned Development procedures and standards specified in the Community Development Code shall be required for development on land which includes a Significant Natural Resource as a means of protecting the resource while accommodating new development. A density transfer from the resource area to the buildable portion shall be allowed for any Significant Natural Resource site as specified in the Community Development Code.*

RESPONSE: A Planned Development is not required or proposed as no Significant Natural Area is present on the site, as designated by Section 422-6.

3. *Trees located within a Significant Natural Resource area shall not be removed without first obtaining a development permit for tree removal as provided for within the Community Development Code. A permit shall not be required for tree removal from powerline rights-of-way, public parks and playgrounds or mineral and aggregate sites.*

RESPONSE: There are trees on the site that are within a designated Significant Natural Resource area. These trees will be largely preserved and protected within Tract A, consistent with this design element, except where required for removal by CWS for enhancement of the vegetated corridor, or due to the installation of utilities and other public improvements. Trees identified for removal are shown on the Existing Conditions and Demolition Plan. Therefore, this element is met.

4. *Significant historical and/or cultural resources shall not be altered, defaced, demolished or relocated without first obtaining a development permit as provided for in the Historic and Cultural Resource Management Overlay District contained in the Community Development Code.*

RESPONSE: The subject site does not contain any significant historical or cultural resources. Therefore, this design element does not apply.

5. *All new subdivisions, attached unit residential developments, and commercial developments shall provide for pedestrian/bicycle pathways which allow public access through or along the development and connect adjacent developments and/or shopping areas, schools, public transit and park and recreation sites. The pedestrian-bicycle system is especially important in providing a link between existing and planned high density residential areas along Barnes Road with the transit center at Highway 26- 217. This system may include off right-of-way segments.*

RESPONSE: The Preliminary Plat shows that the proposed project includes improvements to public and private streets including sidewalks. Pedestrians and bicyclists can use these amenities to circulate through and along the development.

The improved streets with sidewalks will provide for pedestrian/bicycle circulations allowing public access along the development connecting to adjacent developed and surrounding underdeveloped properties. Provisions are made to allow for future connectivity through adjacent properties as they develop. Therefore, the project is in compliance with this design element.

6. *Open space shall be utilized for park and recreation facilities or passive recreation and dedicated to the appropriate recreation service provider wherever feasible.*

RESPONSE: Except for the CWS vegetative corridor, there is no designated open space required for this development. However, the vegetated corridor provides for passive recreational activities. Therefore, this design element is met to the degree practicable.

7. *Portions of the planning area are currently outside the boundaries of the Tualatin Hills Park and Recreation District. Residents and property owners in these areas should seriously consider annexing to the Tualatin Hills Park and Recreation district in order to assure the acquisition, development, and maintenance of a park and recreation system.*

RESPONSE: The Service Provider Letter from the Tualatin Hills Park and Recreation District states that the subject site is served by the district. The letter also indicates that the service level in the area is generally adequate for the development, with the exception of a small portion of Tax Lot 400 which crosses into an area which is considered to be below the District's service levels. Tax Lot 400 is not, however, part of the subdivision development.

8. *Bicycle parking facilities shall be required as a part of all commercial, institutional and residential developments. Residential developments which have parking lots of 20 or more spaces shall provide bicycle parking facilities.*

RESPONSE: The proposed project is not a commercial or institutional use and does not include a parking lot of 20 or more spaces. Therefore, bicycle parking is not required.

9. *In the design of road improvements that are required of new developments to meet the County's growth management policies, pedestrian/bicycle pathways identified in the County's Transportation Plan shall be included.*

RESPONSE: The Washington County Transportation Plan does not show any existing or proposed pedestrian or bicycle pathways identified within the vicinity of the proposed project. Therefore, this design element does not apply.

10. *Noise reduction measures shall be incorporated into all new developments located adjacent to Arterials and Collectors. Noise reduction alternatives*

include vegetative buffers, berms, walls and other design techniques such as insulation, setbacks, and orientation of windows away from the road.

RESPONSE: The site abuts the north side of NW Leahy Road, which is a designated collector (C1). However, the proposed lots will be separated from the road by the CWS VC corridor, which varies in width (north-south) from 119 feet to 192 feet due its angle in relationship to Leahy Road. This physical separation reduces noise issues related to arterial or collector traffic. The homes will also be well insulated with double glazed windows for sound control to further mitigate noise. This design element is met.

11. *Where the impact of noise and lighting associated with commercial or industrial uses on adjacent residential areas does not meet the standards in the Community Development Code, the commercial development shall be subject to limited hours of operation.*

RESPONSE: The proposed project is residential and not adjacent to any commercial or industrial uses. Therefore, this design element does not apply.

12. *New development shall dedicate right-of-way for road extensions and alignments as indicated in Washington County's Transportation Plan or Community Plans. New development shall also be subject to conditions set forth in the County's growth management policies during the development review process.*

RESPONSE: The proposed development will dedicate appropriate right-of-way to accommodate the widening of SW Leahy Road across the site frontage. Therefore, the project complies with this design element.

13. *New access onto Arterials and Collectors shall be limited. Shared or consolidated access shall be required prior to the issuance of a development permit for land divisions or structures located adjacent to these facilities, unless demonstrated to be infeasible.*

RESPONSE: The proposed subdivision will provide new internal private street improvements which will ultimately serve each new lot, with a single access point at the existing driveway access to Tax Lot 400, thereby meeting the consolidated access criterion. Therefore, this design element is met.

14. *The following shall apply to all Planned Developments (PDs), whether required in this Plan or chosen by the developer, when the subject property is located adjacent to areas which have a lower density Plan designation:*

RESPONSE: The proposed project is not a Planned Development. Therefore, this design element does not apply.

15. *The County shall emphasize non-auto (transit, bicycle and pedestrian) measures as an interim solution to circulation issues. These measures shall be used to facilitate access to transit centers.*

RESPONSE: The applicant's proposed street improvements include sidewalks, with pedestrian connection to and from NW Leahy Road.

Public improvements including sidewalk and pavement width to support bike lanes will be provided along the site frontage on NW Leahy Road. The sidewalk will be located at full design width and grade. Full collector street improvements may be deferred (fee in lieu – Trust & Agency Account) as appropriate to connect with future development to the east and west. It is noted that Leahy Road is on the TDT list (#1057), which allows for TDT credits.

The closest bus route to the site is Tri Met's Route 50 – "Cedar Mill", which runs on NW Leahy Road. There is an existing transit stop located to the east of the proposed access, adjacent to the existing driveway access. Therefore, this property is served by transit.

16. *The required amount of parking for development shall be determined by the Parking Maximum Designations and the standards of the Community Development Code.*

RESPONSE: The applicant has addressed Community Development Code Chapter 413 to ensure compliance with the required parking standards.

Cedar Mill East Sub Area

Little change is proposed in the Plan for this predominantly low density residential area. An R-9 area is proposed south of NW Cornell Road between NW 101st, NW 92nd and NW Leahy. Here, existing lots are fairly large and will permit future development at the R-9 range when local street circulation is improved.

Design Elements

1. *No increase in the size of the two Neighborhood Commercial areas located on Cornell Road at NW 107th and NW 119th shall be granted through the quasi-judicial Plan Amendment process.*
2. *Direct access to the two Neighborhood Commercial areas located on Cornell Road at NW 107th and NW 119th from Cornell Road shall be permitted only from NW 107th and NW 119th.*

RESPONSE: This is a residential development rather than commercial and is not within or associated with the neighborhood commercial areas on NW 107th and NW 119th Avenues. Therefore, Design Elements 1 & 2 are not applicable.

CONCLUSION – Community Plan: Based on the responses provided herein, the applicant has demonstrated compliance with the applicable Elements of the Cedar Hills – Cedar Mill Community Plan, Including the Cedar Mill East Sub-Area.

APPLICABLE DEVELOPMENT CODE CRITERIA

ARTICLE II: PROCEDURES

The proposed project will be processed through a Type II procedure. The developer will accordingly: 1) obtain all necessary permits and procedures set forth in this section of the code, 2) comply with all provisions concerning the application and fee submittal requirements, 3) submit the forms and all other required information stated in Section 203-3, and 4) supply the tax maps for use in notification. The applicant has met the requirements for the neighborhood meeting procedures (see Neighborhood Meeting material in this application packet).

The application, narrative, and relevant documentation are submitted to support the proposal's compliance with the applicable code and community plan provisions, fulfilling the burden of proof requirements. All provisions regarding hearings, decisions, appeals and reconsideration will be complied with as applicable to the proposal.

ARTICLE III: LAND USE DISTRICTS

302 R-5 DISTRICT (RESIDENTIAL 5 UNITS PER ACRE)

302-1 Intent and Purpose

The R-5 District is intended to implement the policies of the Comprehensive Plan for areas designated for residential development at no more than five (5) units per acre and no less than four (4) units per acre, except as specified otherwise by Section 300-2, Section 300-5, or Section 302-6. The primary purpose is to protect existing neighborhoods developed at five (5) units per acre or less. Infill development on all parcels two (2) acres or less may occur only through application of the infill policy (Section 430-72).

302-2 Uses Permitted Through a Type I Procedure

The following uses are permitted subject to the specific standards for the use set forth below and in applicable Special Use Sections of Section 430, as well as the general standards for the district, the Development Standards of Article IV and all other applicable standards of the Code.

302-2.4 Detached Dwelling Unit

- A. *New dwelling on an existing lot or parcel that does not exceed 16,500 square feet in buildable area (buildable area is exclusive of unbuildable land categories listed in Section 300-3.1) - Section 430-37.1 A.*

RESPONSE: The property is zoned R-5. The proposed subdivision creates lots for single-family detached units, which are a permitted use in this district.

302-3 Uses Permitted Through a Type II Procedure

The following uses are permitted subject to the specific standards for the use set forth below and in applicable Special Use Sections of Section 430, as well as the general standards for the district, the Development Standards of Article IV and all other applicable standards of the Code. Approval may be further conditioned by the Review Authority pursuant to Section 207-5.

302-3.2 Flag lot - Section 430-46.

RESPONSE: One single flag lot is proposed to be located on Lot 3, which accesses from the terminus of the western end of the private street hammerhead. Please see Section 430-46 for additional findings.

302-6 Density

302-6.1 In the R-5 District:

- A. *The permitted residential density shall be no more than five (5) units per acre and no less than four (4) units per acre, except as permitted by Section 300-2 or by 302-6.2 below; and*
- B. *A lot shall be at least fourteen thousand (14,000) square feet in area in order to be divided.*

RESPONSE: The site is zoned R-5. Following the PLA's, the resultant Tax Lot 2300 will contain a combined 4.49 acres.

The existing house on Tax Lot 2400 is being retained and is separated from the subdivision by a PLA, while Tax Lot 400 will also be excluded from the subdivision following the PLA process.

The applicant has designed the proposed subdivision to provide 15 lots within Tax Lot 2300.

The applicant is providing density calculations for this project as follows:

Gross Density Calculations

Gross Site Area = 4.49 acres; or 195,367 SF
Minimum = (4.49 acres X 4 units) = 17.96 rounded to 18
Maximum = (4.49 acres X 5 units) = 22.45 rounded to 22

As demonstrated above, with 15 proposed lots, the subdivision does not comply with the basic minimum and maximum density requirements of the R=5 District.

Accordingly, the applicant has elected to rely on the provisions of Section 300-2.8, which allows certain categories of land listed in Section 300-3.1 to be excluded from the acreage used

to calculate minimum required densities, including Significant Natural Resource areas and future right of way for arterials and collectors. The resultant net developable area and minimum required density is therefore provided below:

Minimum Net Density Calculation

$$\text{Net Site Area} = 195,367 \text{ SF} - 64,798 \text{ SF (Tract A)} - 6,817 \text{ SF (ROW)} = 137,386 \text{ SF}$$
$$\text{Minimum} = (3.15 \text{ acres} \times 4 \text{ units}) = 12.6 \text{ rounded to } 13$$

Therefore, at 15 units the proposed subdivision is within the minimum (13) and maximum (22) densities for the site, after adjustments density as permitted under Section 300-2.8. This criterion is met.

302-7 Dimensional Requirements

302-7.1 Lot Area:

- A. *The average lot area of lots within a proposed development (land divisions and property line adjustments) shall be no less than six thousand (6,000) square feet (does not include tracts); and*
- B. *The minimum lot area of a lot shall be five thousand five hundred (5500) square feet.*

RESPONSE: The minimum proposed lot size is 5,512 square feet (Lots 5 and 6), and the average is 6,001 square feet, as reflected in Table 1 below. Therefore, this criterion is met.

302-7.2 Yard (Setback) Requirements.

Yards shall be measured from the property line, sidewalk, or easement for public travel, whichever is closest to the building line.

The minimum yard requirements shall be:

- A. *Fifteen (15) foot front yard to the front building wall and twelve (12) feet to a porch or other covered or enclosed entryway;*
- B. *Twenty (20) foot front or street side yard to garage vehicle entrance, or four (4) foot rear yard to vehicle entrance from an alley;*
- C. *Ten (10) foot street side yard;*
- D. *Five (5) foot side yard;*
- E. *Fifteen (15) foot rear yard;*
- F. *Required yards shall be horizontally unobstructed except as provided in Section 418; and*

G. Additional setbacks may be required as specified in Sections 411 and 418.

RESPONSE: The applicant has designed the lots to meet the required building setbacks for all yards as shown below:

Front yard:	15 ft.
Front yard, Porch	12 ft.
Front yard, garage:	20 ft.
Street Side Yard:	10 ft.
Side Yard:	5 ft.
Rear Yard:	15 ft.

The standard setbacks are reflected on the Preliminary Plat, demonstrating that these standards can be met. The builder is responsible for meeting the approved setback requirements through the building permit process.

Table 1
Lot Sizes & Dimensions

Lot Number	Site Size	Lot Width	Lot Depth	Solar Oriented
1	6,301	68	103	*
2	5,557	54	103	*
3, flag lot*	6,601*	53	126	*
4	5,545	52	106	*
5	5,512	52	106	*
6	5,512	52	106	*
7	5,797	52	106	*
8	6,477	60	107	
9	5,522	50	110	
10	5,705	43	131	
11	6,637	77	93	*
12	5,735	62	93	*
13	5,735	62	93	*
14	5,735	62	93	*
15	7,651	80	95	*
Average	6,001			

*Lot area does not include flag access.

The proposed subdivision creates a variety of lot sizes including 1 flag lot (Lot 3). The lots average of 6,001 square feet from a small of 5,512 square feet to a large of 7,651 square feet.

302-7.3 Height:

- A. *The maximum height for structures shall be thirty-five (35) feet except as modified by other Sections of this Code.*
- B. *The maximum height for accessory structures shall be fifteen (15) feet except as modified by other Sections of this Code.*
- C. *Normal building appurtenances and projections such as spires, belfries, cupolas, chimneys, ventilators, elevator housings or other structures placed on or extending above roof level may exceed the thirty-five (35) foot building height limit to a maximum height of sixty (60) feet.*
- D. *The height of telecommunication facilities are regulated by the Permitted Use sections of this Land Use District, Sections 201, 430-1, 430-109 and other applicable provisions of this Code.*
- E. *For any detached dwelling or manufactured dwelling (except manufactured dwellings in a manufactured dwelling park or a manufactured dwelling approved as a temporary use), and their accessory structures, the maximum building height shall comply with the Solar Balance Point Standard in Section 427-4.*

RESPONSE: The applicant understands the maximum height standards. No specific homes plans are proposed with this subdivision application. The builder and/or homeowners are responsible for meeting the building height requirements through the building permit process.

302-7.4 Lot Dimensions:

The minimum dimensions for any new lot or parcel shall be:

- A. *Lot width - forty (40) feet;*
- B. *Lot depth - sixty (60) feet;*
- C. *Lot width at the street or access point - forty (40) feet except as allowed through Section 430-45 (flag lots); and*
- D. *Lot width at street on a cul-de-sac, eyebrow corner, hammerhead terminus, or other street terminus - twenty (20) feet.*

RESPONSE: The proposed subdivision creates lots for detached single-family homes.

All of the Lots meet or exceed the minimum width of 40 feet and depth of 60 feet, as demonstrated in Table 1 above. Lot 3 is a flag lot with access from western terminus of the hammer-head of the private street (Tract C), and designed to meet the flag lot standards, see also additional response findings for Section 430-45 herein. Therefore, this criterion is met.

ARTICLE IV: DEVELOPMENT STANDARDS

403 APPLICABILITY

403-2.1: Master Planning Schematic

RESPONSE: The information submitted with this application contains the requirements listed by this section. The development is permitted in the primary district and the siting maintains all minimum dimensional requirements for the district and use.

403-3 Additional Standards Inside the UGB

In addition to the requirements of Table I, all Master Plan and Site Analysis applications shall address the requirements of Sections 404-419, 421-423, 427 and 429.

RESPONSE: This narrative addresses all of the relevant sections for an application regarding land inside the Urban Growth Boundary. This criterion has been met.

404 MASTER PLANNING

Information contained in this application package satisfies all requirements listed in this section for on-site and off-site analysis. Table I information is demonstrated below.

- A. Topography: See **Existing Conditions Plan**.
- B. Soils and Geology: See the Preliminary Storm Drainage Report for soils information.
- C. Drainage: See **Existing Conditions Plan and Grading & Storm Drainage**.
- D. Vegetation: See **Existing Conditions Plan and Tree Preservation Plan**.
- E. Views & vistas: Views and vistas are not designated for the property in the community plan or the resource document.
- F. Sun exposure: See **Preliminary Plat** to see the lots that provide adequate solar access.
- G. Structures: Not applicable. The proposed application is for a subdivision, not for building permit approval.
- H. Open Space: The site design sets aside approximately 1.49 acres (64,798 SF) in a tract (Tract C) for open space. See **Preliminary Plat** and Section 405 below.

405 OPEN SPACE

405-1 The following categories identified in the Site Analysis, Section 404-1, shall be preserved as open space, except as may be otherwise provided:

- 405-1.1 Confirmed land movement hazard areas, as identified through the application of the standards of Section 410, or mapped as a Significant Natural Area on the Community Plan;*
- 405-1.2 Areas confirmed to have severe erosion potential due to soil type, geologic structure and vegetation, as identified through the application of the standards of Section 410, or mapped as a Significant Natural Area on the Community Plan;*
- 405-1.3 Bodies of water such as rivers or lakes;*
- 405-1.4 Land within the Flood Plain, Drainage Hazard Area or riparian zone, except as provided in Sections 421 and 422; or*
- 405-1.5 Other specific areas identified for open space within the Community Plan, including areas identified as Density Restricted Lands in the North Bethany Subarea of the Bethany Community Plan, with the exception of slopes greater than twenty-five (25) percent that are located outside of the Natural Features Buffer shown on the Urban/Rural Edge Map of the North Bethany Subarea Plan.*

405-2 Protection

Site Planning and development shall avoid disturbance of identified open space resources. Full use should be made of density transfers, siting of structures and roads, and other appropriate means in designing the development around the open space.

RESPONSE: The Community Plan identifies Wildlife Habitat on most of the eastern parcel (tax lot 2300) corresponding to onsite canopy cover and does not map any Wildlife habitat on the western parcels (Tax Lot 400 and 2400). The plan maps Water Area and Wetlands and Fish and Wildlife Habitat in a corridor passing east-west through the center of the three parcels, however, this mapping is assumed to correspond to the stream running through the site, which flows through the southern end of these parcels. The Plan does not identify any significant land movement hazard areas, or areas of severe erosion.

A 62,894 square foot open space tract (Tract A) will be located between proposed lots 11-15 and NW Leahy Road, just east of the storm facility. Overall Tract A is a 170-foot-wide rectangular corridor of stream, CWS vegetated corridor, and preserved upland wildlife habitat making up the bottom one-third of this development

405-4 Maintenance

At a minimum, maintenance shall include the following:

- 405-4.1 In natural areas, areas of undisturbed vegetation or areas replanted with vegetation after construction and woodlands, woodland swamps or wetlands, maintenance is limited to removal of litter and hazardous plant materials. Except*

as provided by Section 421, natural water courses are to be maintained as free-flowing.

Stream channels shall be maintained so as not to alter flood plain or drainage hazard area levels, except as provided by Section 421;

RESPONSE: The preserved SNR area of the site will be set aside and protected by Tract A. The preservation area will be enhanced with invasive plant removal, and that invasive plant density then replaced with native plantings to reach a final desired density of 2,400 stems/acre. To ensure native plantings in the preservation area have successfully established, a monitoring and maintenance report will be provided to the county per Washington County Community Development Code 422-5.3 C (6). If the report determines that less than 75% of the installed plantings have survived, appropriate replacement plantings to increase survival will be installed.

No alteration of the creek channel is proposed, and the channel will be maintained as free-flowing consistent with Section 421.

405-4.2 For garden plots which are the division of open space into plots for cultivation as gardens by residents, maintenance may be limited to weeding and fallowing;

405-4.3 For recreational areas which are areas designed for specific active recreational uses such as totlots, tennis courts, swimming pools, ballfields, and similar uses, maintenance shall insure that no hazards, nuisances, or unhealthy conditions exist;

405-4.4 For greenways which are linear green belts linking residential areas with other open-space areas, maintenance shall insure that there exist no hazards, nuisances, or unhealthy conditions. These greenways may contain bicycle paths, footpaths, and bridle paths. Connecting greenways between residences and recreational areas are encouraged;

405-4.5 For lawn areas which are grass with or without trees, maintenance may be limited to mowing to insure neatness and usability.

RESPONSE: Tract A is proposed as a linear greenway for passive recreational use only. No garden plots, active recreational uses, or lawn areas are proposed. Therefore, these criteria are met.

405-5 Ownership Maintenance

Open space areas shall be maintained so that their use and enjoyment as open space are not diminished or destroyed. Open space areas may be owned, preserved and maintained as required by this Section by any of the following mechanisms or combinations thereof:

405-5.1 Dedication of open space to an appropriate public agency, when a public agency is willing to accept the dedication.

- 405-5.2 Ownership of the open space by a homeowners' association or property owner(s) assuming full responsibility for its maintenance.*
- 405-5.3 Dedication of development rights of open space to an appropriate public agency with ownership remaining with the applicant or owner or homeowners' association. Maintenance responsibility shall remain with the property owner.*
- 405-5.4 Deed-restricted private ownership which prevents development of the open space land and provides for maintenance.*

RESPONSE: The applicant has obtained Service Provider Letters from CWS and THPRD. CWS will require an easement over Tract A, but THPRD did not express any interest in ownership of the Tract. Unless either agency requests and/or commits to ownership, the tract will be owned and maintained by an HOA or other appropriate legal entity.

407 LANDSCAPE DESIGN

RESPONSE: In the R-5 District, no minimum landscaping requirement exists. However, it is anticipated that the lots will have typical residential landscaping with allowable material using current nursery standards for installation and maintenance. Future owners or builders will complete landscaping as desired. The design of the site does not include parking areas for 10 or more vehicles.

407-3 Tree Preservation and Removal

There are trees on the site that are located within a designated Significant Natural Resource area. Many of these trees will be preserved and protected within the 62,894 square foot Tract A, except where required for removal by CWS for enhancement of the vegetated corridor, or due to the installation of utilities and other public improvements. Trees outside of Tract A identified for removal are shown on the Existing Conditions and Demolition Plan, Sheet P2. Trees scheduled for removal are those in conflict with sewer and utility installations, and ultimately grading for lot drainage, foundations and driveways. This application contains all submission requirements for tree removal and no other permit will be necessary after approval of the application.

407-7 Urban Street Tree Standards

The Street Trees and Water Quality Facility Planting Plan, Sheet L1, provides for street trees consistent with the requirements of Section 407-7 for both NW Leahy Road and the new internal private streets. Street trees are not shown where the significant natural resource area abuts the edge of the private street tract, or along the street frontage of Tax Lots 400 and 2400. These lots are not subject to the subdivision portion of this application, and will be subject to these requirements with future development

408 NEIGHBORHOOD CIRCULATION

408-4 Circulation Analysis

408-4.2 *For all development on a site which exceeds two (2) acres, the applicant shall submit a circulation analysis which at a minimum includes the subject site and the entirety of all property within 300 feet of the proposed development site. This plan shall incorporate the following features...*

RESPONSE: The applicant has submitted a circulation analysis which meets the Off-Site analysis requirements of Section 404-2.4 (see Plan Set in this application packet). This criterion has been met.

408-6 Review Standards for Development on Lands Designated in the Community Plan Local Street Connectivity Maps or on Lands Designated as a Pedestrian/Bicycle District

The following review standards shall apply to lands designated on a community plan's Local Street Connectivity map or as a Pedestrian/Bicycle District on the Transportation System Plan's Pedestrian System map and shall be used to:

- A. Meet Metro's street connectivity requirements;*
- B. Provide a generally direct and uncircuitous pattern of streets and accessways to ensure safe and convenient access for motor vehicles, pedestrians, bicyclists, and transit users; and*
- C. Ensure that proposed development will be designed in a manner which will not preclude properties within the circulation analysis area from meeting the requirements of this section.*

408-6.1 *In the event of a conflict between the standards in Section 408-6 and Local Street Connectivity maps element or specific Town Center or LRT Station Community Plan elements, the more specific Community Plan elements shall control.*

RESPONSE: The subject site is designated in the Cedar Hills – Cedar Mill Community Plan as Local Street Connectivity Land (Map 7.2). Therefore, the application is subject to the standards of Section 408-6.

408-6.2 *For residential, office, retail, and institutional development, on-site streets shall be provided which meet the following:*

- A. Block lengths for Local Streets, Neighborhood Routes and Collector Streets shall not exceed 530 feet between through streets, measured along*

- the nearside right-of-way line of the through street, except when the provisions of Sections 408-6.2 G., 408-6.4, 408-6.5 or 408-7 are met.*
- B. *The total length of a perimeter of a block for Local Streets, Neighborhood Routes and Collector Streets shall not exceed 1,800 feet between through streets, measured along the nearside right-of-way line, except when the provisions of Sections 408-6.2 G., 408-6.4, 408-6.5 or 408-7 are met.*
- C. *Vehicular access to properties adjoining the subject site shall be provided when the adjoining property:*
- (1) *Only has frontage on a street classified as an arterial or collector street in the Transportation System Plan;*
 - (2) *Does not have approved permanent access consistent with Section 501-8.5 and does not qualify for an access on its frontage based on the standards in Section 501-8.5(B); and*
 - (3) *Is considered to be redevelopable, for purposes of this section, based on either:*
- a. *Residential districts: The ability to partition, subdivide, or add attached dwelling units to meet minimum density standards; or*
 - b. *Commercial, Industrial, or Institutional districts: Lack of permanent access consistent with the spacing standards in Section 501-8.5.*
- D. *Cul-de-sacs and permanent dead-end streets shall be prohibited except where construction of a through street is found to be impracticable due to the provisions of Section 408-6.2.G. or application of Sections 408-6.4, 408-6.5 or 408-7.*
- E. *Streets shall connect to all existing or approved stub streets which abut the development site.*
- F. *When cul-de-sacs are allowed, they shall be limited to two hundred (200) feet and no more than twenty-five (25) dwelling units unless impracticable.*

RESPONSE: The existing perimeter street network consists of NW Leahy Road along the south property line and NW Cornell Road to the north, but not abutting the subject site. The closest north/south oriented street is NW 107th Avenue, which extends between Leahy and

Cornell Roads. As such, there are no nearby existing complete blocks. No additional streets or street stubs currently abut the subject site.

The applicant initially proposed a public street, which would have provided for a future through street extension to the east to NW Ash Street for extension through the site to serve other surrounding properties with future development. However, during the pre-application conference process and in conjunction with County Current Planning and Engineering staff, it was determined that a private street was the more appropriate option, without the need for future extension to serve other properties. The private street allows greater preservation of significant natural resources than possible through public street construction due to minimum right-of-way requirements. Further, due to slopes in the area and existing development patterns abutting the site, staff indicated that it is considered that connection to a through street with future development would be impracticable. Consequently, the plan includes a permanent dead-end street with hammerhead turn-around. As a result, the proposal is not able to alter existing vehicular blocks, or create new ones.

G. The Review Authority may approve a modification to the review standards of Section 408-6.2 A., B., C. or D. above based on findings that the modification is the minimum necessary to address the constraint and the application of the standard is impracticable due to the following:

- (1) *Topography, although grades that may be too steep for a street are not necessarily too steep for an accessway;*
- (2) *Drainage hazard areas, wetlands, flood plains, or a Significant Natural Resource area;*
- (3) *Existing development patterns on abutting property which preclude the logical connection of streets or accessways;*
- (4) *Abutting undeveloped or underdeveloped property is not designated R-5, R-6, R-9, R-15, TO:R9-12, TO:R12-18, TO:R18-24, FD-20, FD-10 or an urban reserve area;*
- (5) *Arterial access restrictions; or*
- (6) *Railroads.*

RESPONSE: The applicant is requesting a modification under the provisions of Section 408-6.2.G.(1), (2), and (3).

As described herein, it is not possible for this development to provide street improvements that meet the block length standard for a number of reasons. As confirmed with staff during the pre-application conference process, due to the site topography and existing development patterns abutting the site, it is considered that a connection to a through street with future development would be impracticable and unlikely to ever be utilized. As such, the modification standards of

Section 408-6.2.G (1) and (3) relating to topography and surrounding development patterns which serve to preclude the logical provision of through streets or accessways are applicable to this application.

It is also noted that significant natural resource areas and drainage hazard areas exist along the southern 3rd of the site, adjacent to NW Leahy Road.

408-6.3 For residential, office, retail, and institutional development, an on-site pedestrian and bicycle circulation system shall be provided which meets the following:

- A. For blocks abutting an Arterial or Collector, when block lengths exceed five hundred thirty (530) feet, an accessway shall be provided to connect streets for every three hundred thirty (330) feet of frontage or portion thereof. A trail identified on the Transportation System Plan Pedestrian System map may substitute for such an accessway;*

RESPONSE: This site abuts a designated collector, NW Leahy Road, along its southern boundary. As previously discussed, the block spacing and perimeter length standards cannot be fully met, and no existing perimeter blocks or accessways exist. The applicant has requested a modification to these standards.

Currently, the existing block length along the north side of NW Leahy Road is approximately 3,800 feet. The proposed private street will extend north from NW Leahy Road approximately 530 feet east of NW 107th Avenue, meeting the requirements of this section. Sidewalk adjoining the private street will extend north and east, ultimately ending with a pedestrian connection to property abutting NW Ash Street at the eastern terminus of the hammerhead turnaround. The requirements of this Section are met.

- B. Accessways shall connect with all existing or approved accessways which abut the development site;*

RESPONSE: There are no existing or designated accessways identified in relation to the subject property.

- C. Accessways shall provide the most reasonably direct access to abutting pedestrian oriented uses which are not served by a direct street connection from the subject property. Accessways shall provide future connection to abutting underdeveloped or undeveloped property which is not served by a direct street connection from the subject property, where the abutting property line exceeds 100 feet, except for designated Industrial or General Commercial land.*

Where the abutting property line exceeds 400 feet, additional accessways may be required by the Review Authority based on expected pedestrian demand. The Review Authority may reduce the number of required accessways to abutting properties if:

- 1) Such a reduction results in spacing of streets and/or accessways of 330 feet or less, and
- 2) Reasonably direct routes are still provided for pedestrian and bicycle travel in areas where pedestrians and bicycle travel is likely if connections are provided.

RESPONSE: As described above, a continuous sidewalk adjoining the private street will extend north and east from NW Leahy Road, ultimately ending with a pedestrian connection to property abutting NW Ash Street at the eastern terminus of the hammerhead turnaround. Additional pedestrian access will be available from the north and west sides of the private street with future development of Tax Lots 400 and 2400, meeting the requirements of this section.

D. Direct connection of cul-de-sacs and dead-end streets to the nearest available street or pedestrian oriented use;

RESPONSE: As described above, a continuous sidewalk adjoining the private street will extend north and east from NW Leahy Road, ultimately ending with a pedestrian connection to property abutting NW Ash Street at the eastern terminus of the hammerhead turnaround. Additional pedestrian access will be available from the north and west sides of the private street with future development of Tax Lots 400 and 2400, meeting the requirements of this section.

E. Accessways may be required to stub into adjacent developed property if the Review Authority determines that existing development patterns or other constraints do not physically preclude future development of an accessway on the developed property and the adjacent developed property attracts a greater than average level of pedestrian use. A trail identified on the Transportation System Plan Pedestrian System map may substitute for such an accessway;

RESPONSE: As described above, sidewalk adjoining the private street will extend north and east, ultimately ending with a pedestrian connection to property abutting NW Ash Street at the eastern terminus of the hammerhead turnaround. Additional pedestrian access will be available from the north and west sides of the private street with future development of Tax Lots 400 and 2400, meeting the requirements of this section.

F. Trails shall connect with all existing or approved trails which abut the development site. Trails identified on the Transportation System Plan shall be consistent with the identified alignment and may be required. Regional Trail Refinement Areas identified on the Transportation System Plan shall consider potential trail alignments and not preclude implementation of the trail. Construction of the Regional Trail identified by the refinement area may be required.

RESPONSE: There are no trails designated on the TSP Pedestrian Plan associated with this property, or within the Cedar Hills-Cedar Mill Community Plan. Further, Tualatin Hills Park and Recreation District (THPRD) has not identified any trail associated with this development, and there are no facilities identified within the THPRD Trails Master Plan. Therefore, this criterion is not applicable.

408-6.4 The Review Authority may approve a modification to the review standards of Section 408-6, based on findings that strict compliance with the standards is not practicable due to:

- A. *Topography;*
- B. *The standards of Sections 421 or 422;*
- C. *Existing development patterns on abutting property which preclude the logical connection of streets or accessways, or;*
- D. *The provisions of a Significant Natural Resource as identified in a Community Plan. The modification shall be the minimum necessary to address the constraint.*

RESPONSE: The applicant is requesting a modification under the provisions of Section 408-6.2.G.(1), (2), and (3). This section is not applicable.

408-6.5 The Review Authority may approve a modification to the dimensional standards in Section 408-6 based on findings that the application of these standards creates a conflict with the standards of Article V or other traffic safety concerns identified through the development review process and that the modification is the minimum necessary to address the constraint.

RESPONSE: The applicant is requesting a modification under the provisions of Section 408-6.2.G.(1), (2), and (3). This section is not applicable.

409 - PRIVATE STREETS

A private street means any way that provides ingress to, or egress from, property by means of vehicles or other means, or that provides travel between places by means of vehicles, and over which the public has no right of use as a matter of public record.

409-1 Intent and Purpose

It is the intent of this Section to regulate the development of certain private streets to ensure that they are constructed to meet minimum safety and structural standards for their intended use, and that maintenance of these facilities is provided for.

409-2 Applicability

409-2.1 The requirements of Sections 409-3 and 409-4 shall apply to the development of private streets inside an urban growth boundary for the following:

A. Single-family and duplex residential:

- (1) Private streets over 100 feet in length;*
- (2) Private streets which serve three or more lots or units; or*
- (3) Private streets for flag lots.*

RESPONSE: The proposed private street will serve all 15 lots, plus the existing house (TL 2400), which was separated from the subdivision by PLA. The street will be more than 100 feet in length. Therefore, this section is applicable.

B. Commercial, industrial, institutional, and multi-family residential:

- (1) Which provide access to more than one parcel, development, or multiple uses on a single parcel or development, and;*
- (2) Which is not a parking aisle or parking lot driveway.*

RESPONSE: This is a single-family residential development. Therefore, these criteria are not applicable.

409-2.2 The requirements of Section 409-5 shall only apply to private streets outside an urban growth boundary.

RESPONSE: This development is within the Metro UGB. Therefore, Section 409-5 is not applicable.

409-2.3 In transit oriented districts, all private streets shall meet the requirements of Section 431. In the event there is a conflict between the requirements of Section 431 and this Section, the requirements of Section 431 shall control.

RESPONSE: This development is not within a transit-oriented district. Therefore, Section 431 is not applicable.

409-3 Urban Private Street Standards

409-3.1 A private street may be permitted when all of the following criteria are met:

A. The street is not needed to provide access to other properties in the area in order to facilitate provisions of the applicable Community Plan(s), the Transportation Plan, or Section 431, access spacing, sight distance, and circulation standards and requirements, or emergency access standards or concerns;

RESPONSE: Based on discussions with County staff it has been determined that this street is not needed to provide access to other properties in the area in order to facilitate provisions of the applicable Community Plan(s), the Transportation Plan, or Section 431.

B. The street is not designated as a proposed facility in the Transportation Plan, or is not identified as a public street in the applicable Community Plan or by the requirements of Section 431;

RESPONSE: The street is not designated as a proposed facility in the Transportation Plan, and is not identified as a public street in the applicable Community Plan or by the requirements of Section 431.

C. The street is not designated as a public street by a previous land use action, or by a study adopted by the county;

RESPONSE: This street is not designated as a public street by a previous land use action, or by a study adopted by the county.

D. The street does not serve as a collector or arterial street, or as a Special Area Commercial Street; and

RESPONSE: This street does not serve as a collector or arterial street, or as a Special Area Commercial Street.

E. In transit oriented districts, the street is permitted as a private street by Section 431.

RESPONSE: This development is not within a transit oriented district. Therefore, Section 431 is not applicable.

409-3.2 Notwithstanding the above criteria for access spacing, circulation, emergency access, and collector function, the Review Authority may approve a private street in conjunction with a proposed development upon adequate findings from the applicant that environmental or topographic constraints make construction of a public street impractical and that no serious adverse impacts will occur to surrounding properties or roads.

RESPONSE: In pre-application discussions the County determined that a public street was not necessary, and the no serious adverse impacts will occur to surrounding properties or roads if the street was not designed to extend to serve other surrounding properties. Application of the private street standards allows for less impact to the significant natural resource area than would otherwise occur through use of the wider public street right-of-way requirements, including less impact to the Drainage Hazard Area.

409-3.3 All streets proposed to be of private ownership inside the UGB shall conform to the following standards:

A. Local Residential Streets:

		STRUCTURAL STANDARDS			
	*FUNCTION	**MIN. PAVEMENT WIDTH	SECTION	CURBS	SIDEWALKS
	Two-way				
(9)	9 or more units	24 ft.	(3)	****Yes	****Both Sides

RESPONSE: The proposed private street will be a local residential street, serving up to 16 lots including the existing house on adjusted tax Lot 2400. Therefore, the minimum paved width is 24 feet.

The applicant is proposing a 28-foot-wide street to allow for on-street parking on both sides. However, the pavement width of the north-south leg from the intersection with NW Leahy Road is narrowed to 24 feet, to minimize (Tract A) resource impacts. Along this north-south stretch the applicant will construct a sidewalk only on the east side of the street, in accordance with Note **** of Section 409-3.3.A., in order to eliminate unnecessary resource impacts as no dwelling units will be able to access the street from the west. Sidewalks on the west side of the private street may be constructed with the development of Tax Lots 400 and 2400, as and when further development occurs. The hammerhead portion of the private street is 24 feet in width, which exceeds the requirements of Section 409-3.3 and the Fire Code Applications Guide. Curbs will be provided on both sides of the street.

C. Private Street Length:

For the purpose of this Section, private street length shall be measured as the distance between the near side curb line of the intersecting street and the far edge of pavement of the private road, including any turnaround.

RESPONSE: The proposed street will be approximately 795 feet in length up to the turnaround. However, the street is proposed at the maximum width regardless of length.

D. Private Street Width:

The entire length of the individual private street tract shall maintain the required paved width based on the total units or ADT as specified in

Section 409-3.3 A. or B. Tapering of the private street width is not allowed. Emergency turnarounds designed in accordance with approved Fire Marshal standards are exempt from this restriction.

RESPONSE: The proposed street is 24 feet in width along the north-south leg, from the intersection with NW Leahy Road. As the road turns east it widens to 28 feet until the turnaround, where the hammerhead turnaround is 24 feet in width. At all times, the private street width will meet or exceed the minimum 24-foot standard.

- E. *Accessory Dwelling Units (430-2) do not count as units for purposes of determining the applicable private street standards.*

RESPONSE: No accessory units are proposed or counted in determining the street width.

409-3.4 Private Street Design and Construction

A. Construction Plans

- (1) *Construction plans for private streets constructed per Sections 409-3.3 A(3), A(8—11), or B(10—19) shall be prepared by a registered civil engineer. Prior to final approval, written certification shall be provided by the engineer that the proposed design complies with the applicable requirements of Sections 409-3.3, 409-3.5 and 409-3.6, any modifications approved pursuant to Section 409-3.8 and in accordance with the preliminary approval.*
- (2) *Construction plans for private streets constructed per Sections 409-3.3 A. (1, 2, 4, 5, 6 or 7) are not required to be prepared by a civil engineer unless the applicant chooses to construct the street in accordance with the County road standards as provided by Section 409-3.6 A.(1).*
- (3) *Final construction plans for all private streets shall be submitted prior to final approval.*

RESPONSE: Once preliminary planning approval is secured, construction plans will be prepared by a registered engineer and submitted for County review during the Final Approval and Building Permit reviews. The plans will be designed and constructed consistent with the standards set forth in Sections 409-3.4 A. & B.

B. Private Street Construction

- (1) *Private streets constructed per Section 409-3.3 A. (3), A (8—11), or B (10—19) shall be constructed prior to final plat approval for land divisions; or prior to occupancy or issuance of a certificate of occupancy for commercial, industrial, institutional or multi-family development, whichever occurs first. The applicant's engineer shall provide written certification that the street(s)*

has been constructed in accordance with the certified final construction plans.

- (2) *Private streets constructed per Section 409-3.3 A. (1, 2, 4, 5, 6, or 7) shall be constructed prior to final plat approval unless approved otherwise by the Director. The applicant's engineer or contractor shall provide written certification that the street was constructed in accordance with the final construction plans prior to final approval, or prior to issuance of any building permit within the development when the Director permits the street to be constructed after final approval.*

RESPONSE: In accordance with Section 409-3.4.B(2) above, and is standard practice with subdivision development in Washington County, the applicant requests to defer construction of the private street in Tract C until after final approval, in order to construct the private and public improvements for the site concurrently. It is noted that the existing dwelling on Tax Lot 2400 will be provided access to the existing driveway and during construction as necessary. Further, the dwelling will have frontage to Leahy Road meeting the flag lot requirements of the R-5 District.

409-3.5 Private Street Tracts

The pavement width, and curbs, if any, of all private streets, except private streets serving one or two single-family residential lots or parcels, shall be located in a tract which meets the provisions of Section 409-4. Sidewalks may be located outside a tract on individual lots or parcels when approved by the Review Authority provided the following standards are met:

- A. The sidewalk shall be located in an easement; and*

RESPONSE: All curbs associated with the private street will be located within Tract C. Sidewalks will be located within an easement over the lots.

- B. Except in transit oriented districts, a minimum 20-foot setback to the garage vehicle entrance, measured from the sidewalk or easement for public travel, whichever is closest shall be provided. In transit oriented districts, the minimum setback to the garage vehicle entrance shall be no less than the minimum setback required by Section 375 or Section 431.*

RESPONSE: This development is not within a transit-oriented district. Therefore, the 20-foot garage setback is applicable. A 20-foot setback has been provided to the garage vehicle entrance per the requirements of the R-5 District and to meet the off-street parking requirements of Section 413. Final compliance with this standard is determined through the building permit process.

409-3.6 Structural Section Key:

All private streets shall be constructed to the following minimum standards as identified in Section 409-3.3:

A. Structural Section Type:

...

- (3) Two-inch Type "C" AC over 2-inch Type "B" AC over 2 inches of three-quarter minus and 6 inches of 2-inch minus compacted crushed rock or in accordance with the standards of the Washington County Road Design and Construction Standards.*

RESPONSE: The proposed private street has been designed to meet or exceed the requirements of Structural Section (3), above. Documentation of compliance with this standard will be provided as required by Sections 409-3.4.A and B.

409-3.7 Emergency Service and Solid Waste and Recycling Collection Provider Access:

A dead-end private street (includes alleys) exceeding 150 feet in length shall have an adequate turn around facility designed in accordance with approved Fire Marshal standards unless:

- A. The Fire Marshal determines that a turnaround is not needed to provide emergency service vehicle access; and*
- B. The solid waste coordinator for the Washington County Health & Human Services Solid Waste and Recycling Program determines that a turnaround is not needed to provide solid waste and recyclable collection vehicle access.*

RESPONSE: The private street will exceed 150 feet in length and has been designed with an adequate turn-around to support emergency and other service vehicles. An approved Service Provider Letter from TVF&R has been submitted with this application.

410 GRADING AND DRAINAGE

410-1.2 Grading Plan

The grading plan shall include:

- A. A vicinity map.*

RESPONSE: The Preliminary Plat contained with this application packet includes the required vicinity map.

B. A site plan which includes the following:

1. The preliminary grading plan is drawn at twenty (20) feet to the inch.
2. The existing and proposed topography is shown using 2-foot and 10-foot contour intervals.
3. Item 3 does not apply because the site is within the UGB.
4. The finished grade contours represent the proposed elevations after grading. No modifications to drainage channels will occur with this project.
5. Retaining walls are shown on the plan set.
6. The proposed grading plan contains a cross section of the site where the most impact and detail occurs.
7. The grading plan shows the area of the site where construction, grading, cut or fill is proposed, plus at least fifty feet surrounding the area.
8. The existing conditions plan in this application packet shows flow lines of surface waters onto and off the site.
9. Building pads and finish floor elevations are not proposed at this time. Areas with an impervious surface and street elevations have been shown on the grading plan.
10. Existing and proposed drainage are demonstrated on the plans. The proposed storm water management facilities have been shown on the plans.
11. All of the applicable facilities for storage and conveyance of runoff have been shown on the preliminary plans.
12. The location of buildings and accessways existing and proposed on the site and within 50 feet of the site are shown on the preliminary plans.
13. Proposed streets have been identified on the plans.
14. The proposed project will require minimal stockpiling. The location is shown on the grading plans.

RESPONSE: The Preliminary Grading Plan and other plans submitted with this application packet include the criteria listed in Section 410-1.2 B as shown above. These criteria have been met.

C. Written narrative and/or supplemental information including all of the following:

- (1) *Explanation of the reason for the proposed grading, which must be an allowed use in the district;*

RESPONSE: The proposed grading is for the development of single-family detached dwellings, an allowed use in the district. The grading activities will also provide for utility installation, streets and sidewalks for the proposed subdivision.

- (2) *Estimates of surface area disturbed by proposed grading and total parcel size;*

RESPONSE: The proposed grading area consists of approximately 130,000 square feet, including the work required for access improvements and access to the CWS water quality facility. The total parcel size is 4.49 acres as surveyed, prior to dedication of right-of-way for NW Leahy Road.

- (3) *Estimates of cut/fill volume in cubic yards; and*

RESPONSE: The estimated cut/fill volume for the project is approximately 3,777 cubic yards of cut and 6,719 cubic yards of fill resulting in a net fill of 2,935 cubic yards. Site stripping will total an additional 8,147 cubic yards.

- (4) *Estimates of existing and increased runoff resulting from the proposed improvements.*

RESPONSE: The estimated existing runoff during the 25-year return event is 2.27 cubic feet per second (cfs) and the resulting runoff from the proposed improvements will be 2.59 cfs. It is noted, however, that stormwater will be detained onsite to a level where runoff from the site will have a released outflow of 1.9 cfs, which is less than the existing 25-year condition. See the included Storm Drainage Report for further details.

- (5) *Soil Map, including a soil survey legend, range of percent slopes (e.g., three [3] to seven [7] percent slopes), and soil description if no limitations exist from the USDA, Soil Conservation Service, Soil Survey Report, Washington County, July 1982. Soil limiting features must address depth to bedrock from pages 120-123 from the report, and other features which may be restrictive to construction, drainage and revegetation of property;*

RESPONSE: Soils map information is included in the Storm Drainage Report included in the application packet. The existing slopes of the site are represented on the plan set, also contained within this application packet.

- (6) *Provision for saving the site topsoil (surface 12") for later revegetation and landscaping, including the locations of any temporary stockpile areas;*

RESPONSE: The site topsoil will be dispersed on the unbuildable portions of the new lots for revegetation and landscaping.

- (7) *Provisions for the disposal of excavated material, including the location of disposal;*

RESPONSE: Material that is excavated from the site will be placed on unbuildable portions of the lots. The site, as designed, is expected to require the importation of 2,935 cubic yards of fill material.

- (8) *Written statement demonstrating the feasibility of complying with Section 410-3. Demonstrating feasibility does not require detailed solutions, but there must be enough information for the review authority to find that solutions to problems are possible and likely.*

RESPONSE: The response to Section 410-3 contained within this narrative shows compliance with this criterion.

D. Erosion Control Plan:

RESPONSE: The erosion control plan will be submitted to the Washington County Engineering Department during the Engineering Review stage. Erosion control plans are not required for land divisions at the preliminary review stage.

410-2 *Grading Permit – Application Content*

410-2.2 *In addition to the grading plan requirements of Section 410-1.2, and application for a grading permit shall include:*

- A. *If required by the Building Official, a compaction report where a site is proposed to be filled to be used for a building pad;*

RESPONSE: The Building Official has not requested a compaction report at this time.

- B. *If required by the Building Official, a soil engineering report, including data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and criteria for corrective measures when necessary, and opinions and recommendations covering adequacy of sites to be developed by the proposed grading;*

RESPONSE: The Building Official has not requested a soil engineering report at this time.

- C. *If required by the Building Official, an engineering geology report, including a description of site geology, conclusion and recommendations regarding the effect of geologic conditions on the proposed development, and opinions and recommendations covering the adequacy of sites to be developed by the proposed grading; and*

RESPONSE: The Building Official has not required an engineering geology report at this time.

- D. *Intended means of revegetation, pursuant to Section 410-3.4, including the location, species, container size and quantity of plant materials proposed, and the proposed time of planting.*

RESPONSE: The areas where native vegetation is proposed for removal and which are not planned to be occupied by structures or landscaped will be covered with the topsoil removed

from the surface six inches. These areas will then be seeded with a native grass/perennial mix after the completion of construction. This activity will be completed prior to September 1st of the year the project is built.

410-3 Criteria for Approval

A grading permit, which shall apply only to the area of the site where construction, grading, cut or fill is proposed, may be issued only after the Review Authority finds:

- 410-3.1** *The extent and nature of proposed grading is appropriate to the use proposed, and will not create site disturbance to an extent greater than that required for the use;*

RESPONSE: The extent and nature of the proposed grading is appropriate to the use proposed. In order to construct the subdivision, grading activities are required to build the streets, sidewalks, utilities, and building pads. Site disturbance will be kept to a minimum and will not extend beyond what is necessary to complete the project.

- 410-3.2** *Proposed grading will not cause erosion to any greater extent than would occur in the absence of development or result in erosion, stream sedimentation, or other adverse off-site effects or hazards to life or property; and*

RESPONSE: The proposed grading will implement erosion control methods that will mitigate erosion that could occur to a greater extent than would occur in the absence of the development. Protective measures will ensure that no erosion, stream sedimentation or other adverse off-site effects occur. The steepest slopes on site are not proposed for development.

- 410-3.3** *Appropriate siting and design safeguards shall ensure structural stability and proper drainage of foundation and crawl space areas for development with any of the following soil conditions:*

- A.** *Seasonal, perched, high or apparent water table;*
- B.** *High shrink-swell capability;*
- C.** *Low bearing strength such as compressible organic; or*
- D.** *Shallow depth-to-bedrock.*

RESPONSE: No negative soil conditions have been observed at this time.

410-3.4 *Revegetation:*

Where natural vegetation has been removed through grading in areas not affected by the landscaping requirements and that are not to be occupied by structures, such areas are to be replanted as set forth in this subsection to prevent erosion after construction activities are completed.

A. Preparation for Revegetation:

In preparation for grading and construction, top soil removed from the surface twelve (12) inches shall be stored on or near the sites and protected from erosion while grading operations are underway. Such storage may not be located where it would cause suffocation of root systems of trees intended to be preserved.

After completion of such grading, topsoil is to be restored to exposed cut and fill embankments or building pads to provide a suitable base for seeding and planting.

RESPONSE: The areas on the site where grading will occur and are not affected by the landscaping requirements and are not to be occupied by structures will be re-vegetated. Topsoil removed during the initial construction phases will be stored on site in a manner that protects it from erosion while grading operations are underway. The topsoil will be placed in a location where it will not suffocate root systems of trees that may remain. The topsoil will be restored after construction to provide a suitable base for seeding and planting.

B. Methods of Revegetation:

Acceptable permanent or temporary vegetation measures appropriate for the site and soil drainage conditions shall be seeded and fertilized by September 1st of each year. Establishment or green growth should take place by October 1st of each year, but is dependent upon suitable fall moisture. Where lawn or turf grass is to be established, lawn grass seed or other appropriate landscape cover is to be sown at not less than four (4) pounds to each one thousand (1,000) square feet of land area. Other revegetation methods offering equivalent protection may be approved by the Review Authority. Plant materials are to be watered at intervals sufficient to assure survival and growth. Native plant materials are encouraged to be used to reduce irrigation demands.

RESPONSE: The site will be re-vegetated in a permanent manner appropriate for the site and soil drainage conditions prior to September 1st of the year the project is built.

410-3.5 Final Contours:

Contours, elevations and shapes of finished surfaces are to be blended with adjacent terrain consistent with land use and surface water management requirements to achieve a consistent grade and transition to the adjacent properties. Tops of cut slopes and bottoms of fills are to be rounded off to a minimum radius of five (5) feet to blend with the natural terrain. This section is not applicable to retaining walls.

RESPONSE: The contours, elevations and shapes of finished surfaces will be blended with adjacent terrain consistent with land use and surface water management requirements to achieve a consistent grade and transition to adjacent properties. The cut slopes and bottoms of fills will be rounded off and will blend with the natural terrain.

- 410-3.6 *Except for permitted piping and culverting, the proposed grading protects and preserves existing natural drainage channels;*

RESPONSE: The proposed grading will not impact existing natural drainage channels in the local area.

- 410-3.7 *The proposed grading will preserve the functioning of off-site drainage courses or bodies of water;*

RESPONSE: The function of any off-site drainage courses or bodies of water will not be affected by this development.

- 410-3.8 *Comply with the applicable standards for permanent storm water quality control facilities adopted by the Oregon State Department of Environmental Quality, as set forth in OAR 340-41-455(3)(d-h). This standard is satisfied by submittal of a service provider letter from the Clean Water Services indicating the proposed development is in compliance with DEQ requirements or will be in compliance when the requirements set forth in the service provider letter are met.*

RESPONSE: The service provider letter from Clean Water Services has been included in the application package.

413 SCREENING AND BUFFERING

411-1 Applicability

- 411-1.1 *Screening and Buffering requirements are in addition to the setback requirements in residential and institutional districts and inclusive of the setback requirements in the commercial and industrial districts, as well as the setback requirements and design standards of the transit oriented districts, and shall be provided on the subject site at the time of development.*
- 411-1.2 *Screening and Buffering shall apply to all Development permits as determined in Section 411-3 or as determined by the Review Authority.*

411-2 Location

Screening and Buffering shall be located on the perimeter of a lot or parcel, extending to the lot or parcel boundary line. Buffering shall not be located on any portion of an

existing or dedicated public or private street or right-of-way. In a case of two overlapping types of buffers, the higher type shall prevail.

411-3 Determination of Screening and Buffering Requirements

411-3.1 To determine the type of Screening and Buffering required, the following procedure shall be used:

- A. *Identify the primary district of the subject site by referring to the applicable Community Plan;*
- B. *Identify the primary district(s) of the surrounding properties by referring to the applicable plan(s);*
- C. *Determine the Screening and Buffering type by referring to the Screening and Buffering Matrix (Section 411-5); and*
- D. *Determine the Screening and Buffering Standards by referring to the Screening and Buffering Standards (Section 411-6).*

RESPONSE: The entire site and all abutting parcels are designated R-5 in the Cedar Hills-Cedar Mill Community Plan. Based on the Screening and Buffering Matrix of Section 411-5 no buffering or screening is required between the site and surrounding development. Therefore, the criteria of Section 411 are met or otherwise not applicable.

413 - PARKING AND LOADING

413-4 Off-Street Parking Standards

413-4.11 The minimum driveway width for each single-family attached or detached dwelling unit with individual vehicular access to a street shall be 10 feet. The minimum driveway depth for single-family detached and single-family attached units shall be consistent with standards of the primary district for setbacks to garage vehicle entrance. Each 10-foot wide by 20-foot deep area within a driveway may be counted as one off-street parking space.

RESPONSE: This development is for 15 proposed single-family detached units.

While home designs have not been confirmed, as currently configured all of the homes are expected to include at least a 2-car wide garage, with a 2-car driveway a minimum 20-feet wide by 20-feet deep for a total of 4 off-street spaces. The final provision of off-street parking may change with the final home designs, however as demonstrated below the site has sufficient on-street parking available to accommodate changes in off-street parking and meet the requirements of this section.

413-5 On-Street Parking Requirements for Urban Residential Districts

The following on-street parking standards shall apply to all urban residential districts, including Transit Oriented Districts:

- 413-5.1. *For single family detached dwelling units and single family attached dwelling units with individual on-site parking and individual vehicular access to a local or Neighborhood Route public or private street, the following on-street parking shall be provided:*
- A. *For a dwelling with one off-street parking space, a minimum of two on-street parking spaces shall be provided within 200 feet of the subject lot, except as provided in Sections 413-5.1 D. or 413-5.3.*
 - B. *For a dwelling with two off-street parking spaces, a minimum of one on-street parking space shall be provided within 200 feet of the subject lot, except as provided in Sections 413-5.1 D. or 413-5.3.*
 - C. *For dwellings with more than two (2) off-street parking spaces, a minimum of one (1) on-street parking space for every two (2) lots with more than two (2) off-street parking spaces shall be provided along the frontage of those lots, except as provided in Sections 413-6.1 D. or 413-6.3.*
 - D. *The requirements for on-street parking are not applicable to flag lots or lots that are provided access from the terminus of a non-through street (e.g., cul-de-sac bulb or hammerhead).*

- 413-6.2 *Required on-street parking shall be provided along the affected lot's street frontage...*

RESPONSE: The proposed subdivision creates 15 lots, each to be developed with detached single-family dwellings.

Lots 3 through 7 are accessed from the hammerhead portion of Tract C. These 5 lots are not required to accommodate on-street parking in accordance with Section 413-6.1.D. Therefore, the on-street parking requirement is based on remaining 10 lots.

As described above, it is anticipated that all homes will include at least a two-car wide garage, with a 2-car driveway for a total of 4 off-street spaces. However, the home designs for the lots have not been completed and may vary depending on final market demand, and as such there may be some variability in the number of off-street spaces provided. The Community Development Code only provides credit for 2 or more spaces, and thus such the on-street parking requirement does not change with the provision of additional spaces. Accordingly, based on the provision of 2 or more off-street spaces per unit, the following on-street parking range is required for the 10 applicable lots:

10 lots @ more than 2 spaces x 0.5 spaces = 5 spaces

The private street within Tract C is proposed to be improved with sections of 24-foot width and 28-foot width. As shown on the Preliminary Street Plan (P4), 35 on-street spaces will be available within the development. This exceeds the requirement for 5 spaces.

413-6.3 Portions of the on-street parking required by Section 413-6.1 may be provided in parking courts that are interspersed throughout a development when the following standards are met:

RESPONSE: The applicant is not proposing any parking courts. Therefore, this criterion does not apply.

413-9 Minimum Off-Street Parking Requirements

The minimum number of off-street parking spaces by type of use shall be determined in accordance with the following:

413-9.1 Residential:

A. Detached One (1) per each dwelling unit

RESPONSE: The proposed lots are sized and designed with sufficient size to accommodate good sized homes, and allowing for more than 2 off-street parking spaces per detached dwelling unit. Therefore, this criterion will be met.

416 UTILITY DESIGN

416-1 General Provisions

416-1.1 All utility distribution facilities supplying electric, communication, or similar or associated service, installed in and for the purpose of supplying such service to any development shall be placed underground; provided however, that the word "facilities" as used herein shall not include standards used for street lighting, traffic signals, pedestals for police and fire system communications and alarms, pad-mounted transformers, pedestals, pedestal-mounted terminal boxes and meter cabinets, concealed ducts, substations, or facilities used to carry voltage higher than fifty thousand (50,000) volts.

416-1.2 Notwithstanding Section 416-1.1, overhead utility distribution lines may be permitted upon approval of the Review Authority through a Type I procedure when terrain, soil, or geologic conditions prohibit underground installation, or when proposed development is part of an urban infill process and

surrounding developments do not have underground utilities. Location of such overhead utilities shall be along rear or side lot lines wherever feasible.

- 416-1.3 *Easements necessary for sewers, water mains, electric lines, stormwater facilities, or other public utilities shall be provided. The easements will vary according to the need of various utilities. When possible, the easement shall be located on one side of a lot line.*
- 416-1.4 *The location, design, installation and maintenance of all utility lines and facilities shall conform to ORS Ch. 92 and be carried out with minimum, feasible disturbance of soil and site.*

RESPONSE: Typical for improvements on arterial and collector streets, the existing overhead utilities will be retained and relocated as necessary to avoid the proposed public frontage improvements on NW Leahy Road. All new utilities will be located underground, as required, and will include all required utility easements. The location, design, installation and maintenance of all utility lines and facilities will conform to ORS Ch. 92 and be carried out with minimum, feasible disturbance of soil and site.

418 SETBACKS

RESPONSE: The required yards will remain unobstructed aside from the exceptions allowed in Section 418-1.

- 418-2.1 *Where a yard or setback abuts a street having insufficient right-of-way width, the minimum yard or setback requirement shall be increased by half the additional right-of-way necessary to meet the County Standard.
Classification of streets and roads shall be determined by the Transportation Plan, including the Functional Classification Transportation System Map.*
- 418-2.2 *Prior to issuance of a building permit where the land use action is subject to growth management, an applicant shall dedicate the additional right-of-way to meet the County Standard. Notwithstanding the above, outside the UGB, dedication of additional right-of-way to meet the County standards shall be required prior to the issuance of any building permit where required as a valid condition of approval.*
- 418-2.3 *Setback requirements shall be determined from future rights-of-way as set forth by the official Washington County Functional Classification System Map, and as indicated on the Washington County Transportation Plan.
When a stub street abuts a site, the property owner shall place all on-site structures in such a way as to not preclude extension of that stub street into or through the site.*

RESPONSE: The subject property abuts the north side of NW Leahy Road east of 107th Avenue. NW Leahy Road is a designated as 3-lane collector street, C-1 standard. The existing

right-of-way is 20 feet to center line. The County's C-1 collector standard calls for a 37-foot centerline section. Therefore, the applicant will dedicate an additional 17 feet of right-of-way.

418-3 Corner Vision

RESPONSE: Adequate sight distance will be provided for all lots within the development, consistent with County standards.

419 HEIGHT

In addition to the height restrictions in the primary districts, the following limitations shall apply:

419-1 *Within twenty (20) feet of another primary district with a lower height restriction, the height restriction of the adjacent district shall apply.*

RESPONSE: The subject site is not adjacent to, nor is it within twenty (20) feet of another primary district with a lower height restriction. This criterion does not apply.

419-2 *Beyond the twenty (20) foot area in Section 419-1 above, the height may increase on the subject property at a ratio of one (1) foot of height to one foot of horizontal distance from the adjacent primary district with a lower height limitation, to the maximum height permitted in the primary district.*

RESPONSE: The subject site is not located within a distance that warrants a height restriction less than that required for the proposed development site. This criterion does not apply.

419-3 *A fence, lattice work, screen or wall (includes retaining wall) not more than seven (7) feet in height may be located in any required side, front or rear yard...*

RESPONSE: The requirements of this Section regarding fencing, lattice work or walls are to be followed by the builder/owner of each lot.

419-4 *A combination fence and retaining wall structure may be located in a side or rear yard. This structure shall consist of a retaining wall [not more than four (4) feet in height] and a fence [not more than six (6) feet in height]. The fence portion shall be measured from the back-filled or highest side of this structure and may not exceed six (6) feet in height. The non-back-filled or lowest side measurement may not exceed a combined total of ten (10) feet in height. This provision may only be used when there is an existing or proposed grade difference between properties and a retaining wall is required by the Building Official (see Figure 1). This structure is exempt from a structural building permit*

only when the backfill is level for a proportional horizontal distance to the height of the retaining wall or as approved by the Building Official.

419-5

Tiered retaining wall structures shall not exceed seven (7) feet in height in any required yard. The maximum height measurement includes all tiers located within the yard or setback area. All non-tiered retaining walls located within the yard or setback area shall not exceed a combined total of seven (7) feet in height.

RESPONSE: The applicant is proposing limited retaining walls at this time associated with the stormwater facility within Tract A; along NW Leahy Road, and along the southern portion of the private street adjacent to the significant natural resource area. The location and design of these walls will be confirmed as part of the Grading and Site Development permit applications, but will be designed to minimize work within the Drainage Hazard Area associated with the street crossing, also located in the southern portion of the property. As proposed, the current maximum height of retaining walls is 6 feet. All walls or fencing installation will be in compliance with this criterion.

421 FLOOD PLAIN & DRAINAGE HAZARD AREA DEVELOPMENT

421-1 Lands Subject to Flood Plain and Drainage Hazard Area Standards

421-1.2 Drainage Hazard Areas

The following data sources shall be referenced for purposes of determining lands subject to drainage hazard area standards. In any event, the most restrictive flood boundary information shall be utilized. The maps referenced herein are on file at the offices of the Washington County Department of Land Use & Transportation.

- A. *"Flood Plain Series, Washington County, Oregon, revision 5/01/1974, 1/03/1978, 1/1981, 5/25/1983 and 12/12/1983" based upon data from the U.S. Army Corps of Engineers.*
- B. *In addition, the Director shall obtain, review and reasonably utilize any flood elevation data available from a federal or state source, or hydrologic and hydraulic analysis performed in accordance with standard engineering practice by a licensed professional engineer, in order to administer this Section.*
- C. *In addition to the information sources identified in A. and B. above, the Director may also utilize any other available authoritative flood data, including but not limited to high water marks, photographs of past flooding or historical flood data.*

RESPONSE: As shown on site plans submitted with the application, the subject property includes an area of Washington County designated Drainage Hazard Area (DHA), associated with the unnamed tributary of Johnson Creek which runs east to west across the southern portion of the site, adjacent to NW Leahy Road. In order to assess the extent of the DHA onsite, the applicant's representative met with County Certified Flood Plain Manager Sean

Harrasser on August 23, 2021 and walked the property in the vicinity of the stream. Following the site visit, the applicant's representative has prepared a Preliminary Storm Drainage Report, including Appendix 'C' – Drainage Hazard Area Analysis, to determine and delineate the extent of lands subject to the drainage hazard area standards. The requirements of this Section have been met.

421-1.3 Persons seeking to develop within a flood plain or drainage hazard area must do so with the understanding that they and their successors assume the risks and that the risks cannot be eliminated, even with strict compliance with the standards adopted herein. This Section does not imply that lands outside of flood plain or drainage hazard areas, or development permitted within, will be free from flooding or flood damage.

RESPONSE: The applicant understands and acknowledges the potential risks associated with development of land within or adjacent to a flood plain or drainage hazard area.

421-3 Submittal Requirements

In addition to the requirements of Sections 203-4 and 410, an application for a flood plain or drainage hazard area alteration shall contain the following information for the area proposed to be disturbed. This information shall be prepared by a licensed professional engineer and may be submitted with or be made part of a site plan or grading plan for the proposed development.

421-3.1 Recognizing that the scale may be such that the true and accurate flood plain or drainage hazard area boundaries cannot be determined from the maps referenced in Sections 421-1.1 and -1.2 alone, all persons seeking a development permit for lands within said areas and within 250 feet of the map boundary of a flood plain or drainage hazard area identified in Sections 421-1.1 and -1.2, except as noted below for land divisions and property line adjustments, shall submit with the development permit application:

...

B. A delineation of the drainage hazard area and the drainageway, established by a registered engineer or a registered surveyor from surface elevations for the drainage hazard area based upon maps or other data sources referenced in Section 421-1.2. Such delineation shall be based on mean sea level datum and be field located from recognized landmarks.

...

D. For each of the above, submitted plans shall be accurately drawn and at an appropriate scale that will enable ready identification and understanding of the submitted information. The plans shall include the locations of any existing or proposed property lines, buildings, structures, parking areas, streets, accessways, or other relevant information on the subject property, and within 50 feet of the delineation.

RESPONSE: As calculated within Appendix ‘C’ – Drainage Hazard Area Analysis of the submitted Preliminary Storm Drainage Report, and as shown on the included Drainage Hazard Area Analysis Profiles and Exhibit, the 25-year water surface elevations through the site are 368.90 feet along the western boundary of the existing roadway and 380.11 feet along the eastern property boundary. These elevations are based on the 25-year flow rate of the existing drainage basin and the proposed development, and are shown on site plans submitted with the application including the Preliminary Grading and Erosion Control Plan, Sheet P3, and Site Cross Sections, Sheet P3.1., as prepared by a licensed professional engineer.

421-3.2 *Existing and proposed topography within the boundaries of the flood area using the following contour intervals:*

- A. *For slopes of 5% or less, contour intervals not more than 1 foot;*
- B. *For slopes greater than 5% and up to and including 10%, contour intervals not more than 2 feet; and*
- C. *For slopes greater than 10%, contour intervals not more than 5 feet.*

RESPONSE: Sheet P3.0 – Preliminary Grading and Erosion Control Plan includes existing and proposed topography within and adjacent to the DHA at contour intervals not more than 1 foot.

421-3.3 *For applications for Type II and III flood plain or drainage hazard area alterations, documentation which demonstrates compliance with the applicable review standards of Sections 421-7 through 421-14.*

RESPONSE: The applicant has provided documentation which demonstrates compliance with the applicable review standards of Sections 421-7 through 421-14, as identified below.

421-3.4 *Upon demonstration by the Director of no other alternative, applicants shall obtain a Conditional Letter of Map Revision (CLOMR) from FEMA before an encroachment, including fill, new construction, substantial improvement, fences or other development, in the regulatory floodway is permitted that will cause any increase in the base flood elevation. The CLOMR shall be submitted prior to the application being deemed complete.*

RESPONSE: The subject site does not include any areas of regulatory floodway; therefore, this Section is not applicable.

421-5 *Uses and Activities Allowed Through a Type II Procedure*

Unless specifically prohibited in the applicable Community Plan, the Rural/Natural Resource Plan, CDC Section 422, or Clean Water Services Design and Construction Standards for sanitary sewer and surface water

management, a development permit may be approved in a flood area through a Type II procedure for the following:

- 421-5.18 *Construction or major improvement or alteration of public local streets and private streets within the UGB, or approved as part of a land division, including culverting and piping, accessory drainage systems such as catch basins, and necessary accessory structures.*

RESPONSE: The applicant has proposed limited improvements within the DHA, with only temporary disturbances to replace the existing culverts under the private driveway crossing to the dwelling on Tax Lot 2400. The new box culvert will be sized in accordance with Clean Water Services requirements for stormwater and drainage area management, and will provide greater opportunity for fish passage, along with supporting the new private street serving the subdivision. As noted in response to the requirements of Section 410, the estimated existing runoff during the 25-year return event is 2.27 cubic feet per second (cfs), while post-development stormwater will have a released outflow of 1.9 cfs, which is less than the existing 25-year condition. See the included Preliminary Storm Drainage Report for further details. Accordingly, this section is not applicable.

- 421-7 *Development Standards for all Type II and Type III Flood Plain and Drainage Hazard Area Uses or Activities*

The applicant for a proposed flood plain or drainage hazard area development shall demonstrate compliance with the following applicable standards as required by Section 421-3 above:

- 421-7.1 *Development proposed to encroach into a regulatory floodway adopted and designated pursuant to FEMA regulations shall:*

- 421-7.2 *Notwithstanding Section 421-7.1, development that would result in an increase in flood levels may be approved if the County, at the sole expense of the applicant, first obtains FEMA approval in accordance with 44 CFR Ch. 1, Part 65 (October 1, 1990 edition, or its successor).*

- 421-7.3 *Development proposed on a flood plain site where the development does not encroach into an adopted FEMA regulatory floodway shall demonstrate through hydrologic and hydraulic analysis, performed in accordance with standard engineering practice by a licensed professional engineer, that the cumulative effect of the proposal, when combined with all other existing and anticipated development within the basin based upon full development of the basin as envisioned in the applicable Community Plan or the Rural/Natural Resource Plan, will not increase flood levels during the occurrence of the base flood discharge more than 1 foot.*

- 421-7.4 *In areas where a regulatory floodway has not been designated, no new construction, substantial improvements, or other development (including fill) shall be permitted within flood areas on the Flood Insurance Rate Map (FIRM), unless it is demonstrated through hydrologic and hydraulic analysis, performed in accordance with standard engineering practice by a licensed professional engineer, that the cumulative effect of the proposal, when combined with all other existing and anticipated development within the basin based upon full development of the basin as envisioned in the applicable Community Plan or the Rural/Natural Resource Plan, will not increase flood levels during the occurrence of the base flood discharge more than 1 foot.*
- 421-7.5 *Notwithstanding Sections 421-7.3 and 421-7.4, an increase in flood levels in excess of 1 foot may be approved if the County, at the sole expense of the applicant, first obtains FEMA approval in accordance with 44 CFR Ch. 1, Part 65 (October 1, 1990 edition, or its successor).*

RESPONSE: The development site does not include a regulatory floodway or floodplain; therefore, the above listed standards are not applicable.

- 421-7.6 *Development proposed on a drainage hazard area site shall demonstrate through hydrologic and hydraulic analysis, performed in accordance with standard engineering practice by a licensed professional engineer, that the cumulative effect of the proposal, when combined with all other existing and anticipated development within the basin based upon full development of the basin as envisioned in the applicable Community Plan or the Rural/Natural Resource Plan, will not result in any increase to the drainage hazard area elevation at any point in the community.*

Notwithstanding this provision, an increase may be approved if the area in which the rise will occur contains no structures and the owner of such property signs a written acceptance of any increase in the drainage hazard area elevation.

RESPONSE: As calculated within Appendix 'C' – Drainage Hazard Area Analysis of the submitted Preliminary Storm Drainage Report, as prepared by a licensed professional engineer, there will not be an increase to the water surface or water velocity due to the development. Further, the development will not adversely affect the existing downstream drainage system or the existing drainage hazard area. The requirements of this Section have been met. See the included Preliminary Storm Drainage Report for further details.

- 421-7.7 *Encroachments into a floodway allowed under Section 421-7.1 shall be designed so as to minimize the risk that the encroachment will catch substantial debris or otherwise significantly impede floodwater flows. Designs may include, but are not limited to, adequate sizing of openings, secured breakaway bridges, diverters or spacing of supports.*

RESPONSE: The development site does not include a regulatory floodway; therefore, the above listed standard is not applicable.

421-7.8 *The proposal will not increase the existing velocity of flood flows so as to exceed the erosive velocity limits of soils in the flood area. Energy dissipation devices or other measures to control the mean velocity so as not to cause erosion of the flood area may be used to meet this standard. "Open Channel Hydraulics" by V. T. Chow, McGraw-Hill Book Company, Inc., 1988, is presumed to be the best available reference for maximum permissible velocity. "Hydraulic Engineering Circular No. 14," Hydraulic Design of Energy Dissipators for Culverts and Channels, published by the Federal Highway Administration, September 1983, is presumed to be the best available reference for the design of energy dissipators.*

RESPONSE: The applicant proposes limited improvements within the DHA, with only temporary disturbances to replace the existing culverts under the private driveway crossing with a new box culvert. The box culvert will be sized in accordance with Clean Water Services requirements for stormwater and drainage area management, and will provide greater opportunity for fish passage, along with supporting the new private street serving the subdivision. The elimination of the restriction and occasional blockages caused by the existing smaller culverts will allow the stream to return to a more natural hydrological state, and will not cause flows to exceed the erosive velocity limits of soils in the flood area. As demonstrated in this application and the submitted Preliminary Storm Drainage Report (See Appendix C, Drainage Hazard Area Analysis), the cumulative effect of the proposal will not increase flood levels or velocities during the occurrence of the 25-year flood event.

- 421-7.9 *All cut and fill shall be structurally sound and designed to minimize erosion. All fill below the flood surface elevation shall be accompanied by an equal amount of cut or storage within the boundary of the development site unless:*
- A. *The proposed cut and fill is found to be in compliance with an adopted Drainage Master Plan; or*
 - B. *Off-site excavation will be utilized to balance a fill, provided:*
 - (1) *The off-site excavation area will be part of the application for the development proposing to place the fill;*
 - (2) *The off-site excavation area will be located in the same drainage basin as the proposed fill area;*
 - (3) *The off-site excavation area will be located within points of constriction on the drainage system, if any, and as close to the fill site as practicable. The applicant's licensed professional engineer shall conduct a storage routing analysis to determine the location of the fill;*

- (4) *The off-site excavation area will be constructed as part of the development placing the fill;*
- (5) *Any use or future development of the excavated area shall comply with the standards of Section 421 and Section 422 if the area is designated as a Significant Natural Resource; and*
- (6) *Ownership of the excavated area shall be by one of the following mechanisms:*
 - (a) *Dedication of the area to an appropriate public agency when a public agency is willing to accept the dedication;*
 - (b) *Ownership of the area by the applicant of the proposed development;*
 - (c) *Dedication of the development rights of the area to an appropriate public agency with ownership remaining with the property owner. Maintenance of the area shall be the responsibility of the applicant or property owner; and*
 - (d) *Deed or easement-restricted private ownership which prevents any use or future development of the area as specified by Section 421-7.9 B.(5). Maintenance of the area shall be the responsibility of the applicant or property owner. A contract for conditions shall be required as specified by Section 207-5.3. The contract for conditions shall be recorded in the Department of Assessment & Taxation, Recording Division.*

RESPONSE: The applicant proposes limited improvements within the DHA, with only temporary disturbances to replace the existing culverts under the private driveway crossing with a new box culvert. All cut and fill within the DHA surrounding the box culvert has been designed to be structurally sound and minimize erosion, in accordance with CWS Design and Construction Standards and the Washington County Grading Ordinance, and all work in the DHA will comply with the applicable permitting requirements. Ownership of Tracts A (open space) and C (private street) will remain with the property owner, heirs or assigns, and appropriate easements to CWS for stormwater management, maintenance, and access will be recorded at the time of plat recordation.

421-7.10 *There is adequate storm drainage behind a dike such as a lift pump or flap gate to drain the flood plain or drainage hazard area behind the dike.*

RESPONSE: No dike structures (such as a lift pump or flap gate) are proposed in the DHA; therefore, this standard is not applicable.

421-7.11 *That the environmental impact of the disturbance or alteration of riparian wildlife and vegetation has been minimized to the extent practicable as required by Section 422. Enhancement of riparian habitats through planting or other such improvements may be required to mitigate adverse effects. Significant features such as natural ponds, large trees and endangered vegetation within the flood area shall be protected when practicable.*

RESPONSE: Any environmental impact from the disturbance or alteration of riparian wildlife and vegetation has been minimized and mitigated for in accordance with the Requirements of Section 422 and Clean Water Services Design and Construction Standards. See the narrative response to Section 422 for further details.

421-7.12 *Drainage systems shall be designed and constructed according to the adopted Drainage Master Plan for the area, if one exists.*

RESPONSE: All drainage systems on site will be designed and constructed in accordance with the applicable Clean Water Services requirements for the basin, and in accordance with Clean Water Services Design and Construction Standards.

421-7.13 *Proposed partitions and subdivisions shall minimize flooding by complying with the applicable standards of Sections 410, 421, 426, 605-3.2 and 610-3.1, and Clean Water Services Design and Construction Standards for sanitary sewer and surface water management.*

RESPONSE: The proposed development can and will comply with the standards of Section 410, 421, 426, and the applicable standards of Section 605-3.2., in addition to the standards of Clean Water Services Design and Construction Standards, as required and as further demonstrated within this submittal.

421-7.14 *Public utilities and facilities in proposed partitions and subdivisions shall be located and constructed in a manner that will minimize flood damage.*

RESPONSE: All utilities and facilities, including the private street, will be located in a manner that will minimize flood damage, and designed and constructed to the approval standards of the applicable jurisdiction or service provider.

421-7.15 *Proposed partitions and subdivisions shall provide adequate drainage to reduce exposure to flood damage by complying with the standards of Section 410 and applicable standards of Section 605-3.2 or 610-3.1, whichever is applicable.*

RESPONSE: The proposed development can and will comply with the standards of Section 410 and the applicable standards of Section 605-3.2., as required and as further demonstrated within this submittal.

422 SIGNIFICANT NATURAL RESOURCES

422-1 - Intent and Purpose

The intent and purpose of this Section is to permit limited and safe development in areas with identified significant natural resources, while providing for the identification, protection, enhancement and perpetuation of natural sites, features, objects and organisms within the county, here identified as important for their uniqueness, psychological or scientific value, fish and wildlife habitat, educational opportunities or ecological role.

Development on sites with Significant Natural Resources shall comply with the requirements of this Section and all applicable local, state and federal regulations.

422-2 - Lands Subject to this Section

Those areas generally identified in the applicable community plan or the Rural/Natural Resource Plan Element as one of the Significant Natural Resources described below and verified on-site through the process described in Section 422-3.1. Areas identified as Class I and II Riparian Habitat on Metro's Regionally Significant Fish & Wildlife Habitat Inventory Map shall be evaluated using the field verification methodology and process in Section 422-3.1.

Significant Natural Resources have been classified in the community plans or the Rural/Natural Resource Plan Element by the following categories:

422-2.1 Water Areas and Wetlands. 100-year flood plain, drainage hazard areas, ponds, except those already developed.

422-2.2 Water-Related Fish and Wildlife Habitat. Water-related areas that are also fish and wildlife habitat, including the Riparian Corridor.

422-2.3 Upland/Wildlife Habitat. Identified sensitive habitats, including forested areas coincidental with water areas and wetlands.

422-2.4 Significant Natural Areas. Sites of special importance, in their natural condition, for their ecological, scientific, and educational value.

RESPONSE: This application includes a Significant Natural Resource (SNR) Assessment prepared by Environmental Science & Assessment, LLC (ES&A), dated September 9, 2021. The Cedar Hills - Cedar Mill Community Plan identifies Wildlife Habitat on the majority of Tax Lot 2300, and does not map any Wildlife habitat on the western two parcels (Tax Lots 400 and 2400). The plan maps Water Area and Wetlands and Fish and Wildlife Habitat in a corridor passing east-west through the center of the three parcels, however, this mapping is assumed to correspond to the stream running through the site, which flows through the southern end of these parcels. Additionally, the Metro Title 13 inventory maps Riparian Habitat at the southern

end of all three lots, with Class B Upland Habitat mapped in adjacent wooded areas north of the Riparian corridor. Therefore, these criteria apply.

422-3 - Submittal Requirements

An application for development on a site that contains or is within 100 feet of a mapped or otherwise established Significant Natural Resource area as described in Section 422-2 must submit the following materials in addition to the required master plan and site analysis in Section 404.

422-3.1 A Significant Natural Resources Field Verification (Field Verification) that identifies the limits of any applicable Significant Natural Resource area located on the site, as described below.

A. Water Areas and Wetlands. Identification of limits of resources based on the following:

(1) Oregon Department of State Lands (DSL) methodology for delineating water areas and wetlands found in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (1987 Manual) or its successor and/or Chapter 3 of the most current Clean Water Services (CWS) Design and Construction Standards for the Water Quality Sensitive Area (Sensitive Area). Permit/assessment-related materials submitted to DSL or CWS may be used to satisfy this requirement.

(2) Methodology in Section 421 for flood plain and drainage hazard areas.

RESPONSE: Both upland wildlife habitat and waters-related fish and wildlife habitat were field verified onsite. Water areas and wetlands were field verified using the methodology for delineating water areas and wetlands described in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and companion Regional Supplement for Western Mountains, Valleys, and Coast Region (Version 2.0). Please see the Significant Natural Resource (SNR) Assessment prepared by Environmental Science & Assessment, LLC (ES&A), dated September 9, 2021, and included with this submittal for further details. Because the proposed project plans to fill several small wetlands and this area is within the jurisdiction of CWS, both a wetland delineation and CWS Tier II Site Assessment has also been conducted. Concurred wetland delineation WD2019-0503 delineates wetlands and waters on the eastern most parcel, and is also provided with this submittal.

B. Water-Related Fish and Wildlife Habitat. Identification of limits of resources based on the following:

(1) Chapter 3 of the most current CWS Design and Construction Standards for the Vegetated Corridor. A CWS Service Provider Letter may be used to satisfy this requirement.

(2) *Section 106 definition of Riparian Corridor.*

RESPONSE: As described above, both a wetland delineation and CWS Tier II Site Assessment have been conducted on the site in accordance with the requirements of this Section. CWS service provider letter documentation is provided with this submittal.

- C. *Upland/Wildlife Habitat. Identification of limits of resources based on delineation of the outer drip-line boundary of the tree canopy cover identified in Section 422-3.4 (tree inventory) and described in Section 422-3.5 (Habitat Assessment).*

RESPONSE: The upland wildlife habitat boundary was verified using the methodology outlined in Washington County Habitat Assessment Guidelines (Washington County, 2020). A combination of aerial imagery (important to aid in leaf-on canopy cover estimate due to winter field work), site observations, and spherical densiometer measurements were used. Garden areas associated with the home on the western parcel which were within the outer drip-line of the canopy were included. Please see the Significant Natural Resource (SNR) Assessment prepared by Environmental Science & Assessment, LLC (ES&A), dated September 9, 2021, and included with this submittal for further details.

- 422-3.2 *Extent of ground disturbance proposed for development, description of the treatment or proposed alteration to the field-verified Significant Natural Resource area, and identification of the proposed area of preservation when required per Section 422-5.*

RESPONSE: Total field verified upland wildlife habitat SNR within the project area is 110,161-SF (2.53-acres). Of this, 15%, or 16,524-SF, will be preserved per Washington County Community Development Code 422-5.3 A. Option 2. Table 1 below outlines the proposed SNR impacts and current condition within those areas:

Table 1: SNR Habitat Condition Summary

Area	Habitat Condition	Proposed Impact (SF)	Proposed Preservation (SF)
Upland Wildlife Habitat	Good	92,477	16,524
Upland Wildlife Habitat	Marginal	1,160	0
Totals:		93,637	16,524

A combination of good and marginal condition upland wildlife SNR will be impacted, but the entire preservation area consists of good condition upland wildlife SNR. Option 2 was selected because this site is already significantly encumbered by waters and wetlands (8,950-SF/0.21-ac), as well as the CWS VC associated with them (67,467- SF/1.6-ac), so reducing the total preservation area by creating a contiguous corridor allows for residential development of the site as envisioned in the Cedar Hills-Cedar Mill Community Plan for this area.

422-3.3 *A description of how clear and objective design elements of the applicable community plan apply to the urban development site; or how the Rural/Natural Resource Plan Element, Policy 10, Implementing Strategy e. applies to the rural development site.*

RESPONSE: General Design Element 1 is the applicable design element within the Cedar Hills-Cedar Mill Community Plan. As described in response to the Community Plan earlier in this report, General Design Element 1 is applicable as follows:

1. *In the design of new development, floodplains, drainage hazard areas, streams and their tributaries, riparian and wooded areas, steep slopes, scenic features, and powerline easements and rights-of-way shall be:*
 - a. *used to accept, define, or separate areas of differing residential densities and differing planned land uses;*

RESPONSE: Washington County designated these and surrounding properties through a comprehensive planning process following the criteria of this design element. These and surrounding properties are developed or are generally developing in accordance with the R-5 residential densities as required. Land divisions are a permitted activity on the site as specified in the Community Plan for the applicable land use district and the standards of the Community Development Code.

There is a stream with associated wetlands and riparian areas, and fish & wildlife habitat designated on the property that runs northeast to southwest across the southern portion of the site. Tract A containing 62,894 square feet will be preserved and protected consistent with CWS and Washington County standards. The resource area (Tract A) will be located between NW Leahy Road and the proposed lots, and will serve to separate the residential areas of the site from the collector street.

Therefore, this element is met.

- b. *preserved and protected consistent with the provisions of the Community Development Code to enhance the economic, social, wildlife, open space, scenic, recreation qualities of the community; and*

RESPONSE: The resource and habitat area will be preserved and protected as a separate tract (Tract A), which will be located between NW Leahy Road and the proposed lots, in accordance with CWS, DSL requirements, and the requirements of this Section.

- c. *where appropriate, interconnected as part of a park and open space system.*

RESPONSE: The CWS vegetative corridor and its preservation within Tract A provides an opportunity for interconnection of the on-site features with other off-site open space features as they develop as part of a park or open space system. However, at this time THPRD has not

identified the site for acquisition, and is not designated on the THPRD Trails Functional Plan. This element is met.

422-3.4 A tree inventory as required in Sections 404 and 407.

RESPONSE: The Existing Conditions and Demolition Plan (Sheet P2) includes an inventory of all existing trees.

422-3.5 A Habitat Assessment that identifies the size, extent and type of wildlife habitat located in the field-verified Water-Related Fish and Wildlife Habitat and Upland/Wildlife Habitat. The Assessment will evaluate and rate the different habitat values using the methodology outlined in the Habitat Assessment Guidelines.

RESPONSE: The applicant's biologist has completed a full Habitat Assessment in accordance with the Washington County Habitat Assessment Guidelines (Washington County, 2020). Please see the Significant Natural Resource (SNR) Assessment prepared by Environmental Science & Assessment, LLC (ES&A), dated September 9, 2021, and included with this submittal for further details.

422-3.6 For development applications outside the UGB that contain mapped Significant Natural Resources, the Review Authority may, at its discretion, waive submittal requirements of Section 422-3 when proposed development is more than 100 feet from Significant Natural Resource areas mapped as Water Areas and Wetlands or Water-Related Fish and Wildlife Habitat and the submittal addresses how Rural/Natural Resource Plan Element Policy 10, Implementing Strategy e. applies to the development site (Section 422-3.3).

RESPONSE: The site is located within the UGB, therefore this Section is not applicable.

422-4 - Allowable Uses and Activities within Significant Natural Resource Areas

Development within a field-verified Water Area and Wetland and Water-Related Fish and Wildlife Habitat is subject to the following:

422-4.1 No new or expanded alteration of the vegetation or terrain shall be allowed except for the following uses and activities:

- A. Construction, maintenance and repair of streets, street crossings, roads or other public transportation facilities.*
- B. Installation, maintenance or construction of the following utilities: sanitary and storm sewer and water lines, electric, communication and signal lines; and gas distribution and transmission lines.*

RESPONSE: The CWS Site Assessment and wetland delineation addressing water-related fish and wildlife habitat and CWS approval has been provided with this development in accordance with the CWS service provider letter issued for the site. CWS Vegetated Corridor mapping and data is provided in Appendix D, with the approved delineated significant natural resource area to be retained within Tract A.

As proposed, the impacts to Tract A will be limited to the construction of a new private street crossing at the point of the existing driveway access, replacement of the associated culverts, and installation of necessary utilities within the roadway. The requirements of this section are met.

422-4.3 Where development or alteration of the Riparian Corridor is permitted under the above exceptions, the flood plain and drainage hazard area development criteria in Section 421 shall be followed.

RESPONSE: The applicant has demonstrated compliance with the drainage hazard area development criteria in Section 421. See that Section of this report for further details.

422-5 - Tree Preservation in Habitat Area(s)

These standards are intended to encourage the preservation of stands of trees and other vegetation providing habitat value in or near existing habitat, particularly native species, and ensure such preservation occurs prior to development, while allowing development as envisioned in community plans.

422-5.1 Applicability

Inside the UGB, the following tree preservation criteria apply to review of Type II and III development actions. As used in this section, Habitat Area consists of the field-verified Upland/Wildlife Habitat plus any portion of the Riparian Corridor located outside the CWS Vegetated Corridor.

422-5.2 Exceptions

The following are not subject to Section 422-5:

- A. *Tree removal permitted under Section 407-3 (Tree Preservation and Removal).*
- B. *Construction or alteration of a residence or accessory structure when located on an existing lot or parcel created prior to November 27, 2020.*
- C. *A building permit for a previously approved development project, as long as the lotting pattern has not been modified and the land division was approved prior to November 27, 2020.*

D. Development associated with the regionally significant educational or medical facilities at Portland Community College, Rock Creek Campus, 17865 N.W. Springville Road, Portland as identified on Metro's Regionally Significant Educational or Medical Facilities Map.

E. Development on a site with a Habitat Area of less than 2,000 square feet.

RESPONSE: Pursuant to Section 407-3.1, the application is subject to the requirements of this Section.

422-5.3 Required Preservation Area(s)

Preservation of a portion of the total Habitat Area on the development site is required, as follows:

A. The area required for preservation (Preservation Area) shall be determined based on either (1) or (2), below, but shall in no case be less than 500 square feet:

- (1) A minimum of 25% of the Habitat Area (Option 1); or
- (2) A minimum of 15% of the Habitat Area, when located adjacent to an on- or off-site Riparian Corridor or CWS Vegetated Corridor (Option 2).

RESPONSE: As described within the Significant Natural Resource (SNR) Assessment prepared by Environmental Science & Assessment, LLC (ES&A), dated September 9, 2021, the total field verified upland wildlife habitat SNR within the project area is 110,161-SF (2.53-acres). Of this, 15%, or 16,524-SF, will be preserved per Washington County Community Development Code 422-5.3 A. Option 2.

B. The Preservation Area(s) shall:

- (1) Be configured to result in a linear corridor or a cluster of trees.
- (2) If using 422-5.3 A.(2) (Option 2), contain a minimum number of trees and associated understory shrubs, meeting one of the following:

	<i>A</i>	<i>B</i>
Minimum Amount	5 large trees and at least 10 understory shrubs	10 smaller trees and at least 10 understory shrubs
Description	Deciduous canopy trees, as defined in Section 106, of 12" Diameter at Breast	Deciduous canopy trees, as defined in Section 106, of 6" — 12" DBH or

<p><i>Height (DBH) or greater with overlapping canopy or conifer trees of 24" DBH or greater.</i></p> <p><i>Understory shade tolerant perennial woody shrubs with multiple woody stems less than 30' at mature growth.</i></p>	<p><i>greater with overlapping canopy or conifer trees of 12" DBH or greater.</i></p> <p><i>Understory shade tolerant perennial woody shrubs with multiple woody stems less than 30' at mature growth.</i></p>
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C. Additional Standards

Preservation Areas are subject to the following requirements:

- (1) *Native trees and understory vegetation shall be retained.*
- (2) *The Preservation Area shall be enhanced to Good Condition, as defined in the Habitat Assessment Guidelines. Invasive species shall be removed, and native plants shall be installed and maintained in accordance with Section 407-8.*
- (3) *Trees in a hazardous condition, as determined by a certified arborist, may be felled for safety. The trunk and stump shall be left within the Preservation Area to serve as habitat for wildlife, unless diagnosed by a certified arborist with a disease necessitating removal to protect the remaining trees.*
- (4) *The propagation or harvesting of timber for personal consumption or commercial sales is prohibited.*
- (5) *Area shall be preserved in a nonbuildable tract or conservation easement subject to deed restrictions that provide for ownership and maintenance responsibility by a homeowners' association or other property owner(s).*
- (6) *To ensure any planting done to achieve Good Condition is successfully established, by February 15 of the second year following the planting, the applicant or owner shall submit to Current Planning Services a monitoring and maintenance report prepared by a certified forester or landscape architect that includes:*
 - (a) *Dates of inspection(s).*
 - (b) *Status of plantings.*

To ensure plant establishment and retention, if less than 75% of plants have been retained, the report shall provide recommendations for plant care and replacement of any dead or dying plants.

RESPONSE: As described within the Significant Natural Resource (SNR) Assessment prepared by Environmental Science & Assessment, LLC (ES&A), dated September 9, 2021, to mitigate for the 93,637-SF of proposed upland wildlife habitat impacts, the preservation area will be enhanced with invasive plant removal, and that invasive plant density then replaced with native plantings to reach a final desired density of 2,400 stems/acre. Despite removal of 85% of the upland wildlife habitat within the project footprint, the preservation area is seen as an opportunity to enhance and make more resilient the upland habitat areas that will remain and provide a higher degree of protection to the wetlands, waters, and riparian habitat SNR. Because significant stands of Douglas fir and bigleaf maple already exist, mitigation plantings that are more drought and heat tolerant are proposed to ensure the long-term resilience of this forested area. Table 2 outlines the proposed plantings within the preservation area.

Table 2: Recommended Plant List for Upland Wildlife SNR Preservation Areas

Common Name	Scientific Name	Plant Form/Size ¹	Plant Spacing (ft on center)	Total Number of plants ²
Upland Wildlife SNR Preservation Area: 16,524 SF				
Shrubs				
Serviceberry	<i>Amelanchier alnifolia</i>	1 gal/18"	single	25
Chinquapin	<i>Chrysolepis chrysophylla</i>	1 gal/24"	single	50
Salal	<i>Gaultheria shallon</i>	1 gal/12"	clusters 3-5	50
Oceanspray	<i>Holodiscus discolor</i>	1 gal/18"	single	25
Swordfern	<i>Polystichum munitum</i>	1 gal/24"	clusters 3-5	24
Red-flowering currant	<i>Ribes sanguineum</i>	1 gal/18"	clusters 3-5	50
Nootka Rose	<i>Rosa nutkana</i>	1 gal/18"	single	50
Blue elderberry	<i>Sambucus cerulea</i>	1 gal/18"	single	50
Trees				
Pacific Madrone	<i>Arbutus menziesii</i>	1 gal/18"	single	40
Ponderosa Pine	<i>Pinus ponderosa</i>	1 gal/18"	single	40
Bitter cherry	<i>Prunus emarginata</i>	1 gal/18"	single	40
TOTAL				444

NOTES: ¹ Substitutes for plant form (e.g. bare root) and species may be used based on availability.

² Individual species quantities to be determined in landscape, values used presume 1,200 stems existing

To ensure native plantings in the preservation area have successfully established, a monitoring and maintenance report will be provided to the county per Washington County Community Development Code 422-5.3 C (6). If the report determines that less than 75% of the installed plantings have survived, appropriate replacement plantings to increase survival will be installed.

422-10 - State and Federal Regulatory Requirements

Development within a Significant Natural Resource area field-verified boundary shall obtain all required local, state and federal permits.

RESPONSE: The applicant will obtain all required local, state, and federal permits as required by those jurisdictions.

426 EROSION CONTROL

RESPONSE: Section 426 requires erosion control measures in the Tualatin River and Oswego Lake sub-basins during construction to control and limit soil erosion. Section 426-5.2 allows the erosion control plan submission and review to be deferred until the time of any on-site work or construction. The erosion control plan, consistent with the requirements of Section 426, will be submitted and approved prior to any physical change or construction on the site.

On July 1, 1990, Clean Water Services assumed responsibility for erosion control within their district boundaries. The applicant will submit an erosion control plan to Clean Water Services for their approval prior to any on-site or off-site work or construction.

427 SOLAR ACCESS STANDARDS

427-3 Solar Access Standard for New Development

427-3.1 Applicability

The solar design standard in Section 427-3.2 shall apply to the following development applications, except to the extent the Review Authority finds that the applicant has shown one or more of the conditions listed in Sections 427-3.3 and 427-3.4 exist, and exemptions or adjustments provided for therein are warranted.

- A. *Development applications to create lots or parcels for single family detached dwellings or manufactured dwellings in any urban residential district through a partition or subdivision application; and*

RESPONSE: The applicant requests approval of a 15-lot subdivision for development of single-family detached dwelling units. Therefore, the standards in Section 427 apply.

427-3.2 Solar Design Standard

A. Requirements for New Lots or Parcels

At least eighty (80) percent of the lots or parcels in a development subject to Section 427 shall comply with one or more of the alternatives listed in Section 427-3.2, provided, a development may, but is not required to, use the alternatives listed in Sections 427-3.2 A. (2) or 427-3.2 A. (3) to comply with Section 427-3.

- (1) **Basic Requirement** (see Figure 9). A lot or parcel complies with Section 427-3.2 if it:
- (a) Has a north-south dimension of ninety (90) feet or more; and
 - (b) Has a front lot line that is oriented within thirty (30) degrees of a true east-west axis.

RESPONSE: The proposed development consists of 15 lots, which calls for 12 lots to meet the solar access Basic Requirement to meet the 80% standard.

Twelve of the 15 lots are oriented and dimensioned to meet the *Basic Requirement*, being lots 1 through 7 and 11 through 15. Each of the lots has a front lot line oriented within 30 degrees of a true east-west axis, and a north-south lot depth of greater than 90 feet.

Therefore, the development complies with these solar design standards, and no adjustment is necessary under Section 427-3.4.

430-46 - Flag Lot

A lot behind a frontage lot, plus a strip (pole) out to the street for an access drive. Creation of a flag lot shall be subject to the following:

430-46.1 Buildings located on flag lots shall be oriented to provide the maximum privacy to surrounding existing and future residential structures;

RESPONSE: There are 3 lots within the development which classify as Flag Lots. Initially, the first of the two property line adjustments will relocate the shared property line between Tax Lots 400 and 2400, creating a flag pole to NW Leahy Road for Tax Lot 400. No dwellings are or will be located on Tax Lot 400 at this time. The second property line adjustment, between Tax Lots 2300 and 2400, will relocate the shared property line and create a flag pole to NW Leahy Road for Tax Lot 2400. The existing house will be retained on Tax Lot 2400, and the flag pole portions of Tax Lots 400 and 2400 will both at that time meet the requirements for double flags. Following the 15-lot subdivision, Tax Lot 2400 will have access to the new internal private street Tract, Tract C, and will no longer be a flag lot. Tax Lot 400 will revert to being a single flag.

Proposed Lot 3 will be a single flag lot accessing from the western terminus of the hammerhead turnaround in Tract C. The lot and subsequent dwelling will be oriented in the same way that the adjoining Lots 4 through 7 are oriented, maintaining consistent setbacks and privacy to adjoining properties.

430-46.2 The setback requirements of the primary district shall be maintained unless the Review Authority determines, as part of the initial approval, that it is necessary to modify the setbacks to provide more privacy to existing and

proposed structures than if the required setbacks were maintained, in order to implement Section 430-46.1 above;

RESPONSE: Tax Lot 400 is currently vacant, and no setbacks are applicable as no structures currently exist or are proposed. The house on Tax Lot 2400 is existing, and therefore setbacks to perimeter lots will not change. Proposed Lot 3 and any subsequent dwelling will be oriented in the same way that the adjoining Lots 4 through 7 are oriented, maintaining consistent setbacks and privacy to adjoining properties.

430-46.3 Access to all proposed flag lots (including future lots) shall:

- A. Provide for drainage as set forth in Section 410; and*
- B. Consolidate access onto public streets wherever possible including consolidation of the access of the parent lot.*

RESPONSE: Lot 3 will have access from the west leg of the turn-around (Tract C) via a single flag access driveway, which meets the consolidated access criteria. Storm drainage for this lot is designed consistent with Section 410, as addressed within the Preliminary Storm Drainage Report and the Preliminary Composite Utility Plan, Sheet P6.

430-46.4 Landscaping and fencing (buffering) as required through Development Review to insure that privacy of existing residential structures is maintained.

RESPONSE: Landscaping and fencing will be provided consistent with Code standards. Fencing typical of new residential development will be constructed along the perimeter of the new proposed lots with new home construction.

430-46.5 Single flag lots shall meet the following:

- A. The minimum continuous width of the access strip shall be 15 feet;*
- B. The access strip shall be part of the flag lot (the driveway shall not be provided through an easement on the frontage lot); and*
- C. Access shall be provided by a paved driveway which meets the private street standards of Sections 409-3, 409-4.4, and 409-4.5.*

RESPONSE: As described above, initially, the first of the two property line adjustments will relocate the shared property line between Tax Lots 400 and 2400, creating a flag pole to NW Leahy Road for Tax Lot 400. No dwellings are or will be located on Tax Lot 400 at this time. While it is anticipated that both property line adjustments will be recorded at the same time, for the purposes of this approval Tax Lot 400 will have a minimum flag pole width of 19.72 feet. The second property line adjustment, between Tax Lots 2300 and 2400, will relocate the shared property line and create a flag pole to NW Leahy Road for Tax Lot 2400. The existing house will be retained on Tax Lot 2400, and the flag pole portions of Tax Lots 400 and 2400

will both at that time meet the requirements for double flags, with a minimum width of 19.72 feet (Tax Lot 400) and 10 feet (Tax Lot 2400). Following the 15-lot subdivision, Tax Lot 2400 will have frontage and access to the new internal private street Tract, Tract C, and will no longer be a flag lot. Tax Lot 400 will revert to being a single flag. Until that time. While both lots will access NW Leahy Road via and access easement over the existing driveway, each lot will have individual frontage and access to NW Leahy Road via a flag pole/access strip in accordance with Section 430-46.5.B.

Proposed Lot 3 will be a single flag lot accessing from the western terminus of the hammerhead turnaround in Tract C via a 15 foot wide flag pole.

430-46.6 Double flag lots shall meet the following:

- A. *The minimum continuous width of the joint access strip shall not be less than 20 feet;*
- B. *The joint access strip shall not be provided through an easement on the frontage lot(s); and*
- C. *Access shall be provided by a common paved driveway which meets the private street standards of Sections 409-3, 409-4.1, 409-4.2, 409-4.4, and 409-4.5.*

RESPONSE: As described above, while it is anticipated that both property line adjustments will be recorded at the same time, for the purposes of this approval the second property line adjustment, between Tax Lots 2300 and 2400, will relocate the shared property line and create double flag poles to NW Leahy Road. The flag pole portions of Tax Lots 400 and 2400 will both at that time meet the requirements for double flags, with a minimum width of 19.72 feet (Tax Lot 400) and 10 feet (Tax Lot 2400). Following the 15-lot subdivision, Tax Lot 2400 will have frontage and access to the new internal private street Tract, Tract C, and will no longer be a flag lot. Tax Lot 400 will revert to being a single flag. Until that time. While both lots will access NW Leahy Road via and access easement over the existing driveway, each lot will have individual frontage and access to NW Leahy Road via a flag pole/access strip in accordance with Section 430-46.5.B.

430-46.7 The minimum lot area requirements of the primary district shall be maintained;

430-46.8 The pole or access portion of the flag lot shall not be included in the calculation of the minimum lot area, and shall not be included in the calculation of the average lot size in the R-5 and R-6 Districts;

RESPONSE: Tax Lots 400 and 2400 will both significantly exceed the 5,500 square foot minimum lot size of the R-5 District. As existing lots of record which are not part of the subsequent subdivision, the minimum average lot size is not applicable to Tax Lots 400 and 2400.

Lot 3 will contain 6,601 square feet when eliminating the access flag from calculation of the minimum lot area, which exceeds the 5,500 square foot minimum lot size of the R-5 District. With Proposed Lot 3 measured at 6,601 square, the average lot size across the 15 new lots is 6,001 square feet, exceeding the minimum average lot size of the R-5 district of 6,000 square feet.

430-46.9 The applicant shall provide a plan of complete parcelization of the subject property and potential parcelization of adjacent, vacant parcels; and

430-46.10 *Parcelization shall not preclude reasonable development of the site and surrounding properties.*

Consideration shall include but not be limited to:

A. Access;

B. Circulation; and

C. Building location.

RESPONSE: The proposed preliminary plat provides for complete parcelization of the subject property (Tax Lot 2300) and allows for potential parcelization of adjacent, vacant parcels. The proposed lot layout, including the flag lots does not preclude reasonable development of the site and surrounding properties.

430-72 – Infill

430-72.2 Applicability

The requirements of this Section shall apply to subdivisions, partitions, and development review for attached units on all properties designated by the applicable Community Plan as R-5 or R-6 which contain two acres or less (excluding existing rights-of-way).

RESPONSE: The subject property is zoned R-5, however as the site exceeds two acres in area, this standard is not applicable.

501 PUBLIC FACILITY AND SERVICE REQUIREMENTS

501-8 Standards for Development

501-8.1 Critical Services

A. An applicant for development shall provide documentation from the appropriate non-County service provider that adequate water, sewer and fire protection can be

provided to the proposed development prior to occupancy. The documentation shall be no more than ninety (90) days old.

RESPONSE: The application packet includes documentation from each appropriate non-County service provider that states adequate water, sewer and fire protection can be provided to the proposed development prior to occupancy. The documentation provided is no more than ninety (90) days old. This criterion has been met.

- B. *No development shall be approved without an adequate level of access to the proposed development in place or assured at the time of occupancy with "adequate" defined for critical road services as:*

- (1) *Those Local and Neighborhood Route roads, new or existing, lying wholly within the property's real property boundaries, or future roadway alignments designated in the Washington County Transportation Plan, shall be developed in accordance with Washington County's Uniform Road Improvement Design Standards; and*

RESPONSE: The applicant is proposing one new local street within the site boundaries. There is no specific alignment identified for this street in the Transportation Plan.

As proposed the private street (Tract C) will extend into the site from NW Leahy Road. The street will be 24 feet wide at the entry and along Tract B then it widens to 28 feet and extends east and then turns north to a hammerhead turn-around.

As noted, the County preferred that this street not be designed to allow for future extension to serve other properties. The street will, however, provide access for Tax Lots 400 and 2400 as adjusted by PLAs. As addressed herein, this street is designed in accordance with Private Street standards within Section 409.

- (2) *For those access roads lying adjacent to and between the property owner's proposed development and the nearest adequate Collector or Arterial road, as defined in Essential Services, or future roadway alignments designated in the Washington County Transportation Plan, the road(s) must meet the following minimum standards:*

- (a) *Have a wearing surface and structural life expectancy period of no less than five (5) years (paved) as determined by the County Operations Engineer;*

RESPONSE: Additional right-of-way dedication (17 feet) is required for NW Leahy Road. This dedication allows for the compliance with the C-1 collector standard.

The site abuts NW Leahy Road, a designated collector street, therefore this standard does not apply.

- (b) *Paved surfaces for existing roadways shall be twenty-two feet or greater in width. New roads shall meet the adopted County Road Standards;*

RESPONSE: The existing paved surface of NW Leahy Road exceeds the minimum 22 feet. This criterion is met.

- (c) *On-site means all lands in the land use application and one half (½) the right-of-way of existing roads lying adjacent to such lands;*

RESPONSE: Consistent with this criterion, the proposed project will provide frontage improvements along the NW Leahy Road frontage, including sidewalk, planter strips, curb and gutter section, and widened paved surface with tapers back to the existing roadway.

NW Leahy Road currently does not have adequate right-of-way consistent with C-1 collector standards. Therefore, the development will dedicate an additional 17 feet along the site frontage, meeting this criterion.

- (d) *On-site entering sight distance meets standards as specified in "A Policy on Geometric Design of Highways and Streets," American Association of State Highway and Transportation Officials (AASHTO), 1990; and*

RESPONSE: The applicant understands and will comply with sight distance requirements for roads intersecting each other and for driveways intersecting public roads. The sight distance for the proposed private street will meet County standards.

The applicant has provided preliminary sight distance certification for the proposed new intersection onto NW Leahy Road, demonstrating compliance with the requirements of this section.

- (e) *Right-of-way on or adjacent to the frontage property meets Washington County functional classification standards.*

RESPONSE: As noted, this development will dedicate an additional 17 feet of right-of-way along the frontage of NW Leahy Road, to meet collector C-1 standards. This criterion is met.

- (3) *For a proposed development which abuts an existing Local or Neighborhood Route stub street, the applicant must develop a site plan which extends the stub street into or through the development site.*

RESPONSE: There are no stub streets abutting the site. This criterion is not applicable.

- (4) *For those existing Local and Neighborhood Route roads which are not improved in accordance with Washington County's Uniform Road Improvement Design Standards and abut a development in a transit*

oriented district, or abut a development outside a transit oriented district which is adjacent to a designated special area street, a half street improvement along the site's frontage shall be constructed.

RESPONSE: The project site does not abut any existing Local, Neighborhood Route, or special area street. This criterion is not applicable.

C. No development shall be approved without adequate drainage...

RESPONSE: The applicant has designed the proposed development with an adequate drainage system as prescribed by the County Drainage Master Plan, along with adequate provisions for storm water, surface water and water quality management as required by Clean Water Services. The applicant will construct a storm water facility within Tract B, to address water quality (see Plan Set in this application packet). The Preliminary Storm Drainage Report contained within this application packet meets the requirements of this Section.

D. No development shall be approved on property that is located outside of the Washington County Urban Road Maintenance District...

RESPONSE: The proposed project site is located within the Washington County Urban Road Maintenance District. Therefore, this criterion has been met.

501-8.2 Essential Services

A. Service Provider Documentation

(1) An applicant shall provide documentation from the appropriate school district, police or sheriff department, transit agency and highway department that adequate levels of service are available or will be available to the proposed development within the time-frames required by the service provider.

RESPONSE: The applicant has provided the service provider letters from the appropriate service providers. This criterion is met.

(2) If the service provider documents that an adequate level of service is not available or will not be available within the time frame required, the service provider shall be requested to provide information regarding the service provider's ability to provide adequate levels of services and alternative means which could be employed to provide adequate levels of service. Documentation of adequacy and alternatives to provide adequate levels of services may include but are not limited to the following:

(a) Schools...

RESPONSE: The proposed development is within the Beaverton School District. The school district has determined that a moderate impact will result at all school levels, however had not identified inadequate school capacity. The District's service provider letter is included within the application packet.

(b) *Police or Sheriff Services...*

RESPONSE: The Washington County Sheriff's Department has determined to be able to provide adequate levels of service for the proposed development. A letter from the Department is included in the application packet.

(c) *Provision of Transit Improvements...*

RESPONSE: The closest bus route to the site is Tri Met's Route 50 – "Cedar Mill", which runs on NW Leahy Road, therefore this property is served by transit. The self-completed Transit SPL is included in this submittal.

B. Adequate Level of Arterial and Collector Roads

RESPONSE: The proposed project will provide frontage improvements along the NW Leahy Road frontage, including sidewalk, planter strips, curb and gutter section, and widened paved surface with tapers back to the existing roadway, and will pay the required TDT at the time of building permit issuance as required.

C. Street Lighting

RESPONSE: The proposed project includes new streets requiring appropriate lighting. The plans show the location of the proposed lighting for these streets.

501-8.4 *Dedication of Right-of-Way*

Except as provided in Section 418-2.2, dedication of right-of-way shall be required pursuant to the classification of the facility as designated by the Washington County Transportation Plan and based upon the County Road Standards.

RESPONSE: This development will dedicate an additional 17 feet of right-of-way along the frontage of NW Leahy Road, to meet C-1 collector standards. The internal streets are designed to meet local private residential street standards. This criterion is met.

501-8.5 *Access to County and Public Roads*

All developments shall have legal access to a County or public road. Except for interim access as provided in Section 501-8.5 E. [Interim Access], access onto any County road in the unincorporated or incorporated urban area shall be permitted only upon issuance of an access permit upon demonstration of compliance with the provisions of the County road standards and the standards of Section 501.

A. *Roadway Access*

See following access diagram where R/W = Right-of-Way; and P.I. = Point-of-Intersection where P.I. shall be located based upon a 90 degree angle of intersection between ultimate right-of-way lines.

RESPONSE: The applicant is proposing access as provided in Section 501-8.5 E. from NW Leahy Road, which is a designated collector, via a private street (Tract C). Based on guidance from the County, this private street is not designed to be extended beyond the east property line.

B. *Roadway Access*

No use will be permitted to have direct access to a street or road except as specified below, or as provided in Section 501-8.5 E. (Interim Access). Access spacing shall be measured from existing or approved accesses on either side of a street or road.

(1) Local Streets

Minimum right-of-way radius is fifteen (15) feet. Access will not be permitted within ten (10) feet of Point "B," if no radius exists, access will not be permitted within twenty-five (25) feet of Point "A." Access points near an intersection with a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. This requirement may result in an access spacing greater than ten (10) feet. Interim access may be permitted, pursuant to the standards of Section 501-8.5 E. (Interim Access).

RESPONSE: The applicant is not proposing any interim access as provided in Section 501-8.5 E. As requested by the County, access will be provided by a private street. The private street will maintain legal access for Tax Lots 400 and 2400. Therefore, these criteria are met or otherwise not applicable.

(3) Collectors

All commercial, industrial and institutional uses with 150 feet or more of frontage will be permitted direct access to a Collector. Uses with less than 150 feet of frontage shall not be permitted direct access to Collectors. Interim access which does not preclude future common entrance with adjacent property may be permitted pursuant to the standards of Section 501-8.5 E. (Interim Access). Where a common access is available it shall be used, provided that such use will not result in serious operational or safety problems. No use will be permitted direct access to a Collector within 100 feet of any present Point "A"; or future "P.I." as designated in the Transportation System

Plan (TSP). New Collector Street alignments identified in the TSP may be adjusted within the subject property, as approved by the County Engineer. In the case of a Collector which is entirely within a single development and which provides circulation only within that development, double aisle parking areas will be permitted access to that Collector. Minimum spacing between driveways (Point "C" to Point "C") shall be 100 feet. In all instances, access points near an intersection with a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. Additionally, access shall be located to provide adequate left turn refuge as required by Resolution and Order No. 86-95 as modified or updated. This requirement may result in an access spacing greater than 100 feet.

RESPONSE: The private street (Tract A) intersection is spaced 160 feet from the intersection of NW Alpenglow Way, consistent with County collector standards.

F. Sight Distance

The following specifies the minimum requirements for sight distance for roads intersecting each other and for driveways intersecting public roads. It is the intent of this section to regulate the creation of new access points and new lots or parcels and development in the County in a manner that will insure that each new access point or each new lot or parcel created or development will have a safe access to a public road.

RESPONSE: The applicant understands and will comply with sight distance requirements for roads intersecting each other and for driveways intersecting public roads. The sight distance for the proposed private street will meet County standards.

The applicant has provided preliminary sight distance certification for the proposed new intersection onto NW Leahy Road, demonstrating compliance with the requirements of this section.

H. Road Standards

- (1) *All roads proposed to be of public ownership shall conform to the County Road Standards.*
- (2) *All proposed curve radii shall be designed to County Road Standards for truck-turning requirements.*
- (3) *All roads not proposed to be of public ownership shall conform to Section 409 (Private Streets).*

RESPONSE: Public and private roads proposed for the project conform to the County Road Standards and applicable Section of the Community Development Code as demonstrated in this narrative and on the Streets / Utility Plan.

502 SIDEWALK STANDARDS

RESPONSE: A sidewalk will be provided along the site frontage of NW Leahy Road, designed to meet future street widening and grade. Sidewalks will also be provided along the internal local streets, as provided by Section 409 of the Code. All sidewalks will be constructed to meet minimum County standards.

605 LAND DIVISIONS AND PROPERTY LINE ADJUSTMENTS INSIDE A UGB

605-2.1 Procedures

RESPONSE: The applicant is proposing two PLAs, adjusting the boundaries of the three existing Tax Lots. In addition, the applicant is proposing a 15-Lot subdivision of adjusted Tax Lot 2300.

The PLAs will be a Type II review, as flag lots will be created. The land division will also be processed with a Type II review. The applicant will apply for final review within four years of the approval of the preliminary plat.

605-1 Property Line Adjustment (Property Line Relocation)

A property line adjustment is the relocation or consolidation of a common boundary line between two or more abutting properties where an additional lot or parcel is not created.

605-1.1

A. General Limitations

Property line adjustments are limited as follows:

- (1) *Existing lots or parcels reduced in size by a property line adjustment may not be reduced below the minimum lot size established by the applicable land use district, unless authorized by Section 605-1.1 B.*
- (2) *For property line adjustments on lots or parcels with two or more land use districts, the minimum lot size shall be based on the predominant land use district of the parcel.*

RESPONSE: The applicant is proposing two Property Line Adjustments (PLAs):

- First PLA (Sheet P2.1) adjusts the adjusted common line between Tax Lots 400 and 2400, see below

- Second PLA (Sheet P2.2) adjusts the common line between Tax Lots 2300 and 2400, see Table 3.

The subject Parcels are all within the R-5 district, which has a minimum lot size of 5,500 square feet for new urban lots.

PLA 1 Tax Lots 400 & 2400
Existing and Adjusted Lot Areas

Tax Lot	Existing Lot Area	Adjusted Lot Area
400	152,385	112,678
2400	61,279	100,987
Total	213,664*	213,665*

*The 1 square foot difference in total area is the result of rounding to whole numbers.

PLA 2 Tax Lots 2300 & 2400
Existing and Adjusted Lot Areas

Tax Lot	Existing Lot Area	Adjusted Lot Area
2300	135,172	195,367
2400	100,987	40,791
Total	236,159*	236,158*

*The 1 square foot difference in total area is the result of rounding to whole numbers.

As reflected in Tables 2 & 3, the before and after the two proposed PLAs all lots maintain compliance with the minimum lot size standards.

B. Property Line Adjustments Permitted Through a Type I Procedure

Property line adjustments shall be processed through a Type I procedure, unless otherwise specified in this Code, provided that:

- (1) *Both properties meet or exceed the minimum lot or parcel size for the applicable district; or*
- (2) *Equal land areas are exchanged; or*
- (3) *For properties entirely outside the boundary of a city, one or both of the abutting properties are smaller than the minimum lot or parcel size for the applicable district before the property line adjustment and, after the adjustment, one is as large as or larger than the minimum lot or parcel size for the applicable district; or*

- (4) For properties entirely outside the boundary of a city, both abutting properties are smaller than the minimum lot or parcel size for the applicable district before and after the property line adjustment.

RESPONSE: The PLAs will be a Type II review, as flag lots will be created. Accordingly, this section is not applicable. All parcels after the adjustments maintain compliance with minimum lot areas. All lots as adjusted are larger than the minimum required.

605-1.2 Submission Requirements

In addition to the requirements of Section 203-4, all applications for a property line adjustment shall include the following:

- A. Name(s), address(es) and telephone number(s) of the owner(s), agent(s) and surveyor(s).
- B. A plot plan showing:
 - (1) All existing and proposed property lines;
 - (2) All existing and proposed structures;
 - (3) Existing and proposed easements;
 - (4) The location of any flood plain, drainage hazard areas and other areas subject to flooding or ponding; and
 - (5) The location of any water quality sensitive areas and vegetated corridors.
- C. Existing and proposed lot sizes.

RESPONSE: The PLA applications include the applicable plan details listed in A., B. (1) – (5), and C. of this section.

605-1.3 Review Standards

The proposed property line adjustment must be found to comply with the applicable provisions of this Code and the applicable Community Plan, including the definition set forth above and the dimensional requirements of the district except as described in Section 605-1.1 B. No property line adjustment shall result in a boundary line that violates the setback standards of the applicable land use district unless a variance to the setback is approved. Property line adjustments shall comply with Section 501-8.5 (Access to county and public roads) except as provided in this subsection. Property line adjustments for parcels or lots which do not meet the sight distance standards of Section 501-8.5 F., (including existing accesses), shall be approved if the parcel or lot's sight distance is not decreased as a result of the property line adjustment.

RESPONSE: Setbacks are shown for the existing house on Tax Lot 2400 and the out buildings on Tax Lot 2300, confirming they maintain compliance with code standards.

While the out buildings on Tax Lot 2300 will be removed, for the PLA, the setbacks are shown confirming they maintain compliance with code standards. No variances to setbacks are necessary.

For both PLAs the access standards and sight distance standards are met and maintained.

For PLA 1, Tax Lot 2400 maintains legal access frontage on NW Leahy Road with the adjustment. Tax Lot 400 maintains legal flag access frontage on NW Leahy Road.

For PLA 2, Tax Lot 2400 maintains legal flag access on NW Leahy Road, while Tax Lot 2300 maintains access frontage on NW Leahy Road.

605-1.4 Survey Requirements

As set forth in Section 602-11.

605-1.5 Filing and Recording

As set forth in Section 602-1.

RESPONSE: Compliance with survey requirements is confirmed through the County's plat review process, with redline corrections provided as needed.

The applicant intends to record the PLA plats in a timely manner as soon as all approvals and signature are obtained.

605-2 Urban Land Divisions (Partitions and Subdivisions)

Land within the urban unincorporated portions of Washington County may be divided through a partition or subdivision plat. To partition land means to divide a unit of land into two or three parcels within a calendar year. To subdivide land means to divide a unit of land into four or more lots within a calendar year. A partition or subdivision may or may not involve the creation of a street or road.

Subdivisions and partitions are subject to the general standards of the land use districts, the applicable development standards of Article IV, the applicable standards of Article V (Public Facility and Service Requirements) and the provisions of this Article, including standards in Section 605-3 (Development Standards for Urban Land Divisions).

605-2.1 Procedures

Partitions and subdivisions shall be processed through a two-step process consisting of a preliminary review and a final review.

A. Preliminary Review:

The preliminary review of a partition or subdivision shall:

- (1) *Be through a Type I procedure when in an approved Special Industrial Overlay District (SID) and in conformance with the approved SID - Section 377;*
- (2) *Be through a Type II procedure when no variance from the standards of this Code is required; or*

RESPONSE: The applicant is submitting for preliminary approval for a 15-Lot subdivision of PLA adjusted Tax Lot 2300. No variance is being requested, thereby allowing for Type II review.

605-2.2 Review Standards

A. Preliminary Review:

The proposed partition or subdivision shall be reviewed for compliance with the applicable provisions of this Code, including Section 601-2.

RESPONSE: The following Response Findings are provided demonstrating compliance with the applicable provisions of Section 605 for preliminary plat approval.

B. Final Review:

- (1) *The request for final approval of a partition or subdivision shall be reviewed for consistency with the preliminary approval and shall comply with the standards and conditions of the preliminary approval.*
- (2) *Any request for final approval submitted prior to expiration, but the expiration date subsequently passes and final approval is not granted for lack of the required information, shall be denied if the required information is not submitted within 60 days of expiration. In this situation, the preliminary approval has expired and shall be null and void.*

C. Notwithstanding any other provisions, a proposed subdivision or partition shall comply with all applicable provisions of State law.

RESPONSE: The applicant intends to record the 15-Lot subdivision plat in a timely manner as soon as all approvals and signature are obtained. The plat name will be Estates at Leahy Park.

605-2.3 *Submission Requirements for Preliminary Review of Urban Land Divisions*

RESPONSE: The applicant has submitted the proposed development application with the necessary items as listed in subsection A. (1-15), B., C., and D. This application is for a 15-Lot subdivision of PLA adjusted Tax Lot 2300.

605-3 *Development Standards for Urban Land Divisions*

In addition to the other standards in this Code, the following standards...

RESPONSE: The applicant has applied the standards of Section 605-3, in addition to the following applicable standards of this Code, to the proposed land division.

605-3.1 *Sewers*

Sanitary sewer plans shall conform to the standards and specifications...

RESPONSE: The proposed sanitary sewer lines conform to the standards and specifications adopted by Clean Water Services (Preliminary Composite Utility Plan, Sheet P6 within this application packet). The lines to be installed will serve all proposed lots. Therefore, this criterion has been met.

605-3.2 *Storm Drainage Systems*

- A. *Storm drainage systems shall provide for the adequate drainage of surface water on and crossing a site. Storm drainage systems include but are not limited to...*

RESPONSE: The proposed storm drainage system provides an adequate drainage of surface water on and crossing the proposed site (Preliminary Composite Utility Plan, Sheet P6 within this application packet). The storm drainage system is located within the public right-of-way or in easements where necessary to connect to existing facilities. The Streets / Utility Plan indicates the direction of storm drainage flow.

- B. *Storm drainage systems shall...*

RESPONSE: The proposed storm drainage system will be approved by the County (CWS) prior to being constructed and installed. The system is designed to connect to a discharge facility which includes a detention basin. The system is designed to facilitate pickup of all storm water runoff from surrounding parcels which naturally drain through the proposed site. The proposed storm drainage system conforms to all official drainage master plans adopted by the Board.

- C. *Provisions for the access and maintenance of storm drainage facilities that are not located in a public right of way shall be provided as required by the Clean Water Services and in accordance with adopted County standards. An easement*

or tract with adequate width for access and maintenance of drainage facilities shall be provided.

RESPONSE: The proposed storm drainage detention facility is located within a private tract, with CWS access provided by appropriate easements. All storm drainage facilities not within the right-of-way are designed with adequate width for access and maintenance of the facilities.

D. Copies of design computation of the storm water system shall be provided for review and approval by the County.

RESPONSE: This application packet includes a drainage report of the storm water system for review and approval.

E. If a development site is traversed by a water course, drainageway, channel or stream, the development shall:

- (1) Include retention and detention basins when part of an approved drainage plan and;*
- (2) Provide an easement or tract over the water course, drainage way, channel or stream for drainage or storm water purposes. The easement or tract shall:*
 - (a) Substantially conform to the boundaries of the water course, drainage way, channel or stream at design flood, except as permitted by Section 421; and*
 - (b) Provide adequate width for access and maintenance of drainage facilities;*

RESPONSE: This project will construct a stormwater facility located in the southeast corner of the site to accommodate for water quality treatment and detention for the proposed subdivision, in accordance with CWS requirements. An unnamed perennial tributary to Johnson Creek flows from east to west through the southern end of all three parcels. The stream will be located within subdivision Tract A, which will include appropriate easements to CWS for stormwater management purposes. These criteria are met.

605-3.3 Streets and Street Improvements

A. Street improvements may include but not be limited to...

RESPONSE: The internal private street will be fully improved consistent with County local private street standards. The construction, installation, and repair of any facility in the proposed streets will be done in accordance with Code Section 409.

Standard 1/2-Street frontage improvements will be provided along NW Leahy Road consistent with County standards (C-1 collector), including sidewalk and street trees. An additional 17-foot right-of-way will be dedicated on the plat.

- B. Storm water inlets, catch basins and fire protection facilities shall be constructed and installed in the right-of-way at points approved by the County;*

RESPONSE: The proposed storm water inlets, catch basins and fire protection facilities will be constructed and installed in the right-of-way at points approved by the County.

Tualatin Valley Fire & Rescue has approved the FS-1 Permit for the site, attached hereto.

- C. Street plans shall indicate the direction of storm drainage flow along all curbs;*

RESPONSE: The proposed contours on the Grading and Storm Drainage Plan show the direction of storm drainage flow along all proposed curbs.

- D. Streets shall be designed and constructed to be compatible in character, width, grade and alignment with the overall design of the streets which abut the proposed development. Where streets are a continuation or projection of existing streets the centerline shall be continuous;*

RESPONSE: The proposed streets are designed and will be constructed to be compatible in character, width, grade and alignment with the overall design of the streets which are adjacent to the proposed development.

- E. The adopted Transportation Plan shall prevail in...*

RESPONSE: The applicant has followed the requirements of the Transportation Plan for location, course, grade and width of the proposed streets.

- F. The minimum right-of-way of streets shall comply with the adopted Transportation Plan;*

RESPONSE: The rights-of-way for the proposed streets comply with the adopted Transportation Plan. NW Leahy Road will have 17 feet of additional dedication to meet collector (C-1) standards.

The internal local private street is designed with 24 feet paved at the entry, but widens to 28 feet paved beyond Tract B. There will be curbs and sidewalks on both sides, except along the frontage of Tax Lots 400 & 2400, which are not part of this development. This criterion is met.

- G. All developments shall comply with adopted County sight distance standards;*

RESPONSE: Sight distance for the proposed streets complies with the adopted County Sight Distance Standards, as evidenced in the Preliminary Sight Distance Certification provided with this submittal.

H. Streets, existing and future, shall:

- (1) *Be consistent with the standards of Section 408 (Neighborhood Circulation);*
- (2) *Provide for general public convenience and safety in the areas to be served;*
- (3) *Not allow the intersection of more than two streets at any one point;*
- (4) *Be designed to encourage safe and efficient traffic flow;*
- (5) *Be designed to discourage through traffic on minor streets; and*
- (6) *A Local or Neighborhood Route street may be established which exceeds the maximum County standard for cul-de-sac length when the street is planned to be ultimately connected to another public street and meets Fire Marshal approval for adequate terminus;*

RESPONSE: The proposed streets have been designed to comply with items (1) through (6) listed in this Section.

I. All Local and Neighborhood Route stub streets which abut a proposed...

RESPONSE: The proposed development does not abut any stub streets, therefore this Section is not applicable.

J. At street intersections, the property line shall be rounded by an arc bearing a radius of not less than fifteen (15) feet. However, when an arterial street is an intersection street, the arc shall bear a radius of not less than twenty-five (25) feet. Property lines at arterial street intersections, or at other locations where the Review Authority anticipates traffic hazards or congestion, shall be designed for a greater radius as may be necessary to alleviate such hazards.

RESPONSE: The primary access intersection is proposed from NW Leahy Road, a designated collector, intersecting with a private street. The street intersection has been designed with a radius of not less than 15 feet.

K. County and public streets shall not be gated or barricaded...

RESPONSE: No gated streets are proposed. This requirement is met.

605-3.4 Public Utilities

A. Utility lines for telephone, gas, cable television and electric services, which serve more than one lot or parcel, shall be placed in easements as set forth in Section

605-4.2 B. (4). All utilities shall be underground except as approved through Section 416;

RESPONSE: The proposed development has utility lines for telephone, gas, cable television and electric services designed within easements as set forth in Section 605-4.2 B. (4). All utilities will be underground.

B. All conduits and cables for cable television, gas and electric service lines shall be placed within easements or rights-of-way in a manner which does not conflict with other underground services and in compliance with adopted road standards;

RESPONSE: All proposed conduits and cables for cable television, gas and electric service lines are designed to be placed within easements and rights-of-way in a manner which does not conflict with other underground services and in compliance with adopted road standards.

C. Transformers shall be located in a manner not hazardous to the public or unsightly in appearance; and

RESPONSE: The plans from PGE will dictate the location of transformers. These locations will not be hazardous to the public or unsightly in appearance.

D. The Board of Commissioners may, by resolution and order or ordinance, promulgate rules and regulations governing location of public utilities.

RESPONSE: The applicant is aware that the Board of Commissioners may, by resolution and order or ordinance, promulgate rules and regulations governing location of public utilities.

605-3.5 Sidewalks

Sidewalks shall be provided as required in Articles IV and V.

RESPONSE: The proposed sidewalks are designed per Articles IV and V. This item has been met.

605-3.6 Lots or Parcels

A. Double-frontage lots or parcels shall be prohibited unless the Review Authority finds:

- (1) They are essential to provide separation of existing or proposed residential uses from Collectors or Arterials or adjacent nonresidential activities; and/or*
- (2) They are needed to overcome specific disadvantages of topographical orientation.*

B. An additional lot depth may be required by the Review Authority on double frontage lots.

RESPONSE: Lot 1 could be considered a double fronted lot, although, technically, it is a corner lot and has all of its frontage on the same street. This lot has sufficient lot area to accommodate a reasonably sized building envelope while maintaining compliance with the R-5 setbacks. Therefore, these criteria are met to the degree practicable and not additional lot depth is necessary.

- C. *Wherever possible, side lot lines shall be at right angles or radial to the street on which the lots face except where lots abut a cul-de-sac or hammerhead street terminus.*

RESPONSE: The proposed subdivision has been designed to maximize the number of lots at right angles or radial to the streets.

- D. *Remnant lands which cannot meet Code requirements shall be added to adjacent lots or parcels, not left as unusable parcels unless such lands are designated as permanent open space.*

RESPONSE: No remnant lands exist in the proposed subdivision.

- E. *Lots or parcels intended to be buildable which abut a watercourse, drainageway, channel or stream may be required to have additional width or depth to provide a building site which meets Code requirements. In addition, the Review Authority may require dedication of a portion of this land for pedestrian ways or bicycle paths.*

RESPONSE: The proposed development has five lots which, while not directly abutting a watercourse, drainageway, channel, or stream, do abut Tract A, which includes the vegetated corridor/buffer area from the waterway. These lots are designed with additional depth of at least 95 feet. Therefore, this criterion is met.

605-3.7 Blocks

- A. *Length, width and shape of blocks shall be designed to provide adequate building sites for proposed uses, convenient motor vehicle, pedestrian, bicycle and transit access, control of traffic circulation and provision for maximum advantage of topography and other natural characteristics.*
- B. *Blocks shall not exceed six-hundred (600) feet in length and eighteen-hundred (1,800) feet in perimeter, except as allowed through the provision of Sections 408-5 and 408-6.*

RESPONSE: This development provides adequate building sites for proposed residential uses, as well as for convenient motor vehicle, pedestrian, bicycle access, control of traffic circulation and provision for maximum advantage of topography and other natural characteristics.

As described in the response to Section 408-6, the development site is located in such a manner that it is not practicable or possible to fully comply with the block length standard. This criterion is met to the degree practicable. In addition, the natural resource area (Tract A) restricts providing pedestrian between the private street (Tract C) and NW Leahy Road, except at the entry intersection.

The subject development is not able to impact the existing block lengths due to the lack of available public street access, topography, and the surrounding existing development pattern. Therefore, an exception to this standard has been requested under Section 408-6.2.G.(1), (2), and (3). This criterion is therefore met.

605-3.8 *Easements*

Sewer, water, utility or planting easements shall be sized as deemed appropriate by the Review Authority.

RESPONSE: The applicant has designed the easements to be sized appropriately.

FINAL CONCLUSION

The proposed applications comply with all applicable elements and requirements of the *Cedar Hills – Cedar Mill Community Plan*, and the *Cedar Mill East Subarea*.

The response findings presented herein demonstrate that the two PLAs, the Drainage Hazard Area Alteration, and the proposed 15-Lot subdivision comply with all applicable provisions of the R-5 zone and the relevant approval criteria of the Community Development Code.

Public facilities and services exist to adequately serve the proposed development and all improvements will be constructed to County Standards.

Therefore, the applicant respectfully requests approval of this application.



WASHINGTON COUNTY
Dept. of Land Use & Transportation
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
www.co.washington.or.us

PRE-APPLICATION CONFERENCE SUMMARY (URBAN)

PREAPP# 21-0068

Date of Pre-app. June 1, 2021

Staff Member Ryan Marquardt

Proposed Development Action:

2 PLAs; 14 lot subdivision

ATTENDEE:

Name: Matt Sprague

E-mail: rnsprague@pd-grp.com

PROPERTY DESCRIPTION

ASSESSOR MAP: TAX LOT NUMBER(S):
1N1 35 CB 400, 2300, 2400

PROCEDURE/CATEGORY TYPE II

CPO: 1

Community Plan: Cedar Hills - Cedar Mill

Land Use District(s): R-5 District

Site Size: 8.06 acres (approx.)

Address: 10345; 10405 NW Leahy Road

Location: N side; opposite W leg of Alpenglow Way

PROCESSING INFORMATION (Processing time from date of acceptance.) +/- 30 day completeness review

Type I - Administrative Review; estimated processing time _____ days.

Type II - Administrative Review; with Public Notice; est. processing time 120 days; County shall prepare Notice.

Type III - Quasi-Judicial Review (Public hearing before County hearings Officer). County shall prepare Notice. Application submittal deadline is approximately 11 weeks prior to the hearing.

APPLICABLE REGULATIONS

Submit evidence of compliance with the following, using the format indicated (written or plans).

COMMUNITY PLAN

- General Design Elements DE#10 - noise reduction; other GDEs covered by CDC regulations
- Sub-area Design Elements Barnes-Peterkort - no directly applicable design elements
- Area of Special Concern No. N/A
- Significant Natural Resource Goal 5; Title 13

COMMUNITY DEVELOPMENT CODE

Procedures (Article II)

- Neighborhood Meeting (§203-3)
- Other (§200)

Land Use Districts (Article III)

Narrative / Plans

- Introduction (§300) Density per 300-3; subtract lands in 300-3.1 for minimum density; transfer of density calculated per 300-3.
- Applicable District (§302-381) R-5 District - CDC Section 302

Development Standards (Article IV)

- Master Planning (§404)
- Site Plan
- Off-Site Circ./Dev. Plan
- Open Space (§405)
- Building Siting (§406)
- Landscape Design (§407) street trees every 35'
- Neighborhood Circ. (§408) street connectivity area
- Private Streets (§409) see notes; private street standards for flag lot driveways
- Slopes & Grading (§410) preliminary grading plans required
- Screening & Buffering (§411) N/A - all surrounding properties in the R-5 District

Development Standards (Article IV) (con't.)

- Parking & Loading (§413)** _____
 Signs (§414) _____
 Lighting (§415) _____
 Utility Design (§416) _____ underground required; above ground allowed if 416-1.2 criteria are met
 Setbacks (§418) _____ eave, overhang allowances; fence/wall height limits within required setbacks; clear vision at intersections
 Height (§419) _____ fence/wall height limits within required setbacks
 Solar Access (§427) _____ 90' N/S dimension for 80% of lots or request exemption per 427-3.3
 Bicycle Parking (§429) _____
 Special Use Sections (§430) _____ Flag lots per 430-45
 Transit Oriented Design (§431) _____
 Section _____
 Section _____

Variance (§435)

- Type III Variance (§435-4.1)** _____
 Type II Hardship Relief (§435-5.3) _____

Flood Plain & Drainage Hazard Area (§421)

- FP/DHA Handout provided to Applicant**
 Flood Plain Elevation Request Form
Information prepared by a registered professional engineer
 Information described in FP/DHA Handout _____
 (§421-1.2.A or 421-1.2.B) Delineation. _____
 Section _____ Type II - 421-5.5, Subdivisions and partitions
 Section _____
 Description of Proposed alteration (if any) _____

Significant Natural Resource (§422)

Significant Natural Resources on/within 100' of site:

- Water Areas & Wetlands** **Water-related Fish & Wildlife Habitat** **Upland/Wildlife Habitat**
 Significant Natural Areas **Metro Riparian Habitat, Class I/II**

- Submittal Requirement (§422-3)**
 Habitat Assessment per Habitat Assessment Guidelines
 Allowed uses (§422-4)
 Tree preservation in Habitat Area (§422-5)
 Other _____

Public Facilities (§501)

- If increase of 40+ ADT: Completed Traffic Impact Statement – OR – Waiver to TIS**
(Submit the Traffic Impact Statement Request as soon as possible, as there is at least an 8 week turnaround time.)
 (§501) _____ Critical, essential, and desirable services
 Access Management Plan (§501-8.5.C) _____ no AMP required per Traffic Engineering staff; confirm sight distance, provide intersection illumination
 Sidewalks (§502)
* Leahy Road - 37' ROW from CL, 20' existing; 1/2 street improvements to C-1 Standard
* on-site road: L-3 standard presumed appropriate for streets under 400 vehicles per day
x provide preliminary sight distance certification; sight distance for new roadway within the site

Land Divisions & Property Line Adjustments (Article VI)

- Preliminary Plat (§605-2.3)**
 Development Standards (§605-3)

SERVICE PROVIDER LETTERS FROM:

- * = Documentation no more than 90 days old.
- * Water District TVWD _____
- * Clean Water Services (Sewer) _____
- * Clean Water Services Surface Water _____
- * Fire District TVF&R _____
- Washington County Sheriff _____
- Wash Co HHS Solid Waste/Recycling _____
- School District Beaverton _____
- Tri-Met (info. filled out by applicant) _____
- Tualatin Hills Park & Recreation District _____
- City of Beaverton Development Coordination Statement if site is in Beaverton coordination area _____

OTHER REQUIRED INFORMATION:

- Development Application _____
- Development Review Valuation Sheet _____
- Neighborhood Meeting Materials _____
- Reduced Site Plan (8.5" x 11") _____
- Pre-Application Conference Summary _____
- Completed T.I.S. – OR- T.I.S. Wavier (if development is > 40 A.D.T.) _____
- Transportation Dev. Tax Estimate Form (for non-residential projects) _____
- Other _____

Required Washington County Tax Map(s)

(Obtain from Dept. of Assessment & Taxation in Room 130, or the Survey Division in Room 350 of the Public Services Building; or the County website. Provide **ONE copy** of each map listed.)

1N1 35 CB _____ 400, 2300, 2400 _____
 _____ _____
 _____ _____

Total number of copies of a **complete** Land Use application required: 6 _____

Note: Three (3) copies of a land use application are sufficient for the initial completeness review (1st time submittal).

Reduced Site Plan for the Public Notice:

In addition to the full size site plans in the application packets, submit **one** reduced copy of the site plan (using an even scale 1"=100', 1"=200', 1"=400') on a piece of paper preferably 8½" x 11", but no larger than 11" x 17" for assistance in preparation of the Public Notice.

 Adjacent County (if applicable):

Submit tax maps & ownership printouts for all properties within 500 feet of the site (and contiguous parcels), located within _____ County.

All materials must be folded and collated. • Incomplete applications WILL NOT be accepted.

These notes are general in nature and are not intended to cover all of the issues that may surface in the review of an application. The information provided by the County is not binding, and it does not preclude the County from raising new issues or identifying additional requirements during the land use review process. Additional information may be required and it is the applicant's responsibility to provide the necessary information to process an application as required by Oregon State Law and Washington County ordinances and regulations.

PREVIOUS CASE FILES:

The following case files were previously processed on the subject site: 78-265-S; 79-106-FP _____

FEES:

Land Development Fees	Fee Amount
11-50 lots	\$ 14,665
DHA alteration	\$ 3,384
PLAx2 (\$478 each)	\$
Surcharges	
SNR Review	\$ 551
flag lot	\$ 500
Engineering Deposit	\$ 245
TOTAL	\$

Note: Transportation Development Tax and Park Fee(s) (if required) are collected after preliminary approval

OTHER NOTES:

On-site roadway - staff is supportive of private street. CDC 409-3.1.A implies that public street should be required; staff can support request if access easements can be provided for properties that would need to access the street for redevelopment.

Sidewalks on private street - provide on both sides of street; staff supportive of sidewalk on one side where a property abutting the street will construct sidewalks with redevelopment.

Stub accessway to properties east of the site that front on NW Ash Street so that accessway can connect between Leahy and Ash through private street sidewalks on this site and redevelopment of adjacent parcels (1N135CB01312; 1N135CB01311).

SNR - See CDC 422-3. CWS SPL as basis for delineation of vegetated corridor, showing extent of Water-related Fish & Wildlife Habitat, and Metro Riparian Habitat, Class I/II. Delineate upland/wildlife habitat per R&O 20-141. Tree preservation requirements per CDC 422-5 resulting from delineation.

County's recent amendments to CDC 422 (Ord. 869) are under appeal. Applicant may want to provide direct findings on Statewide Goal 5 in the event that County regulations are partly or wholly invalidated on appeal. Goal 5 findings are not a submittal requirement.

City of Beaverton - small portion of site along Leahy; obtain City SPL

Leahy Road is on TDT List (#1057) - between Cornell and Barnes, Add sidewalks and bike lanes, add turn lanes at Cornell and Barnes. TDT credits may be available for improvements constructed on Leahy.

PLAs - ensure that PLAs will be approvable apart from the subdivision (e.g. PLAs cannot create parcel without street frontage even if frontage would be provided once subdivision plat records).

**WASHINGTON COUNTY**

Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

Request For Statement Of Service Availability (Service Provider Letter)

- WATER DISTRICT: TUND
- FIRE DISTRICT: _____
- CITY OF: _____
- CLEAN WATER SERVICES (Sanitary Sewer)

Additionally, you'll need our separate, individual request forms titled:

- ◆ Clean Water Services (Surface Water Mgmt.)
- ◆ Tri-Met
- ◆ School
- ◆ Sheriff / Police
- ◆ Tualatin Hills Park & Recreation District

PROPOSED PROJECT NAME: Estates at Leahy Park

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
15-Lot Subdivision

EXISTING USE: 2 Homes

PROPOSED USE: 15 Homes, retain existing

IF RESIDENTIAL:

NO. OF DWELLING UNITS: 15
SINGLE FAM. 15 MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:

TYPE OF USE: _____
NO. OF SQ. FT. (GROSS FLOOR AREA) _____

IF INSTITUTIONAL:

NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*******ATTENTION SERVICE PROVIDER*******

**PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.**

(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

SERVICE LEVEL IS ADEQUATE TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)

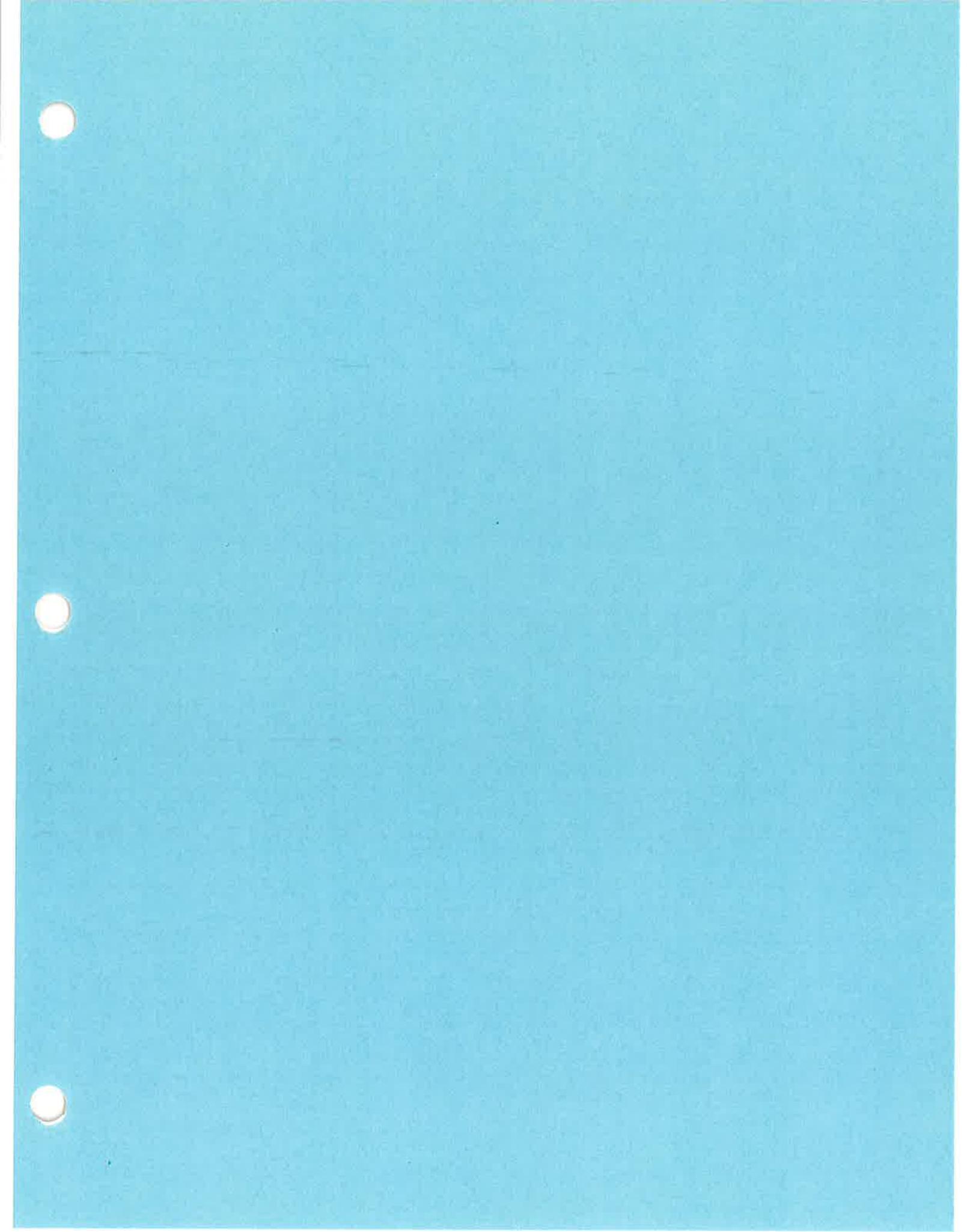
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

*WATER SYSTEM CONNECTION SHALL BE MADE TO THE 8" MAIN IN NW LEAHY RD,
TWO RELOCOS INDICATE IT IS THE SOUTHERN OF THE TWO WATER MAINS*

SIGNATURE: RSJ POSITION: MAINT. ENG. SUPERVISOR DATE: 7-12-2021

SERVICE LEVEL IS INADEQUATE TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: _____ DATE: _____



TUR Ex Permit # 2021 - 0079

**WASHINGTON COUNTY**

Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 848-8761 Fax (503) 848-2908
<http://www.co.washington.or.us>

Request For Statement Of Service Availability (Service Provider Letter)

- WATER DISTRICT: _____
 FIRE DISTRICT: TVF&R
 CITY OF: _____
 CLEAN WATER SERVICES (Sanitary Sewer)

Additionally, you'll need our separate, individual request forms titled:

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IF RESIDENTIAL:

NO. OF DWELLING UNITS: 15
SINGLE FAM. 15 MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:

TYPE OF USE: _____
NO. OF SQ. FT. (GROSS FLOOR AREA) _____

IF INSTITUTIONAL:

NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

******* ATTENTION SERVICE PROVIDER *******

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.

(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

- SERVICE LEVEL IS ADEQUATE TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

SIGNATURE: On Jel POSITION: DFM/LFI DATE: 08/11/2021

- SERVICE LEVEL IS INADEQUATE TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: _____ DATE: _____



Command & Business Operations Center
and North Operating Center
11945 SW 70th Avenue
Tigard, Oregon 97223-8566
503-649-8577

South Operating Center
8445 SW Ellingsen Road
Wilsonville, Oregon
97070-9641
503-649-8577

Training Center
12400 SW Tonquin Road
Sherwood, Oregon
97140-9734
503-259-1600

FIRE DEPARTMENT ACCESS AND WATER SUPPLY PERMIT CHECKLIST

Project Name	Address and/or Legal Description	TVF&R Permit #
Estates at Leahy Park	10345 & 10405 NW Leahy Road	
Description of Proposed Work:	15-Lot Subdivision, retain existing homes	Jurisdiction:
Bldg. Square Footage:	Type of Construction: None	Fire Sprinklers: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>
Fire Alarms: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Bldg. Height: (Measured to gutter line or top of parapet) Max 35 feet	ERRC <input type="checkbox"/> MERRC <input type="checkbox"/> N/A <input type="checkbox"/>

Complete checklist below if the submittal involves constructing or altering a building.

ITEM #	PROVIDED	REQUIREMENT	CODE REF
1	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Fire service plans shall consist of a site plan and elevation views of buildings. The site plan shall be labeled as FS-1. Elevation view sheets shall be FS-2, FS-3, etc.	OFC 105.4.2
2	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Access roads shall be within 150 feet of all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. An approved turnaround is required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet. (OFC 503.1.1)	OFC 503.1.1
3	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Dead end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround. Diagrams can be found in the corresponding guide located at: http://www.tvfr.com/DocumentCenter/View/1295 .	OFC 503.2.5 & D103.1
4	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Buildings exceeding 30 feet in height or three stories in height shall have at least two separate means of fire apparatus access.	D104.1
5	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least two approved separate means of fire apparatus access. Exception: Projects having a gross building area of up to 124,000 square feet that have a single approved fire apparatus access road when all buildings are equipped throughout with approved automatic sprinkler systems.	OFC D104.2
6	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Multifamily projects having more than 100 dwelling units shall be provided with two separate and approved fire apparatus access roads. Exception: Projects having up to 200 dwelling units may have a single approved fire apparatus access road when all buildings, including nonresidential occupancies, are equipped throughout with an approved automatic sprinkler system in accordance with section 903.3.1.1, 903.3.1.2. Projects having more than 200 dwelling units shall be provided with two separate and approved fire apparatus roads regardless of whether they are equipped with an approved automatic sprinkler system.	OFC D106
7	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Buildings with a vertical distance between the grade plane and the highest roof surface that exceeds 30 feet in height shall be provided with a fire apparatus access road constructed for use by aerial apparatus with an unobstructed driving surface width of not less than 26 feet. For the purposes of this section, the highest roof surface shall be determined by	OFC D105.1, D105.2

ITEM #	PROVIDED	REQUIREMENT	CODE REF
		measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of the parapet walls, whichever is greater. Any portion of the building may be used for this measurement, provided that it is accessible to firefighters and is capable of supporting ground ladder placement.	
8	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Developments of one- or two-family dwellings, where the number of dwelling units exceeds 30, shall be provided with separate and approved fire apparatus access roads and shall meet the requirements of Section D104.3. Exception: Where there are more than 30 dwelling units on a single public or private fire apparatus access road and all dwelling units are equipped throughout with an approved automatic sprinkler system in accordance with section 903.3.1.1, 903.3.1.2, or 903.3.1.3 of the International Fire Code, access from two directions shall not be required.	OFC D107
9	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	At least one of the required aerial access routes shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building. The side of the building on which the aerial access road is positioned shall be approved by the Fire Marshal. Overhead utility and power lines shall not be located over the aerial access road or between the aerial access road and the building.	OFC D105.3, D105.4
10	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Where two access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the area to be served (as identified by the Fire Marshal), measured in a straight line between accesses.	OFC D104.3
11	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet (26 feet adjacent to fire hydrants and an unobstructed vertical clearance of not less than 13 feet 6 inches).	OFC 503.2.1 & D103.1
12	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	The fire district will approve access roads of 12 feet for up to three dwelling units (Group R-3) and accessory (Group U) buildings.	OFC 503.1.1
13	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Where access roads are less than 20 feet and exceed 400 feet in length, turnouts 10 feet wide and 30 feet long may be required and will be determined on a case by case basis.	OFC 503.2.2
14	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "No Parking" signs shall be installed on one or both sides of the roadway and in turnarounds as needed. Signs shall read "NO PARKING - FIRE LANE" and shall be installed with a clear space above grade level of 7 feet. Signs shall be 12 inches wide by 18 inches high and shall have red letters on a white reflective background.	OFC D103.6
15	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Where required, fire apparatus access roadway curbs shall be painted red (or as approved) and marked "NO PARKING FIRE LANE" at 25-foot intervals. Lettering shall have a stroke of not less than one inch wide by six inches high. Lettering shall be white on red background.	OFC 503.3
16	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet and shall extend 20 feet before and after the point of the hydrant.	OFC D103.1
17	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Where access roads are less than 20 feet and exceed 400 feet in length, turnouts 10 feet wide and 30 feet long may be required and will be determined on a case by case basis.	OFC 503.2.2
18	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Fire apparatus access roads shall be of an all-weather surface that is easily distinguishable from the surrounding area and is capable of supporting not less than 12,500 pounds point load (wheel load) and 75,000 pounds live load (gross vehicle weight). Documentation from a registered engineer that the final construction is in accordance with approved plans or the requirements of the Fire Code may be requested.	OFC 503.2.3
19	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	The inside turning radius and outside turning radius shall not be less than 28 feet and 48 feet respectively, measured from the same center point.	OFC 503.2.4 & D103.3
20	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Fire apparatus access roadway grades shall not exceed 15%. Alternate methods and materials may be available at the discretion of the Fire Marshal (for grade exceeding 15%).	OFC D103.2
21	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Approved forest dwellings (in which the structure meets all County forest dwelling fire siting, fire retardant roof, and spark arrestor requirements) are allowed up to 20% maximum grade. Access roads greater than 20% shall be considered on a case-by-case basis. Forest dwelling access roads shall be an all-weather surface capable of supporting imposed loads of not less than 37,000 pounds gross vehicle weight and be no less than 12 feet minimum width. All other access requirements, including turnarounds shall be determined upon a heavy brush unit response capability to the individual property.	OFC 503.1.1 & D102.1.1

ITEM #	PROVIDED	REQUIREMENT	CODE REF
22	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Turnarounds shall be as flat as possible and have a maximum of 5% grade with the exception of crowning for water run-off.	OFC 503.2.7 & D103.2
23	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Intersections shall be level (maximum 5%) with the exception of crowning for water run-off.	OFC 503.2.7 & D103.2
24	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Portions of aerial apparatus roads that will be used for aerial operations shall be as flat as possible. Front to rear and side to side maximum slope shall not exceed 10%.	OFC D103.2
25	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Gates securing fire apparatus roads shall comply with all of the following: <ol style="list-style-type: none"> 1. Minimum unobstructed width shall be not less than 20 feet (or the required roadway surface width). 2. Gates shall be set back at minimum of 30 feet from the intersecting roadway or as approved. 3. Electric gates shall be equipped with a means for operation by fire department personnel. 4. Electric automatic gates shall comply with ASTM F 2200 and UL 325. 	OFC D103.5, & 503.6
26	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Private bridges shall be designed and constructed in accordance with the State of Oregon Department of Transportation and American Association of State Highway and Transportation Officials Standards Standard Specification for Highway Bridges. Vehicle load limits shall be posted at both entrances to bridges when required by the Fire Marshal.	OFC 503.2.6
27	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Applicants shall provide documentation of a fire hydrant flow test or flow test modeling of water availability from the local water purveyor if the project includes a new structure or increase in the floor area of an existing structure. Tests shall be conducted from a fire hydrant within 400 feet for commercial projects, or 600 feet for residential development. Flow tests will be accepted if they were performed within 5 years as long as no adverse modifications have been made to the supply system. Water availability information may not be required to be submitted for every project.	OFC Appendix B
28	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Where a portion of a commercial building is more than 400 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the building, on-site fire hydrants and mains shall be provided.	OFC 507.5.1
29	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Where the most remote portion of a residential structure is more than 600 feet from a hydrant on a fire apparatus access road, as measured in an approved route around the exterior of the structure(s), on-site fire hydrants and mains shall be provided.	OFC 507.5.1
30	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Rural one-and-two-family dwellings, where there is no fixed and reliable water supply and there is approved access, shall not be required to provide a firefighting water supply.	OFC B103
31	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Detached U occupancies, in rural areas, that are in excess of 3,600 square feet are not required to have a water supply when they have approved fire department access.	OFC D102
32	Y <input checked="" type="checkbox"/> N/A <input type="checkbox"/>	Fire hydrants shall be located not more than 15 feet from an approved fire apparatus access roadway unless approved by the Fire Marshal.	OFC C102.1
33	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	Where fire hydrants are subject to impact by a motor vehicle, guard posts, bollards or other approved means of protection shall be provided.	OFC 507.5.6 & OFC 312
34	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	FDCs shall be located within 100 feet of a fire hydrant (or as approved). Hydrants and FDC's shall be located on the same side of the fire apparatus access roadway or drive aisle, fully visible, and recognizable from the street or nearest point of the fire department vehicle access or as otherwise approved.	OFC 912.2.1 & NFPA 13

ITEM #	PROVIDED	REQUIREMENT	CODE REF
35	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	<p>In new buildings where the design reduces the level of radio coverage for public safety communications systems below minimum performance levels, a distributed antenna system, signal booster, or other method approved by TVF&R and Washington County Consolidated Communications Agency shall be provided.</p> <p>http://www.tvfr.com/DocumentCenter/View/1296.</p> <ul style="list-style-type: none"> • Emergency responder radio system testing and/or system installation is required for this building. Please contact me (using my contact info below) for further information including an alternate means of compliance that is available. If the alternate method is preferred, it must be requested from TVF&R prior to issuance of building permit. • Testing shall take place after the installation of all roofing systems; exterior walls, glazing and siding/cladding; and all permanent interior walls, partitions, ceilings, and glazing. <p>MERRC Q&A MERRC Q&A MERRC Permit Application MERRC Permit Application</p>	OFC 510, Appendix F, & OSSC 915
36	Y <input type="checkbox"/> N/A <input checked="" type="checkbox"/>	A Knox box for building access may be required for structures and gates. See Appendix B for further information and detail on required installations. Order via www.knoxbox.com or contact TVF&R for assistance and instructions regarding installation and placement.	OFC 506.1

TUALATIN VALLEY WATER DISTRICT Test #: **1457**
FIRE HYDRANT FLOW TEST REPORT Hydrant ID #: **FH2451**

Location: NW Leahy Rd & Alpenglow Way Date: 3/12/2021

Test made by: PV / BMD

Witness: _____ Time: 9:15 AM

Project name: _____

Discharge coefficient: .54816

Inside dia. of outlet = 4.5 inches

Pitot reading = 19 psi Pitot 2 = 0 psi

Observed flow rate = 1442.8 gpm

Flow method: HOSE MONSTER

Static pressure: 79 psi Residual pressure: 62 psi

Flow at 20psi residual pressure (calculated): **2825** gpm NA
03/24/2021

Location map: To be attached to test report and to show which hydrants were used to monitor residual pressure and flow.

Gage information:

Static and residual pressure gage: Dial Pitot gage: Dial

Hydrant information:

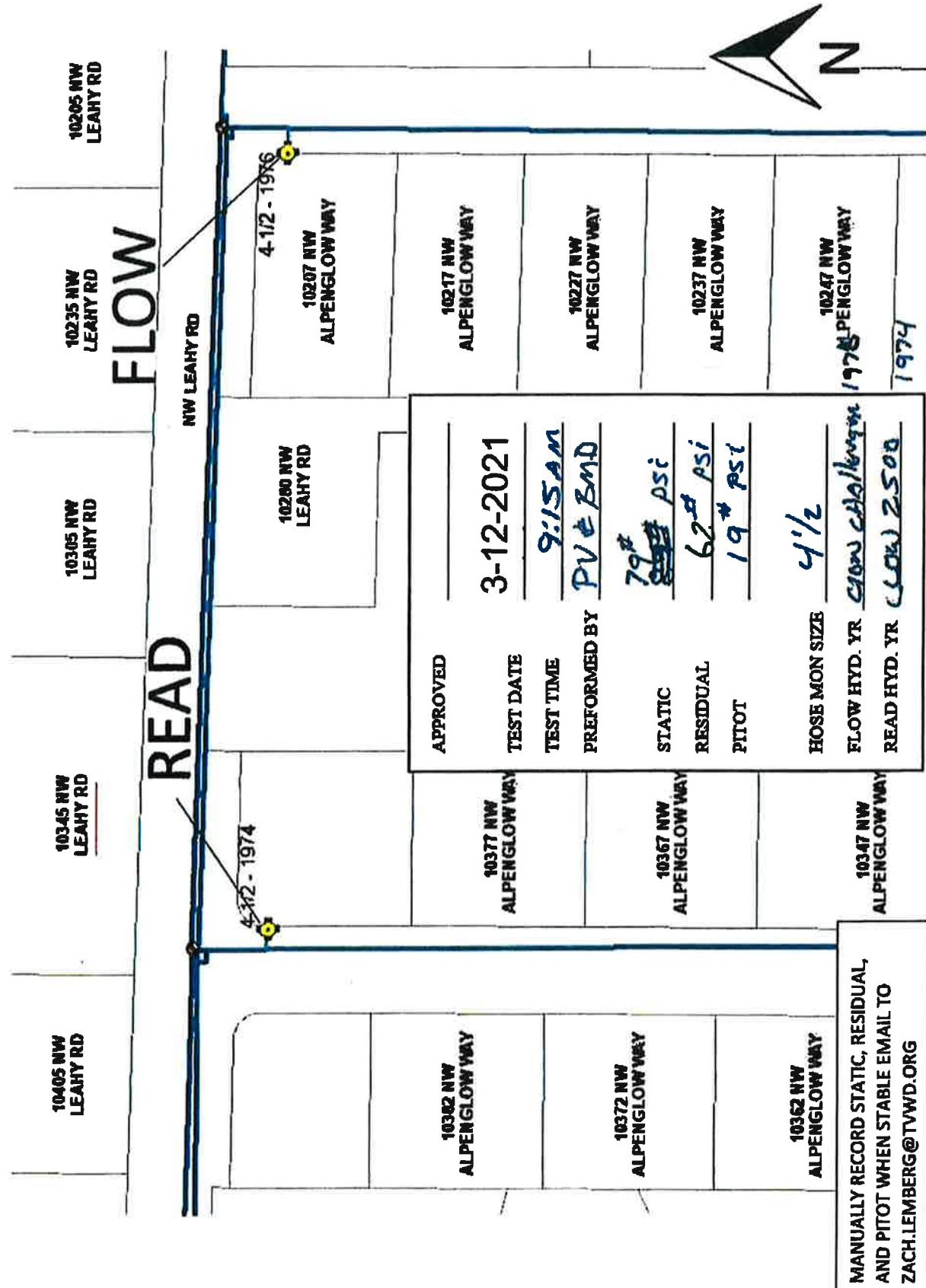
	<u>Hydrant ID</u>	<u>Year</u>	<u>Make</u>	<u>Notes</u>
Flow hydrant:	FH2451	1976	CLOW	see map for location
Read hydrant:	FH2454	1974	CLOW	see map for location

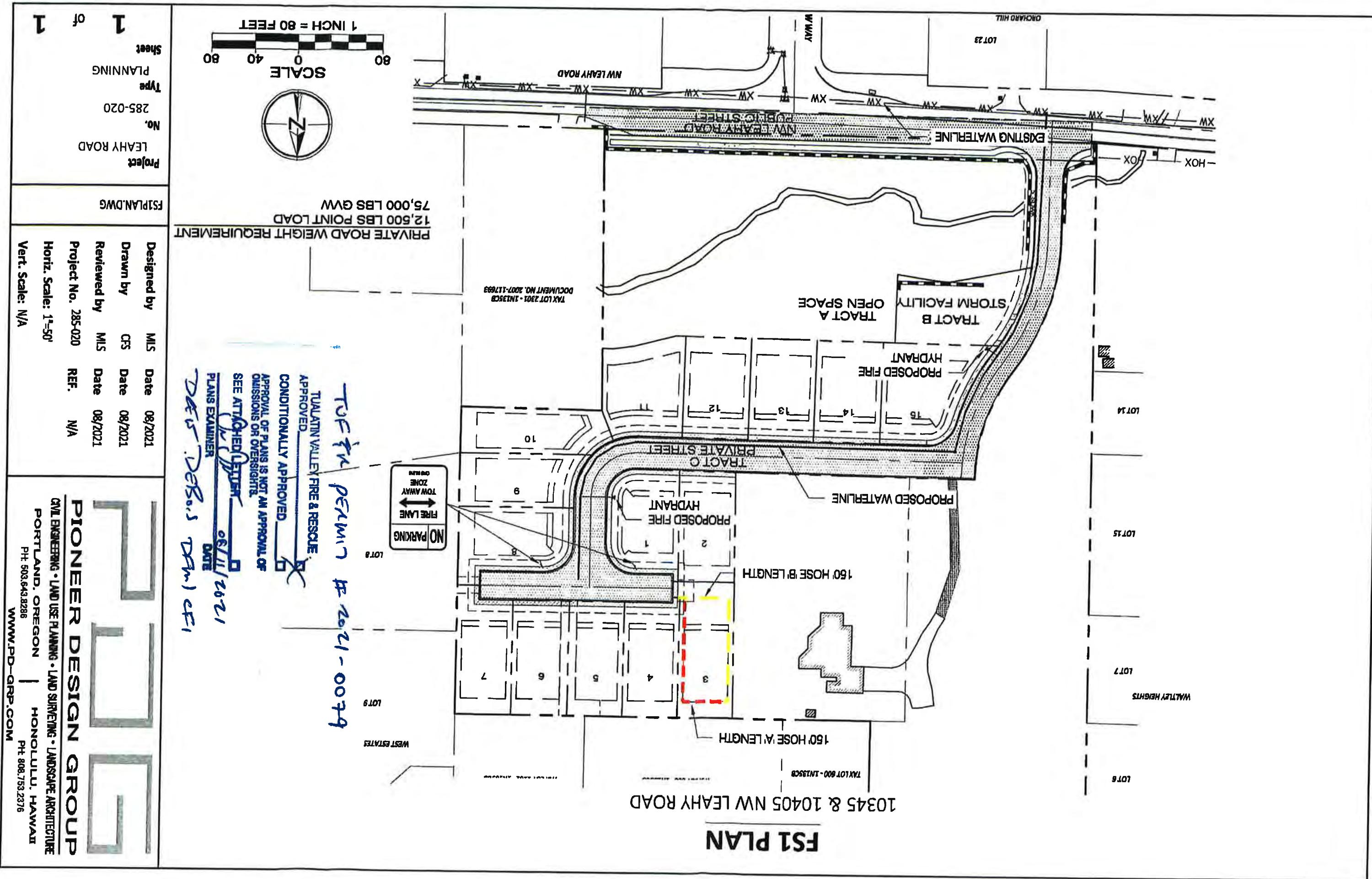
Remarks: No digital data available

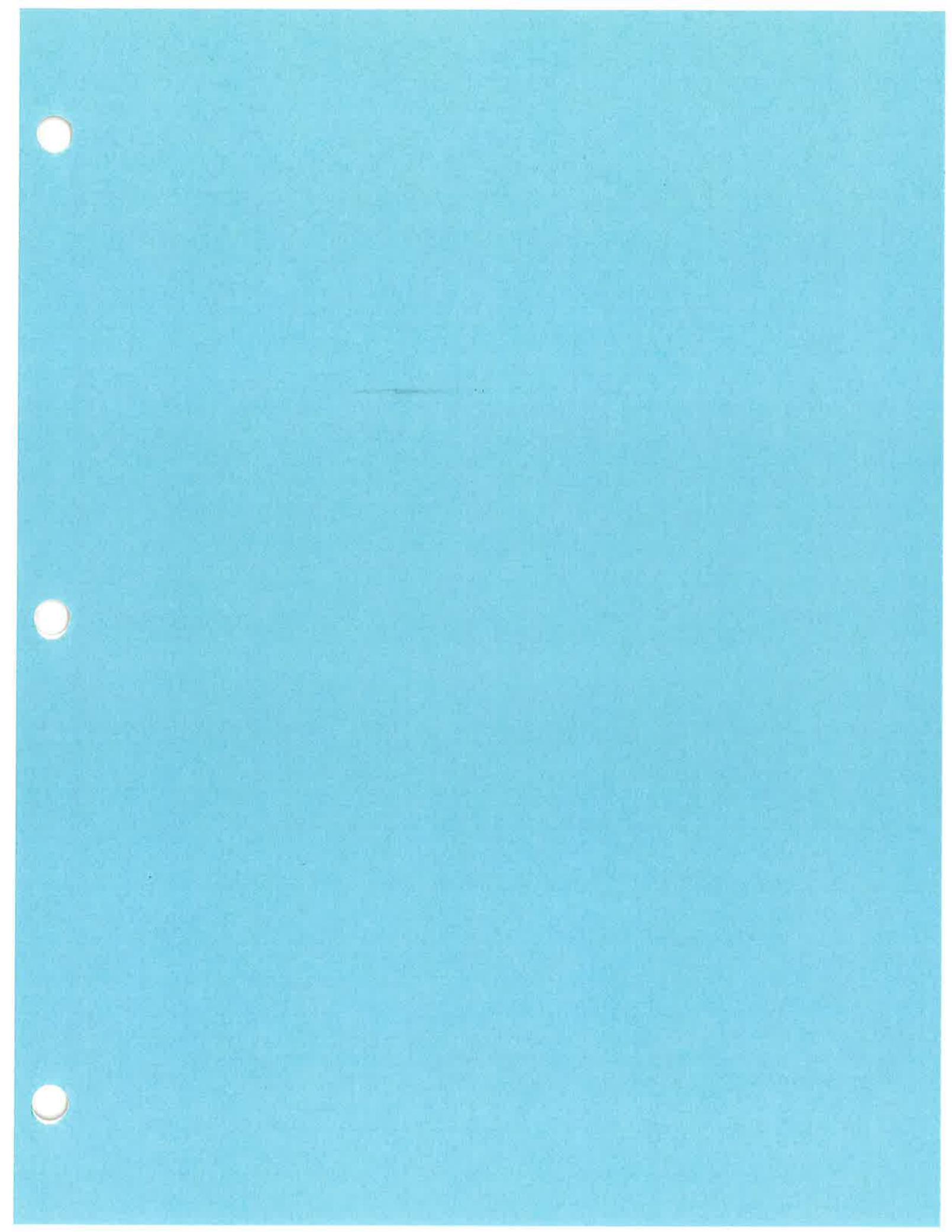
MODEL RESULTS: Read Hydrant 20 PSI Residual, 2365 GPM

ASSUMPTIONS: Minimum Day Afternoon Hour

The mapping, flow or pressure information contained herein reflects conditions on the date and time of the test. Tualatin Valley Water District makes no representation as to the system's ability to meet specific fire flow requirements. Future system capability may differ from the flows reported herein because of subsequent modifications to the district's system and/or because flow and pressure may vary by time of day and season. Test gage calibration information available upon request.







**WASHINGTON COUNTY**

Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
165 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

**Request For Statement Of Service
Availability THPRD**

TUALATIN HILLS PARK & REC. DISTRICT

PRE-APPLICATION DATE: _____

**Service Provider: PLEASE RETURN THIS FORM TO:
APPLICANT:**

COMPANY:	Pioneer Design Group
CONTACT:	Ben Altman
ADDRESS:	9020 SW Washington Sq. Rd. #170
PHONE:	Portland, OR 97223 971-708-6258 baltman@pd-grp.com

OWNER(S):

NAME:	Roy M. Hayes Living Trust
ADDRESS:	Attn: Mark Hayes 10345 NW Leahy Road Portland, OR 97229
PHONE:	_____
Property Desc.: Tax Map(s):	Lot Number(s):
1N1 35CB	2300

Site Size: 3.14 acres

Site Address: 10345 NW Leahy Road
Nearest cross street (or directions to site):
NW Alpenglow Way

PROPOSED PROJECT NAME: Leahy Road Subdivision

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
14-Lot Subdivision

EXISTING USE: 1 HomePROPOSED USE: 14 Homes, retain existing

IF RESIDENTIAL: 14
NO. OF DWELLING UNITS: 14
SINGLE FAM. 14 MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: _____
NO. OF SQ. FT. (GROSS FLOOR AREA) _____

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*******ATTENTION SERVICE PROVIDER*******

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.

(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

- SERVICE LEVEL IS ADEQUATE TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.
- This project is IN the THPRD. Please note that the majority of land area addressed by this project is located in an area with an adequate service level; however, the northeast corner of tax lot 1N135CB00400 crosses into an area where service is below the district's level of service standard.
- This project is OUT of the THPRD.
 This project IS required to annex into the THPRD service district prior to plat recordation.
 This project IS NOT required to annex.

SIGNATURE: *PL* POSITION: Planner II DATE: 3/23/21

SERVICE LEVEL IS INADEQUATE TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: _____ DATE: _____

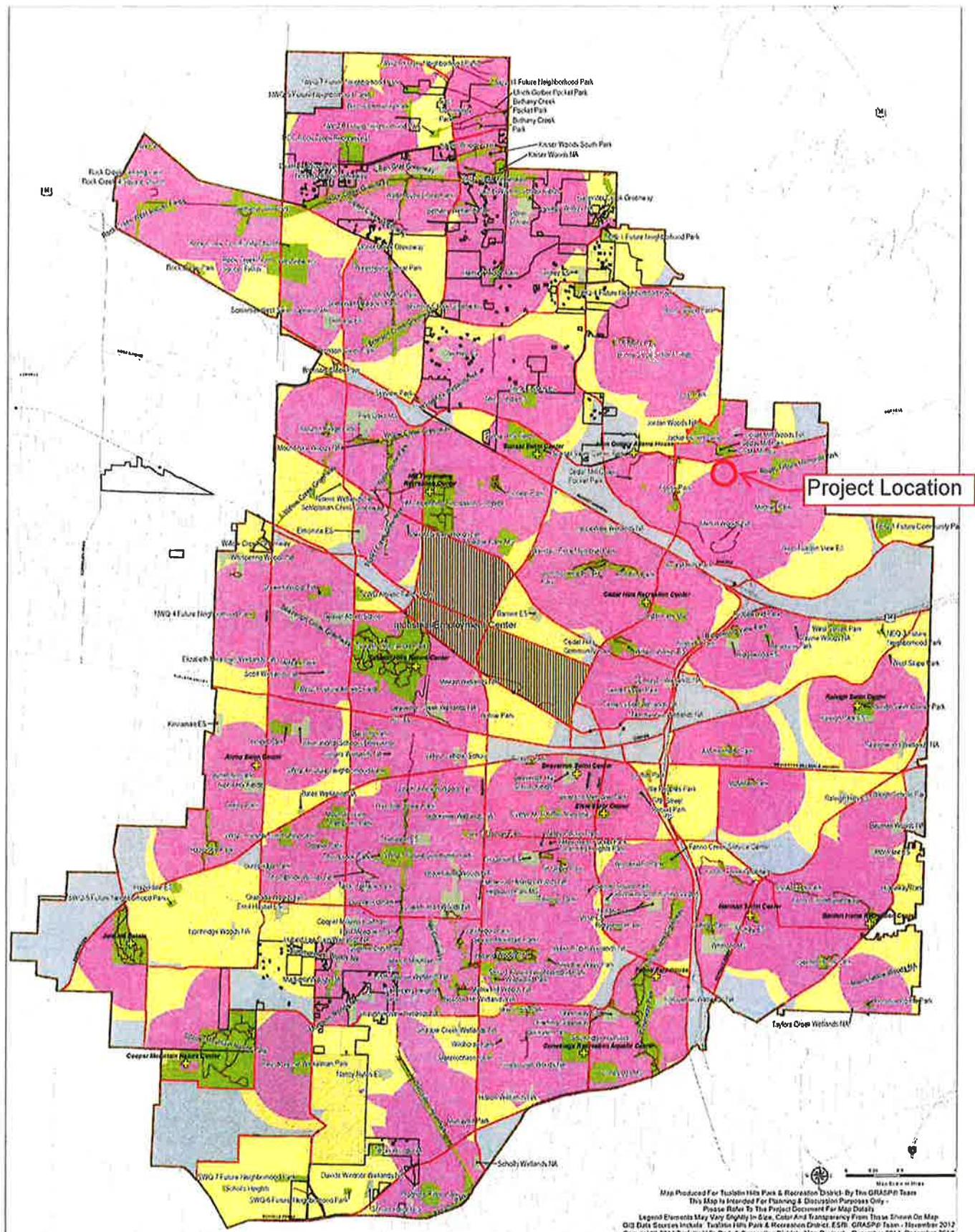
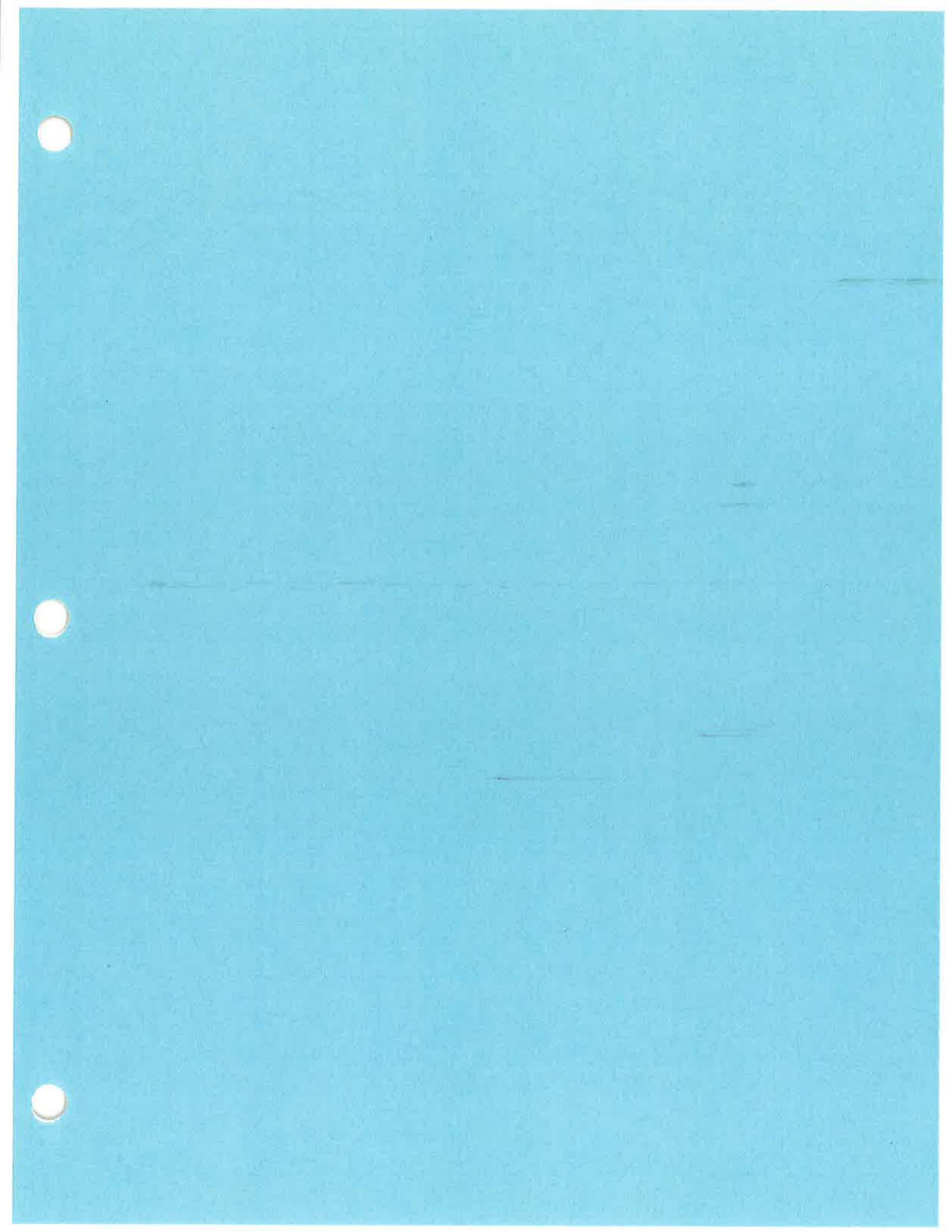


Figure 5. Perspective D: Gaps In Walk Access to All Recreation



DESIGN CONCEPTS GREENPL





WASHINGTON COUNTY
 Dept. of Land Use & Transportation
 Planning and Development Services
 Current Planning
 155 N. 1st Avenue, #350-13
 Hillsboro, OR 97124
 Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

Development Coordination Statement

CITY: PLEASE RETURN THIS FORM TO APPLICANT:

COMPANY: Pioneer Design Group
 CONTACT: Ben Altman
 ADDRESS: 9020 SW Washington Sq. Rd. #170
Portland, OR 97223
 PHONE: 971-608-6258
 EMAIL: baltman@pd-grp.com

ATTENTION:
 CITY OF City of Beaverton
 Planning Manager

OWNER(S):
 NAME: Westwood Homes, Bill Wagoner

ADDRESS: _____

PHONE: _____

Property Desc.: Tax Map(s): 1N1 35CB Lot Number(s): 400, 2300 & 2400

Site Size: 8.06 acres

Site Address: 10345 & 10405 NW Leahy Road

Nearest cross street (or directions to site):
NW Alpenglow Way

PROPOSED PROJECT NAME: Estates at Leahy Park

PROPOSED DEVELOPMENT ACTION: (PARTITION, SUBDIVISION, DEVELOPMENT REVIEW, AND GENERAL DESCRIPTION OF PROJECT)
15-Lot Subdivision

EXISTING USE: 2 Homes

PROPOSED USE 15 Homes

IF RESIDENTIAL:

NO. OF DWELLING UNITS: 15
 SINGLE FAM. 15 MULTI-FAM. _____

IF NON-RESIDENTIAL:

TYPE OF USE: _____
 NO. OF SQ. FT. (GROSS FLOOR AREA) _____

SITE PLAN INCLUDED

*****ATTENTION CITY OF Beaverton*****

PLEASE INDICATE THAT YOU HAVE DISCUSSED THE PROPOSED PROJECT WITH THE APPLICANT.
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.

(Do NOT return this form to Washington County. The applicant will submit the completed form
 with their Land Development Application submittal).

- CITY HAS RECEIVED NOTIFICATION OF PENDING APPLICATION
- CONNECTION TO CITY SERVICES ARE NECESSARY TO SERVE THE PROPOSED DEVELOPMENT - ANNEXATION IS NECESSARY SERVICES NEEDED: WATER SANITARY SEWER STORM WATER
- CONNECTION TO CITY SERVICES ARE NOT REQUIRED TO SERVE THE PROPOSED DEVELOPMENT

X SEE BELOW

NAME (PRINT): Jana Fox

SIGNATURE: _____

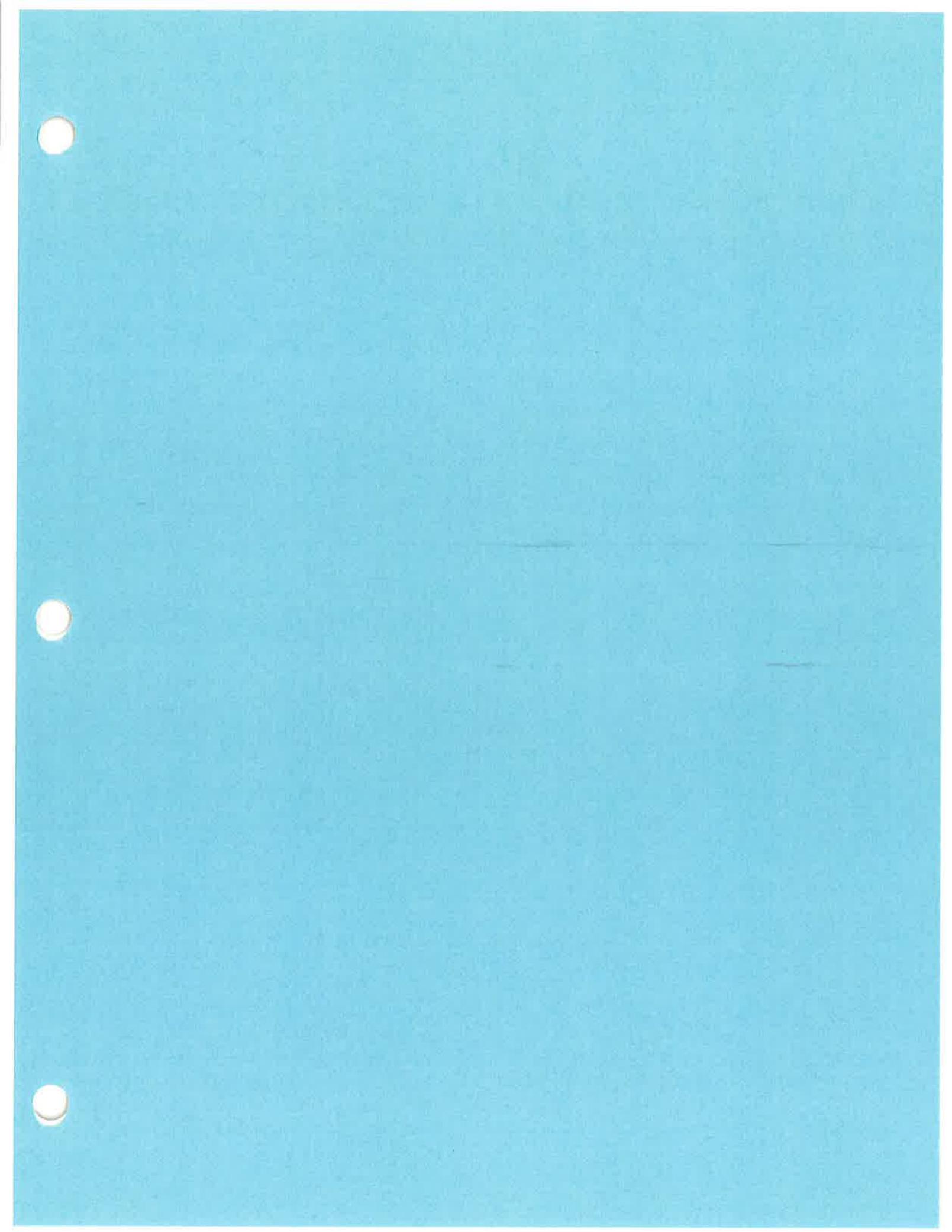
Digitally signed by Jana Fox
 Date: 07/20/2021
 E:\USERS\JANAF\DESKTOP\BEAVERTON\PLANNING\JANA FOX\JANA FOX
 File: 122107201939010700

POSITION: Planning Manager PHONE: 503.523.8530 DATE: 7/20/2021

ATTACHMENTS INCLUDED

04/10/19

Annexation may be required if upgrades to City facilities are required, there are city facilities downstream but not directly adjacent. Downstream analysis (and concurrence) should be performed by an engineering prior to final determination.





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Current Planning
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<http://www.co.washington.or.us>

**Request for Statement of Service
Availability for Schools**

SCHOOL DISTRICT NO.: Beaverton

PRE-APPLICATION DATE: _____

**Service Provider: PLEASE RETURN THIS FORM TO:
APPLICANT:**

COMPANY: Pioneer Design Group

CONTACT: Ben Altman

ADDRESS: 9020 SW Washington Sq. Rd. #170
Portland, OR 97229

PHONE: 971-708-6258 baltman@pd-grp.com

OWNER(S):

NAME: Roy M. Hayes Living Trust

ADDRESS: Attn: Mark Hayes 10345 NW Leahy Road
Portland, OR 97229

PHONE: _____

Property Desc.: Tax Map(s): 1N1 35CB Lot Number(s): 2300

Site Size: 3.14 acres

Site Address: 10345 NW Leahy Road

Nearest cross street (or directions to site):
NW Alpenglow Way

PROPOSED PROJECT NAME: Leahy Road Subdivision

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)

14-Lot Subdivision

EXISTING USE: 12 Homes

PROPOSED USE: 14 Homes, retain existing

IF RESIDENTIAL:

NO. OF DWELLING UNITS: 14

SINGLE FAM. 14 MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:

TYPE OF USE: _____

NO. OF SQ. FT. (GROSS FLOOR AREA): _____

IF INSTITUTIONAL:

NO. SQ. FT. _____

NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*******ATTENTION SERVICE PROVIDER*******

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE.

RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.

(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal.)

SERVICE LEVEL IS ADEQUATE TO SERVE THE PROPOSED PROJECT.

SIGNATURE: _____ POSITION: _____ DATE: _____

FOR SERVICE LEVEL INFORMATION, SEE ATTACHED LETTER. (Per CDC §501-B,2 A)

SIGNATURE: M POSITION: Facilities Planning Coord DATE: 4/7/2021

SERVICE LEVEL IS INADEQUATE TO SERVE THE PROPOSED PROJECT.

If the present or future service level is inadequate, please provide information documenting your inability to provide an adequate level of service. Additionally, provide information regarding whether the use of alternative means can be employed to provide an adequate service level. Documentation of adequacy and alternatives to provide an adequate service level may include but not be limited to the following:
1. Amount of bonded indebtedness; 2. Use of double shifting; 3. Extended school periods; 4. Bussing to underutilized facilities; 5. Year-around school; 6. Construction of new facilities; 7. Portable classrooms; 8. Impact fees; 9. Any combination of these or other alternatives.

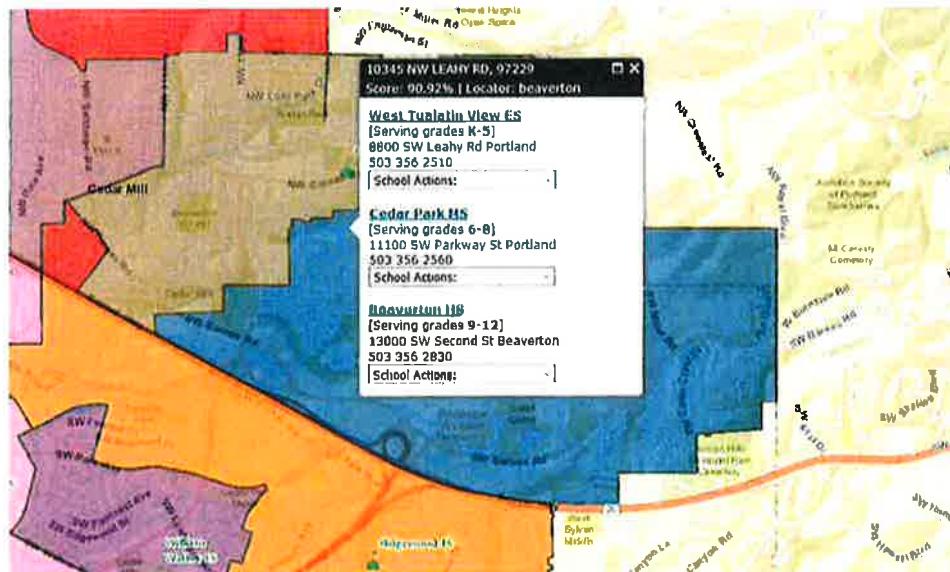
SIGNATURE: _____ POSITION: _____ DATE: _____

4/7/2021

School Service Provider Statement

Leahy Rd Subdivision

10345 NW Leahy Rd



Proposed Unit Types	Total Units
Single Family Detached	14
Single Family Detached (small lot)	0
Single Family Attached	0
Multi-Family	0
Total	14

The District has evaluated the proposal and has projected that the development will produce the following impact on Beaverton School District:

Estimated Student Generation (total of all units)	Students
Elementary School (K-5)	6
Middle School (6-8)	2
High School (9-12)	1
Total	9

This development proposal is located in an area of the District that has experienced rapid and sustained residential housing growth. The District carefully monitors residential development projects, school capacity and projected student levels. The proposed development will be served by the following schools.

Utilization of Capacity Fall	
Current Attendance Boundary	2019
West Tualatin View Elementary	83%
Cedar Park Middle School	94%
Beaverton High School	69%

With new school capacity scheduled to come on line in the years ahead, the District believes there will be sufficient capacity to accommodate new students from the project.

As of this writing, the following capacity & enrollment adjustment activities are underway. Capacity projects are funded primarily by the 2014 voter-approved Bond Program.

- Sato Elementary School in the North Bethany community, opened for Fall 2017;
- Mountainside High School in the South Cooper Mountain area, opened for Fall 2017;
- A new middle school in the Timberland community will open for students in the Fall of 2021.

Until such time as new school capacity is available, the district will continuously monitor enrollment and capacity at all schools and may, from time to time, take additional actions to manage enrollment and capacity issues.

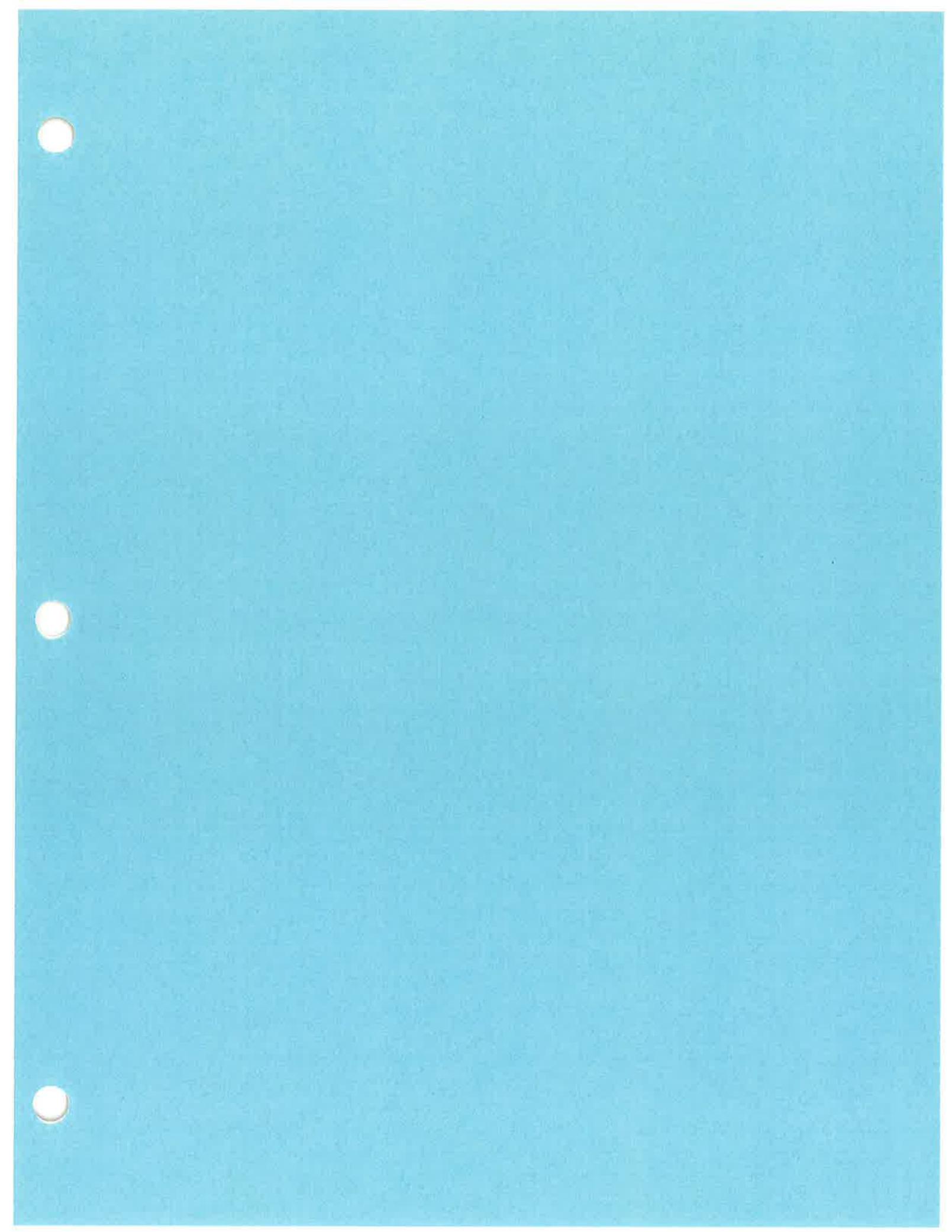
Please, note that as a result of these actions, attendance boundaries, at all school levels, are subject to change after the issuance of this service provider statement.



Robert McCracken
Facilities Planning Coordinator

4/7/2021

Date



**WASHINGTON COUNTY**

Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

**Request For Statement Of Service
Availability For Sheriff / Police Services** WASHINGTON COUNTY SHERIFF

PRE-APPLICATION DATE:

**Service Provider: PLEASE RETURN THIS FORM TO:
APPLICANT:**

COMPANY: Pioneer Design Group
CONTACT: Ben Altman
ADDRESS: 9020 SW Washington Sq. Rd. #170
Portland, OR 97223
PHONE: _____

OWNER(S):

NAME: Roy M. Hayes Living Trust
ADDRESS: Attn: Mark Hayes 10345 NW Leahy Road
Portland, OR 97229

PHONE: _____

Property Desc.: Tax Map(s): 1N1 35CB Lot Number(s): 2300

Site Size: 3.14 acres

Site Address: 10345 NW Leahy Road
Nearest cross street (or directions to site):
NW Alpenglow Way

PROPOSED PROJECT NAME: Leahy Road SubdivisionPROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
14-Lot SubdivisionEXISTING USE: 1 HomePROPOSED USE: 14 Homes, retain existingIF RESIDENTIAL: 14
NO. OF DWELLING UNITS: 14
SINGLE FAM. 14 MULTI-FAM. _____IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: _____
NO. OF SQ. FT. (GROSS FLOOR AREA) _____IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____*******ATTENTION SERVICE PROVIDER*******

**PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.**

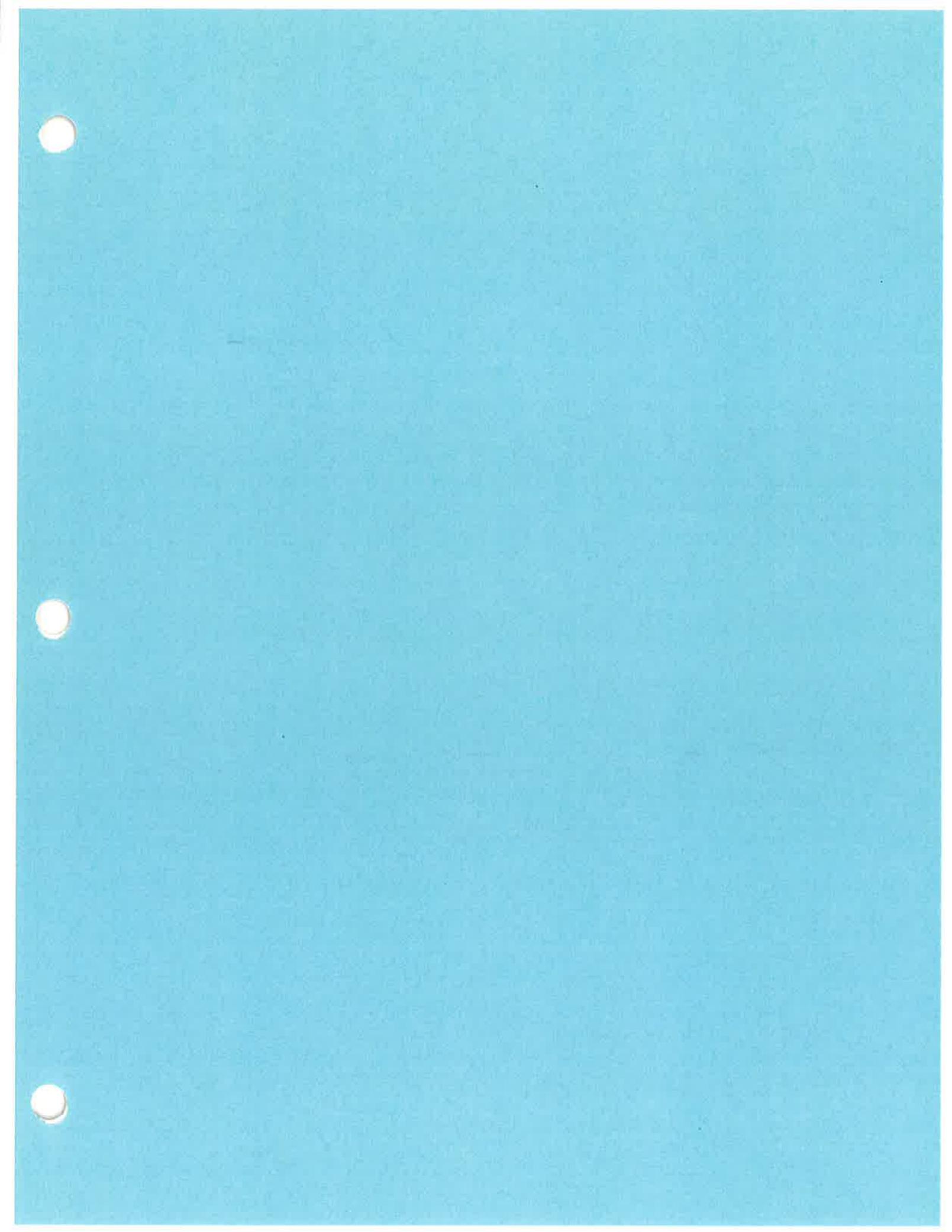
(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

SERVICE LEVEL IS ADEQUATE TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

SIGNATURE: Kerry DeeganPOSITION: LieutenantDATE: 08/29/2021 SERVICE LEVEL IS INADEQUATE TO SERVICE THE PROPOSED PROJECT.

If the present or future service level is inadequate, please provide information documenting your inability to provide an adequate level of service. Please also provide information regarding whether the use of alternative means can be employed to provide an adequate service level. Documentation of adequacy and alternatives to provide an adequate service level may include but not be limited to the following:
1. Contracting with private agency; 2. Contracting with other public agency; 3. Impact fees; 4. Any combination of these or other alternatives.

SIGNATURE: _____ POSITION: _____ DATE: _____





WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services Division
Current Planning Section
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

Transit Availability Statement (Applicant to Complete)

Please Note: In accordance with a letter dated January 15, 2013, from the Director of TriMet Policy & Planning, this Transit Availability Statement shall serve as a functional replacement to the Service Provider Letter required from TriMet pursuant to Section 501-8.2.A.(1).

Transit information shall be obtained from TriMet's web site. Maps can be found at www.trimet.org (click on "Maps & Schedules" and then "Interactive System Map") or directly at <http://ride.trimet.org/?tool=routes#/>. The interactive map will display any transit routes and stops near the site. Please print the map and attach it to this form.

PRE-APPLICATION DATE: _____

*** **Applicant:** Please complete this form yourself using the links listed at the left. Submit the completed form with your land use application. Please do not send this in prior to application submittal.

OWNER(S):

NAME: Roy M. Hayes, Living Trust
ADDRESS: 10345 NW Leahy Road
Portland, OR 97229

PHONE: _____

Property Desc.: Tax Map(s): Lot Number(s):
1N1 35CB 2300

Site Size: 3.14 acres

Site Address: 10345 NW Leahy Road

Nearest cross street (or directions to site):
NW Alpenglow Way

PROPOSED PROJECT NAME: Leahy Road Subdivision

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, PARTITION, SPECIAL USE)

14-Lot Subdivision

EXISTING USE: 1 Home

PROPOSED USE: 14-lot Subdivision

IF RESIDENTIAL:

NO. OF DWELLING UNITS: 14

SINGLE FAM. 14

IF INDUSTRIAL/COMMERCIAL:

TYPE OF USE: _____

NO. OF SQ. FT. (GROSS FLOOR AREA) _____

IF INSTITUTIONAL:

NO. SQ. FT. _____

NO. STUDENTS/EMPLOYEES/MEMBERS: _____

TRANSIT AVAILABILITY/IMPROVEMENTS:

50- Barnes Rd. &

a) Name/number of nearest transit line(s): 48H- Cornell Lines and stop(s): 10442

b) Are any transit stops located within 300 feet of the development site?: Yes, across the street at Alpenglow Way

c) Please describe improvements proposed, if any, to new or existing transit stops, or proposed improvements to access to existing transit facilities: No specific transit improvements are proposed.

Please Note: If the development is located within 300 feet of a transit stop and/or any improvements are proposed per c) above, Current Planning Services will forward a copy of the application to TriMet for review upon application acceptance for processing.

Select a bus or rail line...

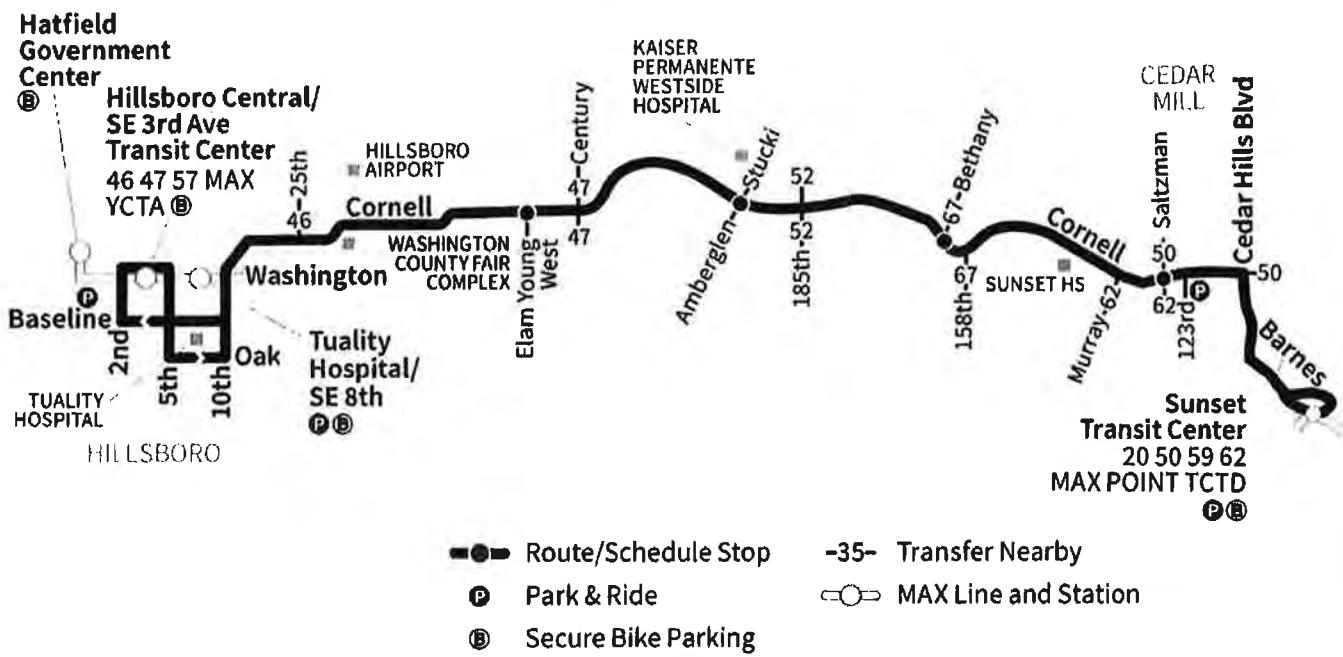


48-Cornell

48-Cornell runs between Hillsboro Transit Center, Hillsboro Airport/Fair Complex, Tanasbourne, Cedar Mill, and Sunset Transit Center, along Cornell, Cedar Hills and Barnes.

[Route Map](#)[Schedules](#)[Email updates](#)

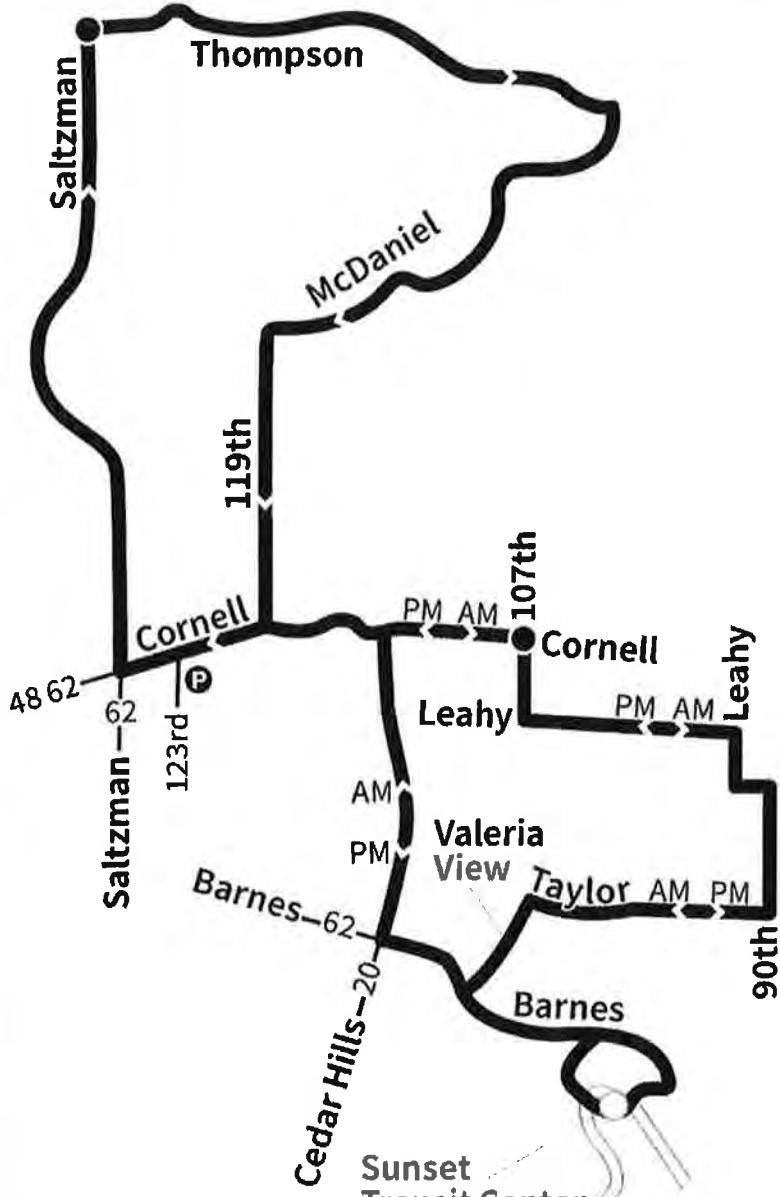
LINE 48 ROUTE MAP

[View on Interactive Map](#)

LINE 48 SCHEDULES

Monday—Friday

50-Cedar Mill



NORTH

—●— Route/Schedule Stop

● P Park & Ride

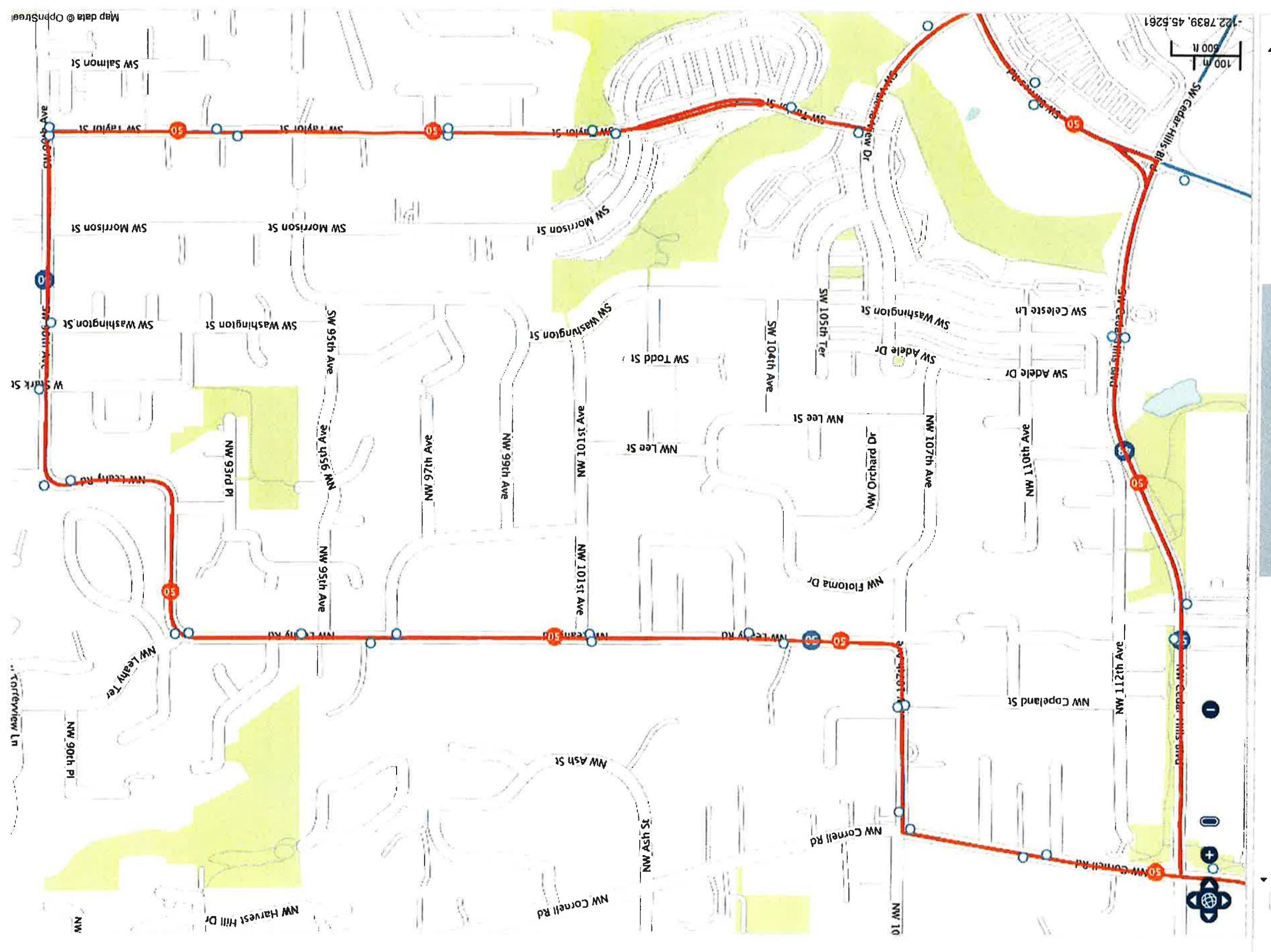
● B Secure Bike Parking

-35- Transfer Nearby

○ MAX Line and Station



For snow/ice
detours and
cancellations visit
trimet.org or call
503-238-RIDE (7433).



**WASHINGTON COUNTY**

Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

Request For Statement Of Service Availability (Service Provider Letter)

- WATER DISTRICT: _____
- FIRE DISTRICT: _____
- CITY OF: _____
- CLEAN WATER SERVICES (Sanitary Sewer)

Additionally, you'll need our separate, individual request forms titled:

- ◆ Clean Water Services (Surface Water Mgmt.)
- ◆ Tri-Met
- ◆ School
- ◆ Sheriff / Police
- ◆ Tualatin Hills Park & Recreation District

PROPOSED PROJECT NAME: Estates at Leahy Park

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)

15-Lot Subdivision

EXISTING USE: 2 Homes

PROPOSED USE: 15 Homes, retain existing

IF RESIDENTIAL:

NO. OF DWELLING UNITS: 15
SINGLE FAM. 15 MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:

TYPE OF USE: _____
NO. OF SQ. FT. (GROSS FLOOR AREA) _____

IF INSTITUTIONAL:

NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*****ATTENTION SERVICE PROVIDER*****

**PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.**

(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

- SERVICE LEVEL IS ADEQUATE TO SERVE THE PROPOSED PROJECT. (Use additional sheets if necessary.)
Please indicate what improvements, or revisions to the proposal are needed for you to provide adequate service to this project.

Each lot must have direct access to public sanitary sewer by gravity

SIGNATURE: Chris Baltman POSITION: ET3 DATE: 11/3/21

- SERVICE LEVEL IS INADEQUATE TO SERVICE THE PROPOSED PROJECT.
Please indicate why the service level is inadequate.

SIGNATURE: _____ POSITION: _____ DATE: _____

21-002099



WASHINGTON COUNTY

Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

Request For Statement Of Design Considerations For Surface Water Management. (Clean Water Services)

- CWS (Clean Water Services)
2550 SW Hillsboro Hwy
Hillsboro, OR 97123-9379
503-681-3600
- OTHER _____

PRE-APPLICATION DATE: _____

**Service Provider: PLEASE RETURN THIS FORM TO:
APPLICANT:**

COMPANY: Pioneer Design Group
CONTACT: Ben Altman
ADDRESS: 9020 SW Washington Sq. Rd. #170
Portland, OR 97223
PHONE: 971-708-6258 baltman@pd-grp.com

OWNER(S):

NAME: Roy M. Hayes Living Trust
ADDRESS: Attn: Mark Hayes 10345 NW Leahy Road
Portland, OR 97229
PHONE: _____
Property Desc.: Tax Map(s): 1N1 35CB Lot Number(s): 400, 2300 & 2400

Site Size: 8.06 acres

Site Address: 10345 & 10405 NW Leahy Road
Nearest cross street (or directions to site):
NW Alpenglow Way

PROPOSED PROJECT NAME: Estates at Leahy Park

PROPOSED DEVELOPMENT ACTION: (DEVELOPMENT REVIEW, SUBDIVISION, MINOR PARTITION, SPECIAL USE)
15 Lot Subdivision

EXISTING USE: 2 Homes

PROPOSED USE: 15 Homes, retain existing

IF RESIDENTIAL: 15
NO. OF DWELLING UNITS: 15
SINGLE FAM. 15 MULTI-FAM. _____

IF INDUSTRIAL/COMMERCIAL:
TYPE OF USE: _____
NO. OF SQ. FT. (GROSS FLOOR AREA) _____

IF INSTITUTIONAL:
NO. SQ. FT. _____
NO. STUDENTS/EMPLOYEES/MEMBERS: _____

*****ATTENTION SERVICE PROVIDER*****

PLEASE INDICATE THE LEVEL OF SERVICE AVAILABLE TO THE SITE (ADEQUATE OR INADEQUATE).
RETURN THIS COMPLETED FORM TO THE APPLICANT AS LISTED ABOVE.

(Do NOT return this form to Washington County. The applicant will submit the completed form with their Land Development Application submittal).

ATTACH THE FOLLOWING INFORMATION TO THIS APPLICATION:

1. Topographical map (minimum scale 1"= 200', contour interval no closer than 5 feet)
2. Development layout (streets, lots, parking areas, building configuration, pathways, creeks, wetland, landscape areas)
3. Vicinity map (minimum scale 1" – 1/4 mile)

TO BE COMPLETED BY GOVERNING JURISDICTION. **DEVELOPMENT ACTION SUBMITTAL MUST CONSIDER:**

Water Quality Facility required Y N
Hydraulic and hydrological analysis required Y N

Water Quantity Facility required
Vegetated corridor required

Depends on analysis
 Y N
 Y N

COMMENTS/EXPLANATION:

Variable vegetated corridor width per SPL 21-002098 issued on 10/5/21

SIGNATURE:

POSITION: ET3

DATE: 11/3/21

07/05/16

SENSITIVE AREA PRE-SCREENING SITE ASSESSMENT

Clean Water Services File Number

21-000790

1. Jurisdiction: Washington County

2. Property Information (example: 1S234AB01400)

Tax lot ID(s): 1N1 35CB 02300

OR Site Address: 10345 NW Leahy Road

City, State, Zip: Portland, OR 97229

Nearest cross street: NW Alpenglow Way

4. Development Activity (check all that apply)

- Addition to single family residence (rooms, deck, garage)
 - Lot line adjustment Minor land partition
 - Residential condominium Commercial condominium
 - Residential subdivision Commercial subdivision
 - Single lot commercial Multi lot commercial
- Other _____

6. Will the project involve any off-site work? Yes No Unknown

Location and description of off-site work:

7. Additional comments or information that may be needed to understand your project: 14-Lot Subdivision,
See Attached Environmental Report

This application does NOT replace Grading and Erosion Control Permits, Connection Permits, Building Permits, Site Development Permits, DEQ 1200-C Permit or other permits as issued by the Department of Environmental Quality, Department of State Lands and/or Department of the Army COE. All required permits and approvals must be obtained and completed under applicable local, state, and federal law.

By signing this form, the Owner or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site. I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Print/type name Ben Altman

Print/type title Senior Planner

Signature _____

Date 3-9-2021

FOR DISTRICT USE ONLY

- Sensitive areas potentially exist on site or within 200' of the site. **THE APPLICANT MUST PERFORM A SITE ASSESSMENT PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER.** If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resources Assessment Report may also be required.
- Based on review of the submitted materials and best available information sensitive areas do not appear to exist on site or within 200' of the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, State and federal law.
- Based on review of the submitted materials and best available information the above referenced project will not significantly impact the existing or potentially sensitive area(s) found near the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect additional water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider Letter as required by Resolution and Order 19-5, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, state and federal law.
- THIS SERVICE PROVIDER LETTER IS NOT VALID UNLESS CWS APPROVED SITE PLAN(S) ARE ATTACHED.**
- The proposed activity does not meet the definition of development or the lot was platted after 9/9/95 ORS 92.040(2). **NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.**

Reviewed by

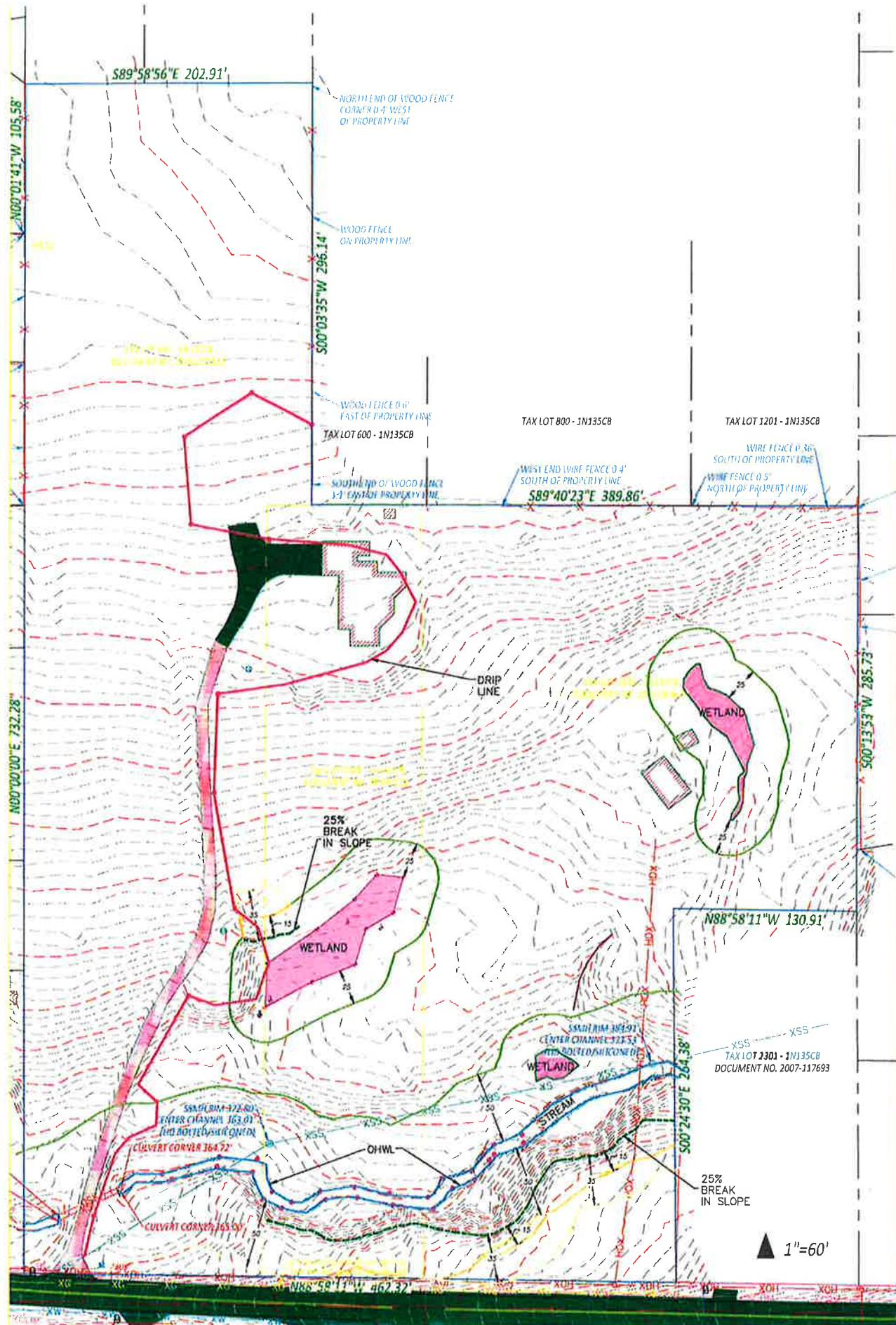


Date 3/26/21

Once complete, email to: SPLReview@cleanwaterservices.org • Fax: (503) 681-4439

OR mail to: SPL Review, Clean Water Services, 2550 SW Hillsboro Highway, Hillsboro, Oregon 97123

Revised 2/2020





Oregon

Kate Brown, Governor

October 9, 2019

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

Kate Brown

Governor

Bev Clarno

Secretary of State

Roy M. Hayes Living Trust
Attn: Mark Hayes
10345 NW Leahy Rd.
Portland, OR 97229

Re: WD # 2019-0503 Approved
Wetland Delineation Report for NW Leahy Rd
Washington County; T1N R1W S35CB TL2300

Tobias Read
State Treasurer

Dear Mr. Hayes:

The Department of State Lands has reviewed the wetland delineation report prepared by Schott & Associates for the site referenced above. Based upon the information presented in the report, we concur with the wetland and waterway boundaries as mapped in Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, two wetlands (Wetlands 1 and 2, totaling approximately 0.044 acres), one ditch and one stream were identified. The wetlands and stream are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). The ditch is exempt per OAR 141-085-0515(8).

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact Chris Stevenson, the Jurisdiction Coordinator for Washington County, at (503) 986-5246.

Sincerely,

Peter Ryan

Digitally signed by Peter Ryan
Date: 2019.10.09 09:25:14
-07'00'

Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

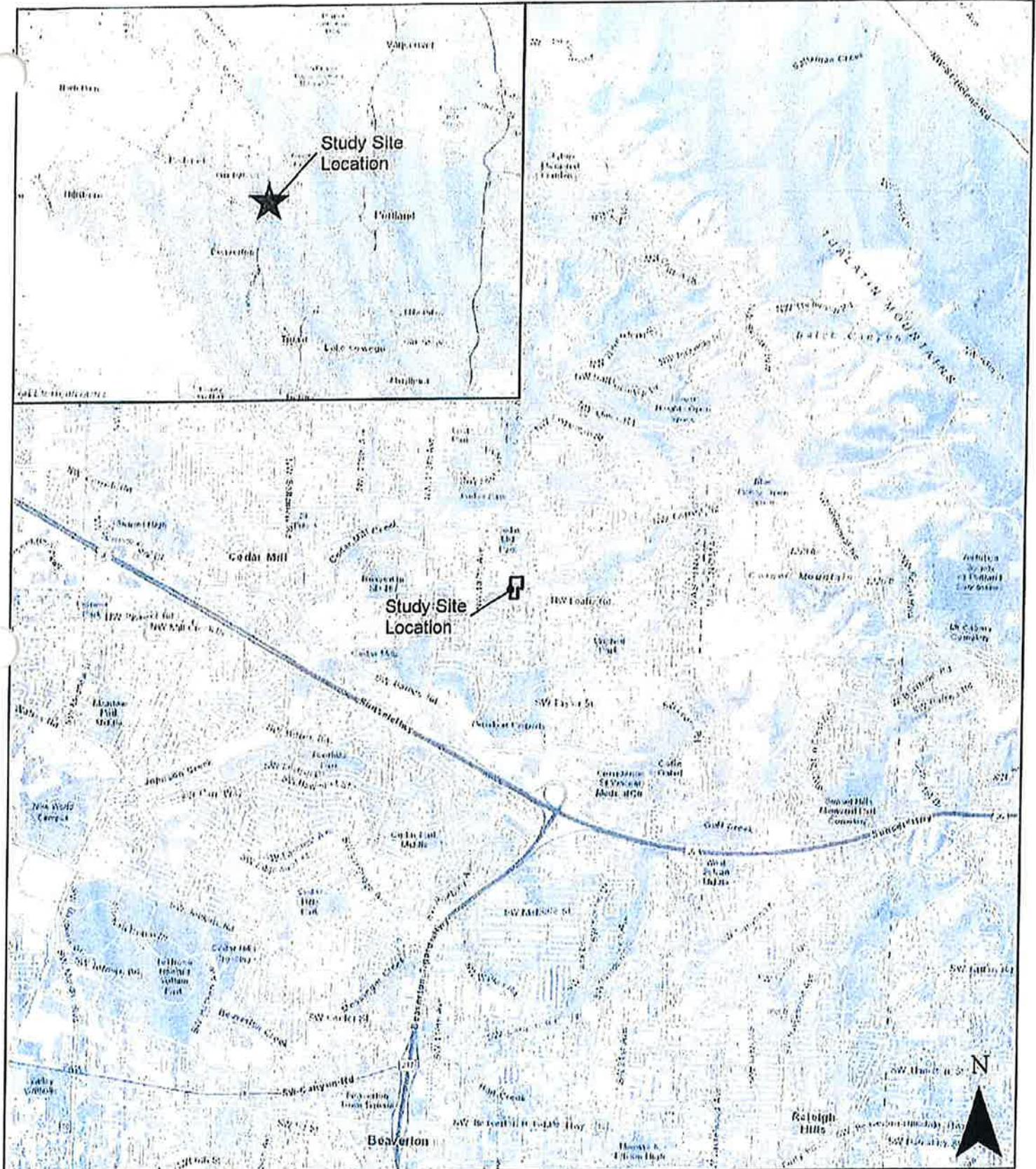
cc: Kim Biafora, Schott & Associates
Todd Knudsen, Berkshire Hathaway Home Services NW Real Estate
City of Portland Planning Department (Maps enclosed for updating LWI)
Carrie Bond, Corps of Engineers
Anita Huffman, DSL
Lindsey Obermiller, Clean Water Services

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279. A single PDF of the completed cover form and report may be e-mailed to: Wetland_Delineation@dsl.state.or.us. For submittal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information	
<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: Roy M. Hayes Living Trust 10345 NW Leahy Rd Portland, OR 97228	
<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address (if different): Todd Knudsen Berkshire Hathaway Home Services NW Real Estate 9600 SW Barnes Rd, Suite 100 Portland, OR 97226	
I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact. Typed/Printed Name: <u>Mack A Hayes</u> Signature: <u>MAY</u> Date: <u>9/16/2019</u> Special Instructions regarding site access:	
Project and Site Information	
Project Name: NW Leahy Road Latitude: 45.624038° Longitude: -122.783329° <small>decimal degree - centroid of site or start & end points of linear project</small>	
Proposed Use: Residential development Tax Map # 1N185CB Tax Lot(s) 2300	
Project Street Address (or other descriptive location): 10345 NW Leahy Rd Tax Map # Township 1N Range 1W Section 35CB QQ NW/SW <small>Use separate sheet for additional tax and location information</small>	
City: Portland County: Washington Waterway: Unnamed Trib #1 River Mile: 1	
Wetland Delineation Information	
Wetland Consultant Name, Firm and Address: Kim Blafora, Schott & Associates 21018 NE Hwy 99E Aurora, OR 97002 Phone # (503) 678-0007 Mobile phone # (if applicable) E-mail: kim@schottandassociates.com	
The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: <u>Kim Blafora</u> Date: <u>9/16/2019</u>	
Primary Contact for report review and site access is <input type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input checked="" type="checkbox"/> Authorized Agent	
Wetland/Waters Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Study Area size: 3.14 Total Wetland Acreage: 0.0440	
Check Applicable Boxes Below	
<input type="checkbox"/> R-F permit application submitted <input type="checkbox"/> Fee payment submitted \$ _____ <input type="checkbox"/> Mitigation bank site <input type="checkbox"/> Fee (\$100) for resubmittal of rejected report <input type="checkbox"/> Industrial Land Certification Program Site <input type="checkbox"/> Request for Reissuance. See eligibility criteria. (no fee) <input type="checkbox"/> Wetland restoration/enhancement project (not mitigation) DSL # _____ Expiration date _____ <input type="checkbox"/> Previous delineation/application on parcel If known, previous DSL # _____ <input type="checkbox"/> LWI shows wetlands or waters on parcel Wetland ID code _____	
For Office Use Only	
DSL Reviewer: <u>CS</u> Fee Paid Date: <u>9/16/19</u> DSL WD # <u>2019-0503</u>	
Date Delineation Received: <u>9/16/19</u> Scanned: <input type="checkbox"/> Electronic: <input checked="" type="checkbox"/> DSL App.# _____	



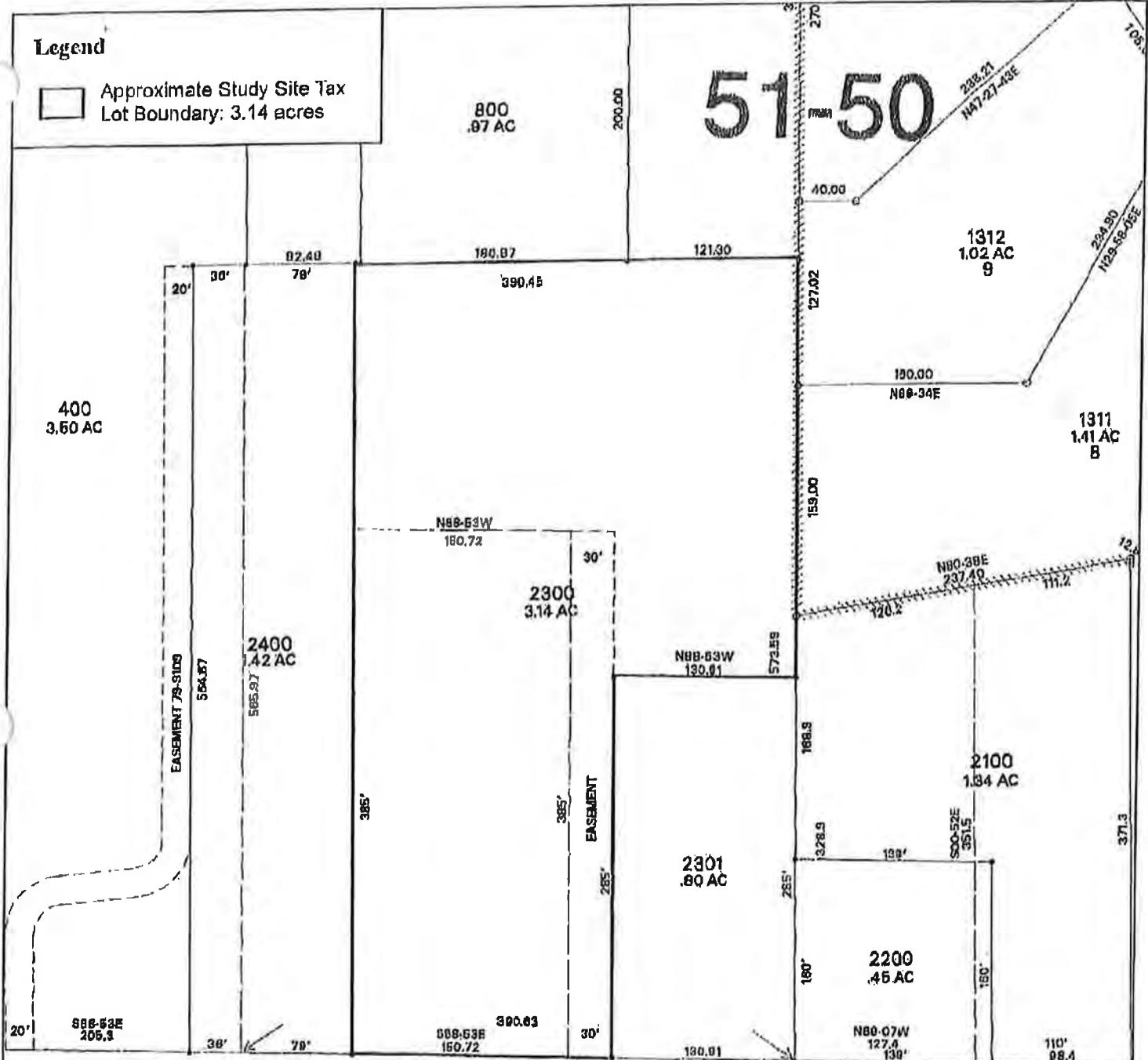
Date: 8/12/2019

1 inch = 0.6 miles

Data Source: ESRI, 2019

Figure 1. Location Map

NW Leahy Road Project Site: S&A #2708



Date: 8/16/2019

Data Source: Washington County Interimap, 2019

Figure 2. Washington County Tax Map:
1N135CB

NW Leahy Road Project Site: S&A # 2708

Service Provider Letter

This form and the attached conditions will serve as your Service Provider Letter in accordance with Clean Water Services Design and Construction Standards (R&O 19-5, as amended by R&O 19-22).

Jurisdiction:	Washington County	Review Type:	Tier 2 Analysis
Site Address / Location:	10405 & 10345 NW Leahy Rd Portland, OR 97229	SPL Issue Date:	October 05, 2021
		SPL Expiration Date:	October 05, 2023
Applicant Information:		Owner Information:	
Name	BILL WAGONER	Name	MULTIPLE OWNERS
Company	WESTWOOD HOMES LLC	Company	
Address	12700 NW CORNELL RD PORTLAND OR 97229	Address	
Phone/Fax	(503) 330-2215	Phone/Fax	
E-mail:	bill@westwoodhomesllc.com	E-mail:	

Tax lot ID	Development Activity
1N135CB00400, 2300, 2400	Estates at Leahy Park Residential Subdivision

Pre-Development Site Conditions:		Post Development Site Conditions:	
Sensitive Area Present:	<input checked="" type="checkbox"/> On-Site <input type="checkbox"/> Off-Site	Sensitive Area Present:	<input type="checkbox"/> On-Site <input checked="" type="checkbox"/> Off-Site
Vegetated Corridor Width:	25-50	Vegetated Corridor Width:	Variable
Vegetated Corridor Condition:	Good/Marginal/Degraded		
Enhancement of Remaining Vegetated Corridor Required:	<input checked="" type="checkbox"/>	Square Footage to be enhanced:	43,207

Encroachments into Pre-Development Vegetated Corridor:		
Type and location of Encroachment:	Square Footage:	
Road Improvements, Lots, Stormwater Facility (Permanent Encroachment; Mitigation Required)	24,260	

Mitigation Requirements:		
Type/Location	Sq. Ft./Ratio/Cost	
Per R&O 13-12 Mitigation Requirement for VC Encroachment Associated with Purchase of Mitigation Bank Credits Waived	18,642	
On-site VC Replacement & Public Benefit Mitigation	5,618/1:1/2	

Conditions Attached Development Figures Attached (2) Planting Plan Attached Geotech Report Required

This Service Provider Letter does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered on your property.

ALTERNATIVES ANALYSIS

1. Mitigation is provided in accordance with Section 3.08.

The proposed site plan will impact 24,260 square feet of VC. Mitigation for the impacts to the 25-foot VC (18,642 SF) associated with two isolated wetlands to be filled with be through purchase of wetland mitigation bank credits. The remaining 5,618 square feet of VC impact will be mitigated onsite, by enhancing 6,705 square feet of replacement VC to provide a 1:1.2 mitigation ratio.

2. Replacement mitigation protects Vegetated Corridor function and values.

VC functions overall are moderate to good within the intact forested riparian corridor along the stream and the small wetland VC areas. The site plan will avoid Good VC impacts and enhance of the remaining available Marginal VC, directly adjacent to the proposed subdivision and NW Leahy Road. Although the small wetlands and associated VC will be impacted, the site plan will maintain existing VC function along the stream, preserving the highest ecological function. Maintaining the forest cover in the VC, will provide stability and maintain high riparian functions to the stream along the south end of the site. VC functions impacted by road encroachment will be offset with VC mitigation enhancement areas along the stream corridor exceeding the impact acreage. VC functions lost with the elimination of isolated wetlands will be provided by the purchase of wetland mitigation bank credits.

3. Enhancement of replacement area to Good Condition.

The existing VC has mature canopy cover for the exception of the outer edges, which will be planted with native trees and the understory throughout will be enhanced with native shrubs after invasive species have been removed. A total of 43,207 square feet of existing VC will be enhanced along the stream corridor to district standards.

4. District Stormwater Connection Permit is likely to be issued based on proposed plans.

The project engineer has submitted a preliminary storm drainage report with the land use application to Washington County. Upon acceptance of the Tier 2, construction plans with the proposed storm water treatment plan will be submitted with the goal to achieve a Stormwater Connection Permit.

5. Location of development and site planning minimizes incursion into the Vegetated Corridor.

The preferred site plan minimizes VC encroachment by reducing lot depths along the south end of the development and reducing the width of the internal street by designating it as a private street. The lot development has been shifted north to avoid Good condition VC and to maintain the 50-foot wide VC without additional encroachment. The entrance road from NW Leahy Road will use the existing stream crossing, keeping the width as narrow as possible to still meet county road requirements. There is no way to further reduce VC encroachment because the proposed VC encroachment is also due to road improvements and road dedication for NW Leahy Road, as required by Washington County. The private street and the NW Leahy Road dedication cannot be reduced and still meet base Washington County and fire marshal street.

6. No practicable alternative to location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.

The preferred site plan avoids Sensitive Area impacts and minimizes associated VC impacts as much as feasible and still maintains financial feasibility. The site would not be able to meet Washington County density requirements without filling the two isolated wetlands onsite. Additionally, the preferred site plan allows both wildlife habitat SNR preservation and riparian open space along the existing stream corridor. The other alternatives would require longer access roads or longer extensions for sewer and pedestrian extensions to the north and east to meet Washington County requirements but provide fewer lots and the alternative layouts cannot, therefore, be financially feasible.

7. Proposed encroachment provides public benefits.

The site plan provides 6,705 square feet of VC replacement mitigation which provides a 1:1.2 ratio of enhancement mitigation to compensate for VC impacts. The mitigation area is directly adjacent to the proposed entrance road adjacent to the outer Marginal condition VC along the stream. The large contiguous open space area in the south end of site will provide water quality public benefit to serve the surrounding watershed and downstream Tualatin River watershed. Wetland and VC functions lost with the elimination of wetlands in the middle of the site will be replaced by the purchase of wetland mitigation bank credits. The mitigation bank credits will offset the lost wetland functions, which are minimal for this wetland, by providing off-site benefits within a wetland mitigation bank.

In order to comply with Clean Water Services water quality protection requirements the project must comply with the following conditions:

1. No structures, development, construction activities, gardens, lawns, application of chemicals, uncontained areas of hazardous materials as defined by Oregon Department of Environmental Quality, pet wastes, dumping of materials of any kind, or other activities shall be permitted within the sensitive area or Vegetated Corridor which may negatively impact water quality, except those allowed in R&O 19-5, Chapter 3, as amended by R&O 19-22.
2. Prior to any site clearing, grading or construction the Vegetated Corridor and water quality sensitive areas shall be surveyed, staked, and temporarily fenced per approved plan. During construction the Vegetated Corridor shall remain fenced and undisturbed except as allowed by R&O 19-5, Section 3.06.1, as amended by R&O 19-22 and per approved plans.
3. **Prior any activity within the sensitive area, the applicant shall gain authorization for the project from the Oregon Department of State Lands (DSL) and US Army Corps of Engineers (USACE). The applicant shall provide Clean Water Services or its designee (appropriate city) with copies of all DSL and USACE project authorization permits.**
4. An approved Oregon Department of Forestry Notification is required for one or more trees harvested for sale, trade, or barter, on any non-federal lands within the State of Oregon.
5. Prior to any ground disturbing activities, an erosion control permit is required. Appropriate Best Management Practices (BMP's) for Erosion Control, in accordance with Clean Water Services' Erosion Prevention and Sediment Control Planning and Design Manual, shall be used prior to, during, and following earth disturbing activities.
6. Prior to construction, a Stormwater Connection Permit from Clean Water Services or its designee is required pursuant to Ordinance 27, Section 4.B.
7. Activities located within the 100-year floodplain shall comply with R&O 19-5, Section 5.10, as amended by R&O 19-22.
8. Removal of native, woody vegetation shall be limited to the greatest extent practicable.
9. The water quality swale and detention pond shall be planted with Clean Water Services approved native species, and designed to blend into the natural surroundings.
10. **Should final development plans differ significantly from those submitted for review by Clean Water Services, the applicant shall provide updated drawings, and if necessary, obtain a revised Service Provider Letter.**
11. The Vegetated Corridor width for sensitive areas within the project site shall be a minimum of 50 feet wide, as measured horizontally from the delineated boundary of the sensitive area.
12. **For Vegetated Corridors up to 50 feet wide, the applicant shall enhance the entire Vegetated Corridor to meet or exceed good corridor condition as defined in R&O 19-5, Section 3.14.2, Table 3-3, as amended by R&O 19-22.**
13. **Removal of invasive non-native species by hand is required in all Vegetated Corridors rated ""good." Replanting is required in any cleared areas larger than 25 square feet using low impact methods. The applicant shall calculate all cleared areas larger than 25 square feet prior to the preparation of the required Vegetated Corridor enhancement/restoration plan.**
14. Prior to any site clearing, grading or construction, the applicant shall provide Clean Water Services with a Vegetated Corridor enhancement/restoration plan. Enhancement/restoration of the Vegetated Corridor shall be provided in accordance with R&O 19-5, Appendix A, as amended by R&O 19-22, and shall include planting specifications for all Vegetated Corridor, including any cleared areas larger than 25 square feet in Vegetated Corridor rated ""good.""
15. Prior to installation of plant materials, all invasive vegetation within the Vegetated Corridor shall be removed per methods described in Clean Water Services' Integrated Pest Management

- Plan, 2019. During removal of invasive vegetation care shall be taken to minimize impacts to existing native tree and shrub species.
16. Clean Water Services and/or City shall be notified 72 hours prior to the start and completion of enhancement/restoration activities. Enhancement/restoration activities shall comply with the guidelines provided in Planting Requirements (R&O 19-5, Appendix A, as amended by R&O 19-22).
 17. **Maintenance and monitoring requirements shall comply with R&O 19-5, Section 2.12.2, as amended by R&O 19-22. If at any time during the warranty period the landscaping falls below the 80% survival level, the owner shall reinstall all deficient planting at the next appropriate planting opportunity and the two year maintenance period shall begin again from the date of replanting.**
 18. **Performance assurances for the Vegetated Corridor shall comply with R&O 19-5, Section 2.07.2, Table 2-1 and Section 2.11, Table 2-2, as amended by R&O 19-22.**
 19. **For any developments which create multiple parcels or lots intended for separate ownership, Clean Water Services shall require that the Sensitive Area and Vegetated Corridor be contained in a separate tract and subject to a ""STORM SEWER, SURFACE WATER, DRAINAGE AND DETENTION EASEMENT OVER ITS ENTIRETY"" to be granted to the City or Clean Water Services.**
 20. **Final construction plans shall include landscape plans.** In the details section of the plans, a description of the methods for removal and control of exotic species, location, distribution, condition and size of plantings, existing plants and trees to be preserved, and installation methods for plant materials is required. Plantings shall be tagged for dormant season identification and shall remain on plant material after planting for monitoring purposes.
 21. **A Maintenance Plan shall be included on final plans** including methods, responsible party contact information, and dates (minimum two times per year, by June 1 and September 30).
 22. **Final construction plans shall clearly depict the location and dimensions of the sensitive area and the Vegetated Corridor** (indicating good, marginal, or degraded condition). Sensitive area boundaries shall be marked in the field.
 23. Protection of the Vegetated Corridors and associated sensitive areas shall be provided by the installation of permanent fencing and signage between the development and the outer limits of the Vegetated Corridors. **Fencing and signage details to be included on final construction plans.**

This Service Provider Letter is not valid unless CWS-approved site plan is attached.

Please call (503) 681-3667 with any questions.

Stacy Benjamin
Stacy Benjamin
Environmental Plan Review

Attachments (2)

CWS FILE NO. 21-002098
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By SNB Date 10/5/2021
SPL ATTACHMENT 1 OF 2

**Existing Conditions Map
Estates at Leahy Park
Washington County, Oregon**

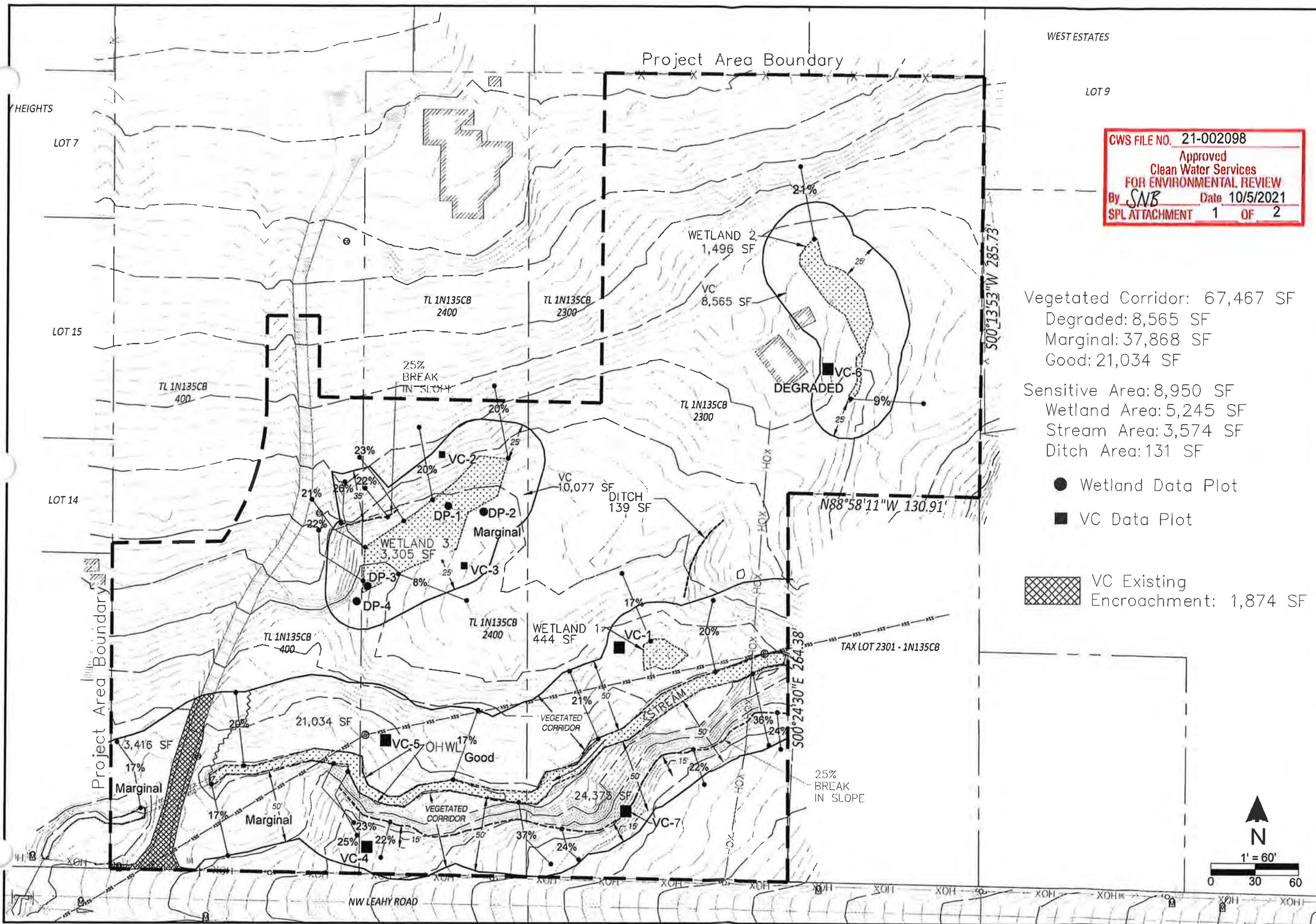


Figure 3

Environmental
Science &
Assessment, LLC

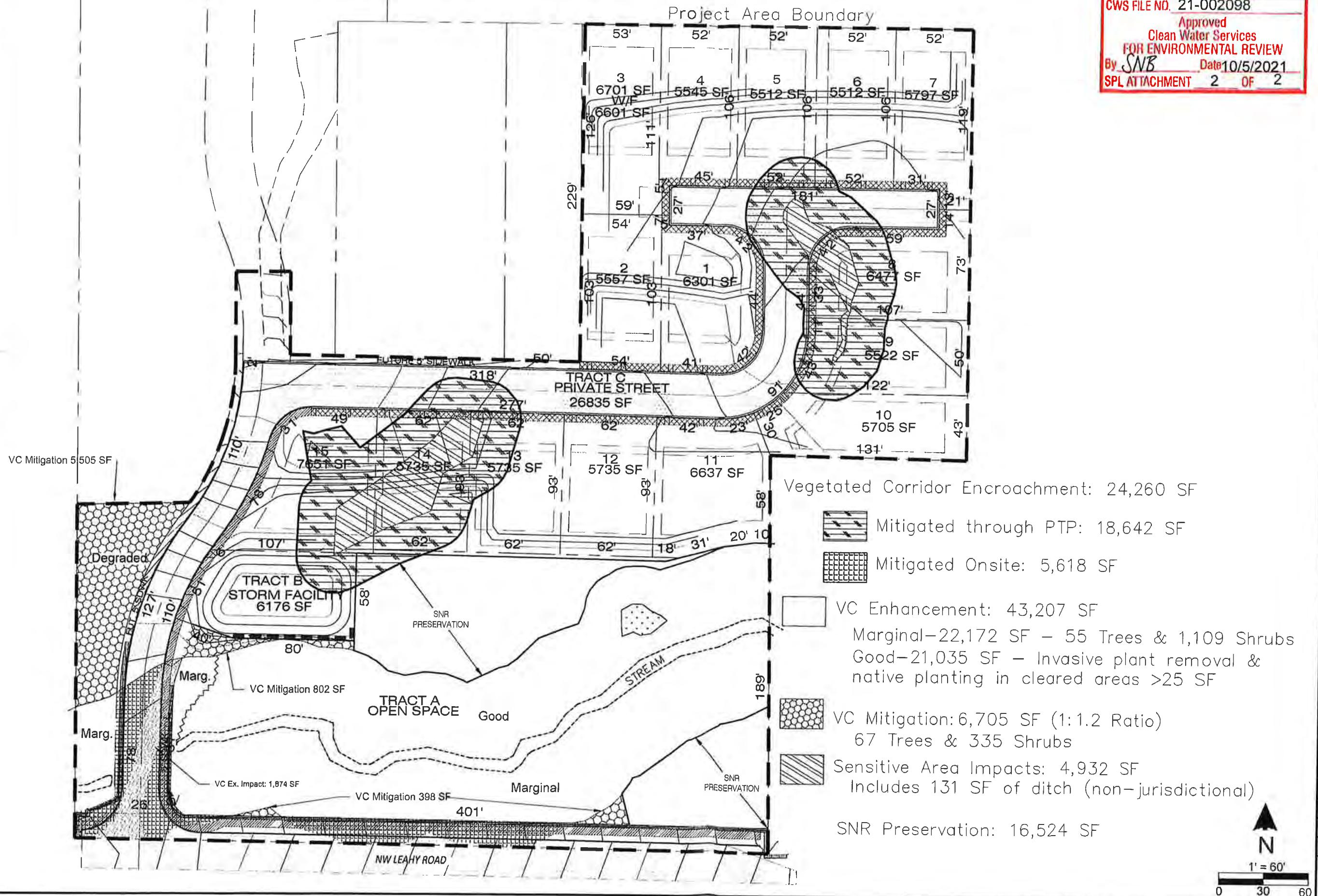


CWS FILE NO. 21-002098

Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW

4831 NE Fremont St.,
Suite 2B
Portland, OR 97213
Phone: 503.478.0424
www.esapdx.com

Site Plan Estates at Leahy Park Washington County, Oregon



Base Map Source:	Pioneer Design Group, Inc.
Modified By:	KR
Date:	3/21
Job:	20062
Rev:	00/00

Figure 4

SENSITIVE AREA CERTIFICATION FORM

Clean Water Services File Number

1. Property Information (example 1S234AB01400)

Tax lot ID(s): 1N135CB00400, 1N135CB02400, 1N135CB02300

Site Address: 10405 NW Leahy Road (TL 2400) & 10345 NW Leahy Road (TL 2300)

City, State, Zip: Portland, OR 97229

Nearest cross street: NW Alpenglow Way

3. Development Activity (check all that apply)

- Addition to single family residence (rooms, deck, garage)
- Lot line adjustment Minor land partition
- Residential condominium Commercial condominium
- Residential subdivision Commercial subdivision
- Single lot commercial Multi lot commercial

Other

5. Check any of the following that apply to this project

- Adds less than 500 square feet of impervious surface.
- Does not encroach closer to the Sensitive Area than existing development on the property.
- Is not located on a slope greater than 25%.

7. Will the project involve any off-site work? Yes No Unknown (check appropriate box)

If yes, location and description of off-site work:

Frontage improvements along NW Leahy Road

8. Additional comments or information that may be needed to understand your project:

9. An on-site, water quality sensitive area reconnaissance was completed on:

Date December 29, 2020

By Kim Reavis & Kim Sanderford

Title Wetland Scientist

Company Environmental Science & Assessment, LLC

Revised 1/20/09

SENSITIVE AREA CERTIFICATION FORM

Clean Water Services File Number **10. Existence of Water Quality Sensitive Areas** (check all appropriate boxes)

As defined in the District's Design and Construction Standards:

- A. Water Quality Sensitive Areas do do not exist on the tax lot.
- B. Water Quality Sensitive Areas do do not exist within 200' on adjacent properties, or
 unable to evaluate adjacent property.
- C. Vegetated corridors do (67,467 SF) do not exist on the tax lot.
- D. Vegetated corridors do do not exist within 200' on adjacent properties, or unable to evaluate adjacent property.
- E. Impacts to sensitive areas and/or vegetated corridors will occur On-site Off-site None proposed at this time.
- F. If impacts, mitigation is On-site Off-site Other also through PTP

11. Simplified Site Assessment containing the following information: (check only items submitted)

Please refer to Design and Construction Standards 19-5 section 3.02.2, as amended by Resolution and Order 19-22, for application requirements.

- Complete Certification Form (2 pages)
- Written description of the site and proposed activity.
- Site plan of the entire property.
- Photographs of the site labeled and keyed to the site plan.

12. Standard Site Assessment containing the following information: (check only items submitted)

Please refer to Design and Construction Standards 19-5 section 3.02.2, as amended by Resolution and Order 19-22, for application requirements.

- Complete Certification Form (2 pages)
- Written description per Design and Construction Standards 19-5 section 3.13.3 b. 1, as amended by Resolution and Order 19-22
- Wetland Data sheets
- Vegetated Corridor Data sheets
- Existing Site Condition Figures
- Proposed Development Figures

By signing this form the Owner, or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site.

I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Applicant:Print/Type Name Jack DaltonPrint/Type Title Senior Wetland ScientistSignature Date 9/16/2021

Tax Lots 1N135CB00400 and 1N135CB02400 are owned by:

**GREG AND JANELLE LORTS
10405 NW LEAHY ROAD
PORTLAND, OR 97229
PHONE: (503) 330-2215**

Tax Lot 1N135CB02300 is owned by:

**ROY M. HAYES LIVING TRUST
10345 NW LEAHY ROAD
PORTLAND, OR 97229
PHONE: (503) 330-2215**

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INTRODUCTION

Environmental Science & Assessment, LLC (ES&A) was contracted by Westwood Homes to conduct a Site Assessment and Tier II Analysis on a 4.76-acre site located at 10345 NW Leahy Road in the Washington County, Oregon (Figure 1). The study area includes the southern portions of two tax lots, 1N135CB02400 and 1N135CB00400 and the majority of tax lot 1N135CB02300 located in Section 35, Township 1 North, Range 1 West: on Washington County's assessor's map 1N135CB.

METHODOLOGY

The primary guidance document for this report is the *Design and Construction Standards for Sanitary Sewer and Surface Water Management* (Resolution and Order 19-5 as amended by R&O 19-22; Clean Water Services, 2019), which provides the methodology for assessing the presence and extent of Sensitive Areas within the development site and within 200 feet of the site, and the required Vegetated Corridors (VCs) adjacent to them.

Two levels of investigation were used to evaluate the presence or absence of Sensitive Areas. The first level included a review of existing and available background data. The second level consisted of a data collection effort conducted during an on-site evaluation.

ES&A staff conducted the site investigations on December 29, 2020. Potential wetland areas on the parcel were evaluated using the methodology provided in the Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*, (U.S. Army Corps of Engineers, 2010).

ES&A collected wetland determination data at four (4) locations to define the wetland boundaries or document a lack of wetland conditions (Figure 3). ES&A collected seven (7) Vegetated Corridor (VC) data plots to document the existing conditions on-site. The data sheets are included in Appendix C and D of this report.

The Sensitive Area boundaries and the data plot locations within tax lots 400 and 2400 were surveyed by Pioneer Design Group, a professional surveyor. The Sensitive Areas within tax lot 2300 were mapped from a concurred wetland delineation completed by Schott & Associates (WD#2019-0503) and boundaries were transposed into the base survey using known points. Originally, these Sensitive Area boundaries were recorded with a handheld Trimble Geo XT hand-held unit by Schott & Associates.

SITE DESCRIPTION

The 4.76-acre study area is bordered on the south by NW Leahy Road and on the north, east and west by low density single family residential area (Figure 1). The central parcel has a single home at the northern end with access from a driveway running through the western parcel from NW Leahy Road. The eastern parcel has a residential trailer near the center of the lot with several ancillary structures surrounding it (Figure 3). Most of the two eastern parcels are undeveloped, while most of the western parcel is a cleared lawn area with ornamental trees surrounding the driveway (Figure 2).

The undeveloped area is a mature forest with generally >50% aerial cover of Douglas Fir (*Pseudotsuga menziesii*), within upland areas and >50% aerial cover of black cottonwood (*Populus balsamifera ssp. trichocarpa*), Oregon ash (*Fraxinus latifolia*), and

Western red cedar (*Thuja plicata*) within the riparian corridor. Other mature trees in the canopy are Bigleaf Maple (*Acer macrophyllum*), Pacific Madrone (*Arbutus menziesii*), and red alder (*Alnus rubra*). The understory has a low diversity of native shrubs, with the areas closest to the driveway and main road with a higher percentage of non-native invasives (Photo 1, Appendix B.)

Site topography slopes down from north to south at approximately 10% towards the creek, with a small area south of the creek sloping back up towards NW Leahy Road.

Soil survey mapping shows 2 soil types onsite. There is a band of hydric Delena silt loam, 3 to 12 percent slopes, running through the southern end of all three parcels corresponding to the onsite stream (map unit 16C, rating 90). The rest of the site is mapped as Cornelius and Kinton silt loams, with 12 to 20 percent slopes mapped adjacent to the north and south of the hydric soil band, and the remainder of the site with 2 to 7 percent or 7 to 12 percent slopes (map units 11D, 11C, and 11B, rating 4). (NRCS, Web Soil Survey, 2019).

Sensitive Areas

Three wetlands, a stream and a ditch were delineated onsite, totaling 8,950 square feet. Wetland 1, Wetland 2, the ditch and the eastern portion of the stream (within TL 2300) were delineated by Schott & Associates and the boundaries concurred in October of 2019 (DSL Concurrence Letter, Appendix E). All Sensitive Areas, for the exception of the ditch, are jurisdictional to the State and are subject to permit requirements of the state Removal-Fill Law.

Wetland 1

The wetland is a 444 square foot shallow depression located north of the stream within tax lot 2300. The wetland collects water from overland flow and may also be sustained by discharge from a pipe and the small ditch upslope to the northeast. The pipe likely discharges grey water from the upslope trailer home. The vegetation community mostly consists of horsetail (*Equisetum arvense*), creeping buttercup (*Ranunculus repens*), lady fern (*Athyrium filix-femina*) and hedgentle (*Stachys chamissonis*). The hydric soil indicator, Redox Dark Surface (F6), was met with 15 percent distinct redox features throughout the soil profile.

Wetland 2

Wetland 2 is located in the northeastern portion of tax lot 2300 east of the existing outbuildings and is 1,496 square feet in size (Photo 2). The wetland is wider at the north end and tapers downslope to the south end. The vegetation community is dominated by horsetail, creeping buttercup, lady fern and hedgenettle. The hydric soil indicator Redox Dark Surface (F6) was met with 8 percent distinct redox features throughout the soil profile.

Wetland 3

Wetland 3 is located north of the stream within tax lot 2400 and slopes down from north to south, oblong in shape with a relative consistent width and is 3,305 square feet in size. The wetland is a shallow depression that collects precipitation and overland flow. The dominant vegetation is slough sedge (*Carex obnupta*) with additional occurrences of giant horsetail (*Equisetum telmateia*), bentgrass (*Agrostis* sp.), Himalayan blackberry (*Rubus armeniacus*) along the outer edges and a few growing Oregon ash trees (*Fraxinus latifolia*) (Photo 3).

Hydrology was present within the upper 12 inches (Hydrology Indicator A1 & A2) along with observed Oxidized Rhizospheres along Living Roots (C3). The hydric soil indicator Redox Dark Surface (F6) was met with 2 percent redox features within a 10YR 3/1 soil matrix color throughout the soil profile and indicator Depleted Matrix (F3) with distinct redox features starting at 5 inches in depth. Data plots DP-1 through DP-4 characterize the conditions along the wetland boundary.

Perennial Stream 1

An unnamed perennial tributary to Johnson Creek flows from east to west through the southern end of all three parcels. The stream is approximately 6-12 feet wide at the top of bank with steep sheer sides 2-4 feet deep with some undercutting (Photo 4 & 5). Surface water flow within the channel was approximately 1-foot in depth during the site visit. Oregon Department of Fish and Wildlife (ODFW) maps this stream as Coastal Cutthroat Trout habitat. Though ODFW does not map any priority barriers to fish passage, there is a downstream 29" by 50" box culvert that conveys the stream under NW Leahy Road just southwest of the southwest site corner mapped by CWS.

Ditch 1

The ditch is a narrow and shallow 1-foot wide excavated feature that routes water downslope, discharged from a small pipe. The pipe appears to be associated with the trailer upslope of the ditch. The channel is approximately 70 feet long and shallows out at the south end within the upland forest, channelized water does not reach Wetland 1 or the stream. The channel also collects overland flow during the wet season, most likely with an ephemeral flow pattern. The vegetation surrounding the ditch is sparse and includes upland species consisting of Douglas fir, Himalayan blackberry, English ivy (*Hedera helix*), trailing blackberry (*Rubus ursinus*) and Western swordfern (*Polystichum munitum*) (Photo 6).

VEGETATED CORRIDORS

The total area of Vegetated Corridor is 67,467 square feet on site. The vegetated corridor plot data indicates the VC is comprised of plant communities in Degraded (8,565 SF), Marginal (37,868 SF) and Good condition (21,034 SF) (Figure 3).

- The wetlands all have VC widths of 25 feet due to their size and being isolated resources, for the exception of a small section along Wetland 3 where the VC extends out 35 feet beyond the 25% break in slope line
- The stream has a 50-foot VC on the north side and the south side has generally the same width or a bit wider. The slope measurements beyond the top of bank exceed 25 percent within the first 50 feet of the VC. The VC width was determined with a 15-foot offset beyond the 25 percent break in slope line, however the 50-foot offset is greater than the 15-foot offset along most this section of VC. A 25 percent break in slope line was determined based on CWS methodology (R&O 19-5) using a professional topographic survey provided by Pioneer Design Group (Figure 3).
- Ditch 1 is not jurisdictional therefore no VC area is associated with this resource

The VC is a riparian forested community with a mix of native trees including Western red cedar, Douglas fir, big leaf maple and Oregon ash. The native understory shrub community is limited to a few species consisting of vine maple (*Acer circinatum*), snowberry (*Symphoricarpos albus*), and beaked hazelnut (*Corylus cornuta*). The herbaceous layer has a dominant cover of Western swordfern and trailing blackberry.

The Good condition VC has 60-90 percent aerial cover with a native plant community consisting of greater than 80 percent. The Good corridor is limited to the northern side of the stream (VC Data Plots VC-1 & VC-5, Appendix D) (Photo 7).

Marginal and Degraded condition VC has a lower percentage of aerial canopy cover. The understory vegetation consists of a higher concentration of non-native species that includes English ivy (*Hedera helix*), Himalayan blackberry, English holly (*Ilex aquifolium*) and English laurel (*Prunus laurocerasus*) (VC-2, VC-3, VC-4, VC-7). The degraded VC area surrounding Wetland 2 has less than 25 percent aerial cover and weedy forbes make up 35 percent of the herbaceous cover without native shrub cover (VC- 6) (Photo 2, 8 & 9).

PROPOSED DEVELOPMENT

The proposed development is a 15-lot residential subdivision with access from a private street that will extend north from NW Leahy Road lining up with the existing driveway and culvert crossing. The street will then turn east, then north to access the 15 lots. A 6,176-SF storm facility is proposed east of and adjacent to the existing driveway and north of the CWS VC associated with the stream corridor. A 62,894-SF open space tract (Tract A) will be located south of planned lots 11-15 just east of the storm facility and north of NW Leahy Road. Overall Tract A is a 170-foot wide rectangular corridor that includes the stream, Wetland 1, CWS VC, and preserved upland SNR making up the bottom one-third of this development (Figure 4).

To meet the Washington County resource protection standards to retain Significant Natural Resources onsite a total of 16,524 square feet of forested area will remain undeveloped outside of the VC.

VC Existing Impacts

The area associated with existing driveway and road prism that bisects the VC area consists of 1,874 square feet of existing VC impact (Figure 4).

VC Permanent Impacts

A total of 24,260 square of permanent VC impacts is proposed. All VC impacts are in Marginal or Degraded condition corridor

- The Sensitive Areas, Wetland 2 and 3 will also be permanently filled, therefore VC associated with the wetlands will also be impacted. This VC area totals 18,642 square feet and is due to lot development, internal street access and the storm facility.
- An additional 5,618 square feet is due to NW Leahy Road dedication that will include road improvements, sidewalk development and a retaining wall along the north side. The road entrance to the development also contributes to the overall VC impacts due to the need to cross the Sensitive Area and bisecting the VC.

ALTERNATIVE SITE ANALYSIS

Site Plan Elements/Constraints

The Estates at Leahy Park subdivision site plan has been designed to comply with Washington County planning requirements. The site is limited generally by a stream corridor that extends through the southern end of the site and a single existing access from Leahy Road in the southwest corner (Figure 3).

Site development requirements also include the following:

- Provide a north-south road access from SW Leahy including a road stub for future connection to area northwest of project area and a hammerhead turn around to access the northeast lots.
- Open space tract along the stream corridor and additional SNR preservation area to meet Washington County Section 422 SNR requirements.
- Site development calculation of 18 lot minimum density and 22 lot maximum density cannot be achieved on site, so applicant has chosen to exclude SNR and frontage ROW improvements to allow a minimum of 15 lots per Washington County regulations
- Stormwater facility to be located in the southwest end of the development to meet site topographic conditions. Sanitary sewer and pedestrian trail easements must extend to north end of site to meet Washington County planning requirements for future development north of site.

Alternatives Analysis Criteria

Criteria used for the Riverside at Woodland Hill development Alternative Analysis include:

1. Provide lot development within the minimum density of 18 lots and maximum of 22 lots or minimum of 15 lots with exclusion of SNR and road ROW in lot density calculation.
2. Provide road access that meets fire marshal requirements for grade and corner radius while maintaining a financially feasible project.
3. Provide public gravity sewer access easement within site to north property line for future development connections.
4. Avoid sensitive area impacts and minimize associated CWS VC impacts as much as feasible to maximize wildlife habitat SNR preservation and open space along the existing stream corridor.

Alternatives

Three (3) alternatives were considered in the alternatives analysis. Alternative site plans are provided in Attachment F.

Alternative 1

Alternative 1 evaluated avoiding the small Wetland 3 mapped in the northwest end of the proposed development. This alternative would result in loss of 3 lots to avoid direct impacts to the wetland and would require shifting the access road north. This alternative assumes Wetland 2 in northeast corner of site would be removed for development. The proposed access road is private and as narrow as Washington County allows but shifting the road north would still require additional land purchase from the adjacent parcel to meet Fire Marshal requirements. The loss of the lots and the increased land cost for the access road impacts the financial feasibility of the project, which is already below the minimum lot density. Some CWS VC impacts would result from the road access, requiring additional mitigation area somewhere else on site, reducing potential SNR preservation area, likely requiring additional land cost. The location of the road north of the wetland avoids direct impacts to wetland but would inevitably cut off hydrologic sources to the wetland downslope and result in indirect impacts to the wetland (Alternative 1 – Attachment F).

Criteria Analysis:

1. This alternative does not provide minimum density of 15 lots with exclusion of SNR and road ROW in lot density calculation: **Criteria Not Met**
2. The access road revisions would not be able to meet fire marshal requirements for grade and corner radius while maintaining a financially feasible project: **Criteria Not Met**
3. Provides the public gravity sewer access easement within site to north property line for future development connections: **Criteria Met**
4. Avoid sensitive area impacts and minimize associated CWS VC impacts as much as feasible but indirectly impacts the Wetland 3 anyway, which impacts the area of wildlife habitat SNR preservation and open space along the existing stream corridor: **Criteria Not Met**

Alternative 2

Alternative 2 evaluated avoiding the small Wetland 2 mapped in the northeast corner of the proposed development. This alternative would result in loss of 5 lots to avoid direct impacts to the wetland by relocating the street hammerhead turn around and several lots. This alternative assumes Wetland 2 in northeast corner of site would be removed for development. This alternative could shift the hammerhead terminus north to avoid the wetland or could pull the hammerhead further south of wetland. While the lot layout could be redesigned to regain some of the lots, moving the hammerhead results in greater improvement costs. If it is shifted north, it results in greater street expense; shifting south reduces access to potential lots at north end results in longer sewer and pedestrian trail easements to the north and east property lines. Both scenarios, reduce the number of viable lots and impacts the financial feasibility of the project. Some CWS VC impacts would result from the road access, requiring additional mitigation area somewhere else on site, reducing potential SNR preservation area, and likely requiring additional land cost. The location of the road north and west of the wetland avoids direct impacts to wetland but would inevitably cut off hydrologic sources to the wetland downslope and result in indirect impacts to the wetland (Alternative 2 – Attachment F).

Criteria Analysis:

1. This alternative does not provide minimum density of 15 lots with exclusion of SNR and road ROW in lot density calculation: **Criteria Not Met**
2. The access road revisions would be able to meet fire marshal requirements for grade and corner radius, but lengthening the road alignment while reducing lot yield impacts the financial feasibility of project: **Criteria Not Met**
3. Site layout impacts ability to provide the public gravity sewer access easement within site to north property line for future development connections: **Criteria Not Met**
4. Avoid sensitive area impacts and minimize associated CWS VC impacts as much as feasible but indirectly impacts the Wetland 3 anyway, which impacts the area of wildlife habitat SNR preservation and open space along the existing stream corridor: **Criteria Not Met**

Alternative 3

This alternative provides 15 residential subdivision units and access meeting all fire marshal requirements and a road stub for future access to area northwest of project. The proposed access road is private and as narrow as Washington County allows, which allows enough space for the storm facility and SNR preservation area north of the open space tract along the stream. While this site plan impacts the smaller wetlands and associated CWS VC on site, wetland and CWS VC impacts are mitigated through bank credits and CWS PTP or on-site with additional VC west of the entry roadway. The highest quality sensitive area along the stream corridor and an additional preserved SNR area allow for a large intact natural area while also allowing the development of enough lots to be financially feasible (Alternative 3 – Attachment F).

Criteria Analysis:

1. This alternative provides the minimum density of 15 lots with exclusion of SNR and road ROW in lot density calculation: **Criteria Met**
2. The access road revisions meets the fire marshal requirements for grade and corner radius while maintaining a financially feasible project: **Criteria Met**
3. Provides the public gravity sewer access easement within site to north property line for future development connections: **Criteria Met**
4. Avoid sensitive area impacts and minimize associated CWS VC impacts as much as feasible and allows required area of wildlife habitat SNR preservation and open space along the existing stream corridor: **Criteria Met**

Preferred Alternative

Alternative 3 is the preferred alternative since it meets all the criteria. All other alternatives considered do not meet at least two of the design criteria and this alternative maximizes the open space in the south end by reducing the CWS VC encroachment as much as possible and providing mitigation as per CWS standards. The other alternatives would require longer access roads or longer extensions for sewer and pedestrian extensions to the north and east to meet Washington County requirements but provide fewer lots and the alternative layouts cannot, therefore, be financially feasible.

Section 3.07.4.C Criteria

1. Mitigation is provided in accordance with Section 3.08. The proposed site plan will impact CWS VC from lot development and road improvements. The VC impacts totaling 24,260 square feet. Through payment to provide (PTP) the VC will be mitigated for the impacts to the 25-foot VC (18,642 SF) associated with the Wetlands 2 and 3 impacts (4,932 SF). The remaining 5,618 square feet of VC impact will be mitigated onsite, the largest area being enhancement of degraded habitat west of site. Enhancing 6,705 square feet of on-site VC provides a 1:1.2 ratio of enhancement mitigation to impact for Tier 2 impacts.
2. Replacement mitigation protects Vegetated Corridor function and values. VC functions overall are moderate to good within the intact forested riparian corridor along the stream and the small wetland VC areas. The site plan will avoid Good VC impacts and enhance of the remaining available Marginal VC, directly adjacent to the proposed subdivision and NW Leahy Road. Although the small wetlands and associated VC will be impacted, the site plan will maintain existing VC function along the stream, preserving the highest ecological function.

Maintaining the forest cover in the VC, will provide stability and maintain high riparian functions to the stream along the south end of site. VC functions impacted by road encroachment will be offset with VC mitigation enhancement areas along the stream corridor exceeding the impact acreage. VC functions lost with the elimination of Wetlands 2 and 3 will be provided by the purchase of wetland mitigation bank credits and CWS PTP. Elimination of the Wetlands 2 & 3 and associated VC will not greatly impact the existing function of the local watershed, since the wetlands are isolated and do not have a surface water connection to the stream.

3. Enhancement of replacement area to Good Condition. The existing VC has mature canopy cover for the exception of the outer edges, which will be planted with native trees and the understory throughout will be enhanced with native shrubs after invasives have been removed. A total of 43,207 square feet of existing VC (Good and Marginal Condition) will be enhanced along the stream corridor to district standards.
4. District Stormwater Connection Permit is likely to be issued based on proposed plans. The project engineer has submitted a preliminary storm drainage report with the land use application to Washington County. Upon acceptance of the Tier 2, construction plans with the proposed storm water treatment plan will be submitted with the goal to achieve a Stormwater Connection Permit.
5. Location of development and site planning minimizes incursion into the Vegetated Corridor. The preferred site plan minimizes VC encroachment by reducing lot depths along the south end of the development and reducing the width of the internal street by designating it as a private street. The lot development has been shifted north to avoid Good condition VC and to maintain the 50-foot wide VC without additional encroachment. The entrance road from NW Leahy Road will use the existing stream crossing, keeping the width as narrow as possible to still meet county road requirements. There is no way to further reduce VC encroachment because the proposed VC encroachment is also due to road improvements and road dedication for NW Leahy Road, as required by Washington County. The private street and the NW Leahy Road dedication cannot be reduced and still meet base Washington County and fire marshal street.
6. No practicable alternative to location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor. The preferred site plan avoids Sensitive Area impacts and minimize associated CWS VC impacts as much as feasible and still maintains financial feasibility. The site would not be able to meet Washington County density requirements without filling the two isolated wetlands onsite. Additionally, the preferred site plan allows both wildlife habitat SNR preservation and riparian open space along the existing stream corridor. The other alternatives would require longer access roads or longer extensions for sewer and pedestrian extensions to the north and east to meet Washington County requirements but provide fewer lots and the alternative layouts cannot, therefore, be financially feasible.
7. Proposed encroachment provides public benefits. The site plan provides 6,705 square feet of mitigation which provides a 1:1.2 ratio enhancement mitigation to impact area requirement. The mitigation area is directly adjacent to the proposed entrance road adjacent to the outer Marginal condition VC along the stream. The large contiguous open space area in the south end of site will provide water

quality public benefit to serve the surrounding watershed and downstream Tualatin River watershed. Wetland and VC functions lost with the elimination of Wetlands 2 and 3 in the middle of the site will be replaced by the purchase of wetland mitigation bank credits and CWS PTP. The mitigation bank credits will offset the lost wetland functions, which are minimal for this wetland, by providing off-site benefits within a wetland mitigation bank.

Functional Assessment

The methodology outlined in the Guidebook for *Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites I. Willamette Valley Ecoregion Riverine Impounding and Slope/Flats Subclasses Volume IA: Assessment Methods* (Adamus, 2001) was used as the basis for the functional assessments.

Wetland 2 scored moderate for water quality support and ecosystem support and high for hydrologic function and aquatic habitat. The value of the hydrologic function was decreased because upslope of this wetland is developed neighborhoods, likely limiting the native flow that once reached this wetland. Similarly, the value of water quality support was increased to high because runoff that does reach this wetland has likely a higher concentration of phosphorous and nitrates from surrounding human use including lawn fertilization and road runoff.

While aquatic habitat for waterbird nesting and feeding is low, this wetland scored high because of its suitability for amphibian and turtle habitat due to a high relative percent of wooded cover compared to grassland-crop cover, minimal disturbances to the soils, several types of dead wood and snags in the vicinity, and an appropriate change between the predominating biennial high and low water levels (about 6-inches).

Ecosystem support was moderate because while there is no permanent or open water, the mapped soil series is hydric with no part of the wetland created on former uplands, the predominant soil texture is silty clay loam, and the distance to the nearest busy road is moderate, about 280-feet.

Wetland 3 scored high for all groups, but values for hydrologic function and ecosystem support were decreased to moderate because of the lack of hydrologic connection upslope, proximity to a major road (about 180-feet) and a regularly used driveway (about 60-feet), and a lack of diversity along the northwestern wetland edge comprised of exclusively Himalayan blackberry with no tree or herbaceous strata.

Overall, these two wetlands score very similarly because they are similar size, have similar plant communities and soil profiles, are hydrologically similar connecting downslope to the same stream, and are both within the same contiguous forested area about 230-feet apart. However, notable differences that make wetland 3 score overall higher than wetland 2 include: varying topography within wetland 3 compared to a mostly flat profile within wetland 2; more regular site visititation to wetland 2 evidenced by the trailer/various outbuildings within the woods surrounding this wetland; a more complete canopy cover of wetland 3; and varying distributions of strata within the wetlands, i.e. greater herbaceous cover and less shrub and tree cover in wetland 2 and less herbaceous but more shrub and tree cover within wetland 3.

The detailed functional assessment is provided in Appendix G.

VEGETATED CORRIDOR ENHANCEMENT

A total 43,207 square feet of VC enhancement is proposed. The enhancement will occur on both sides of the stream corridor in both Good and Marginal condition areas and includes planting installation and invasive species removal.

- Good Condition – 21,035 SF: The north side of the stream is in Good condition, except where the corridor hugs the existing driveway. Enhancement in this area includes invasive plant removal and all areas of bare ground within the enhancement planting area that exceeds 25 square feet upon removal of the invasive species, shall be planted to CWS density standards (shrubs 5 foot on center spacing and trees 10-foot on-center spacing).
- Marginal Condition – 22,172 SF: The Marginal condition corridor generally has good aerial canopy cover; however, the understory is lacking in native shrubs. Enhancement is proposed to reduce the number of trees to 25 percent of the CWS base planting density and 100 percent for shrubs.

Total number of native plantings: 55 Trees and 1,109 Shrubs

VEGETATED CORRIDOR MITIGATION

VC Mitigation for the 5,618 square feet of permanent impact is proposed to be located within Marginal to Degraded condition areas. A large 5,505 square foot area on the west side of the road provides the bulk of the mitigation area. This area has limited aerial cover partially from non-native tree species and the understory is maintained currently as lawn (Photo 10). Additional smaller areas along the outer edges of the existing VC bring the total mitigation up to a 1:1.2 ratio (Figure 4).

The mitigation area totals 6,705 square feet which is a mitigation ratio of 1:1.2.

- All mitigation areas planting density should be 100 percent of the CWS planting density for the shrubs and trees. The mitigation enhancement will include removal of invasive species and installation of native species

Total number of native plantings: 67 Trees and 335 Shrubs

The remainder of the VC impacts associated with Wetlands 2 and 3 will be mitigated through Payment to Provide (PTP), 18,642 square feet (Figure 4).

Table 1 provides a list of suggested native tree and shrub plantings for the enhancement. Final locations of enhancement plantings will be determined in the field based on site conditions following the removal of the invasive non-native species. All areas of bare ground within the enhancement planting area that exceed 25 square feet upon removal of the invasive species shall be planted to CWS density standards (shrubs 5 foot on center spacing and trees 10-foot on-center spacing).

Table 2 provides a seed mix for the enhancement area for use as erosion and sediment control. Additionally, it is recommended that the plantings in Table 1 each be mulched with 0.5 cubic feet of approved mulch material following planting installation. This will retard weed growth around the plantings and promote soil moisture retention for the plantings during the growing season.

A condition of the Service Provider Letter will be to coordinate with CWS on the final quantity, placement and type of the enhancement plantings.

Table 1. Plant List for VC Enhancement and Mitigation Areas

Common Name	Scientific Name	Plant Form/Size ¹	Plant Spacing (ft on center)	Total Number of plants
VC Enhancement & Mitigation Areas (43,207 SF & 6,705 SF)				
Trees				
Western red cedar	<i>Thuja plicata</i>	2 gal/36"	10 ft O.C.	--- ²
Big leaf maple	<i>Acer macrophyllum</i>	2 gal/36"	10 ft O.C.	--- ²
Vine maple	<i>Acer circinatum</i>	2 gal/24"	10 ft O.C.	--- ²
Douglas fir	<i>Pseudotsuga menziesii</i>	2 gal/36"	10 ft O.C.	--- ²
<i>Subtotal</i>				132
Shrubs				
Serviceberry	<i>Amelanchier alnifolia</i>	1 gal/2'	single	--- ²
Oceanspray	<i>Holodiscus discolor</i>	1 gal/18"	single	--- ²
Pacific ninebark	<i>Physocarpus capitatus</i>	1 gal/24"	single	--- ²
Twinberry	<i>Lonicera involucrata</i>	1 gal/18"	4-5 ft O.C.	--- ²
Tall Oregon-grape	<i>Mahonia aquifolium</i>	1 gal/18"	4-5 ft O.C.	--- ²
Osoberry	<i>Oemleria cerasiformis</i>	1 gal/18"	4-5 ft O.C.	--- ²
Thimbleberry	<i>Rubus parviflorus</i>	1 gal/18"	4-5 ft O.C.	--- ²
Salmonberry	<i>Rubus spectabilis</i>	1 gal/1.5'	cluster	--- ²
Snowberry	<i>Symporicarpos albus</i>	1 gal/18"	4-5 ft O.C.	--- ²
<i>Subtotal</i>				1,444
TOTAL				1,576

NOTES: ¹ Substitutes for plant form (e.g. bare root) and species may be used based on availability.

² Individual species quantities to be determined in landscape.

Table 2. Planting Areas Seed Mix

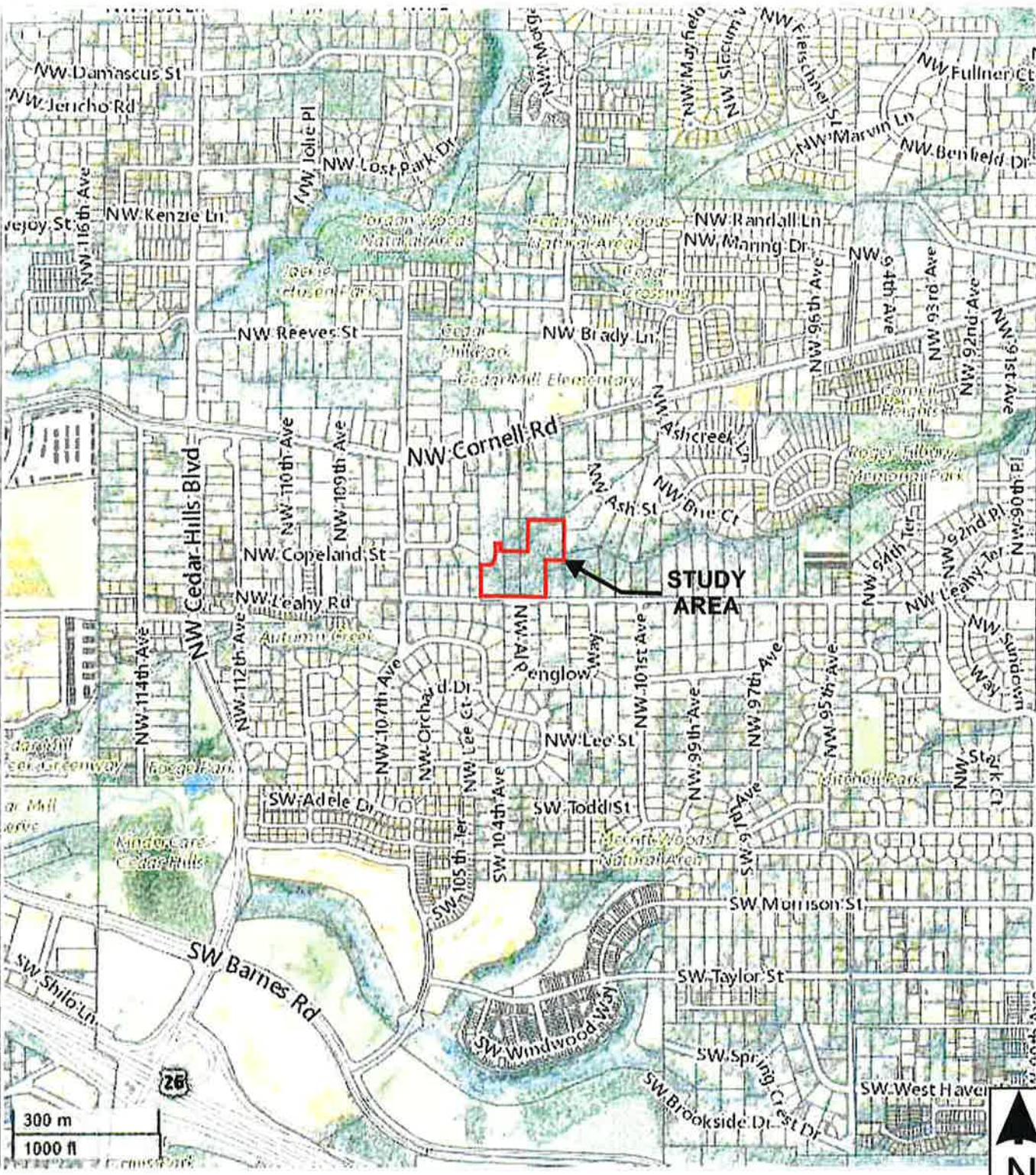
Common Name	Scientific Name	Percentage of Seed Mix ^{**}
Native Wildflower/Grass Mix		
Native California brome	<i>Bromus carinatus</i>	15
Blue wildrye	<i>Elymus glaucus</i>	30
Meadow barley	<i>Hordeum brachyantherum</i>	15
Spike bentgrass	<i>Agrostis exarata</i>	20
California Oat Grass	<i>Danthonia californica</i>	20
TOTAL		100

*Seeding rate of pure live seed (PLS), 35 pounds per acre for hydroseed application. **Seed mix application quantity is to be calculated for VC planting area and is subject to availability and measure PLS.

REFERENCES

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



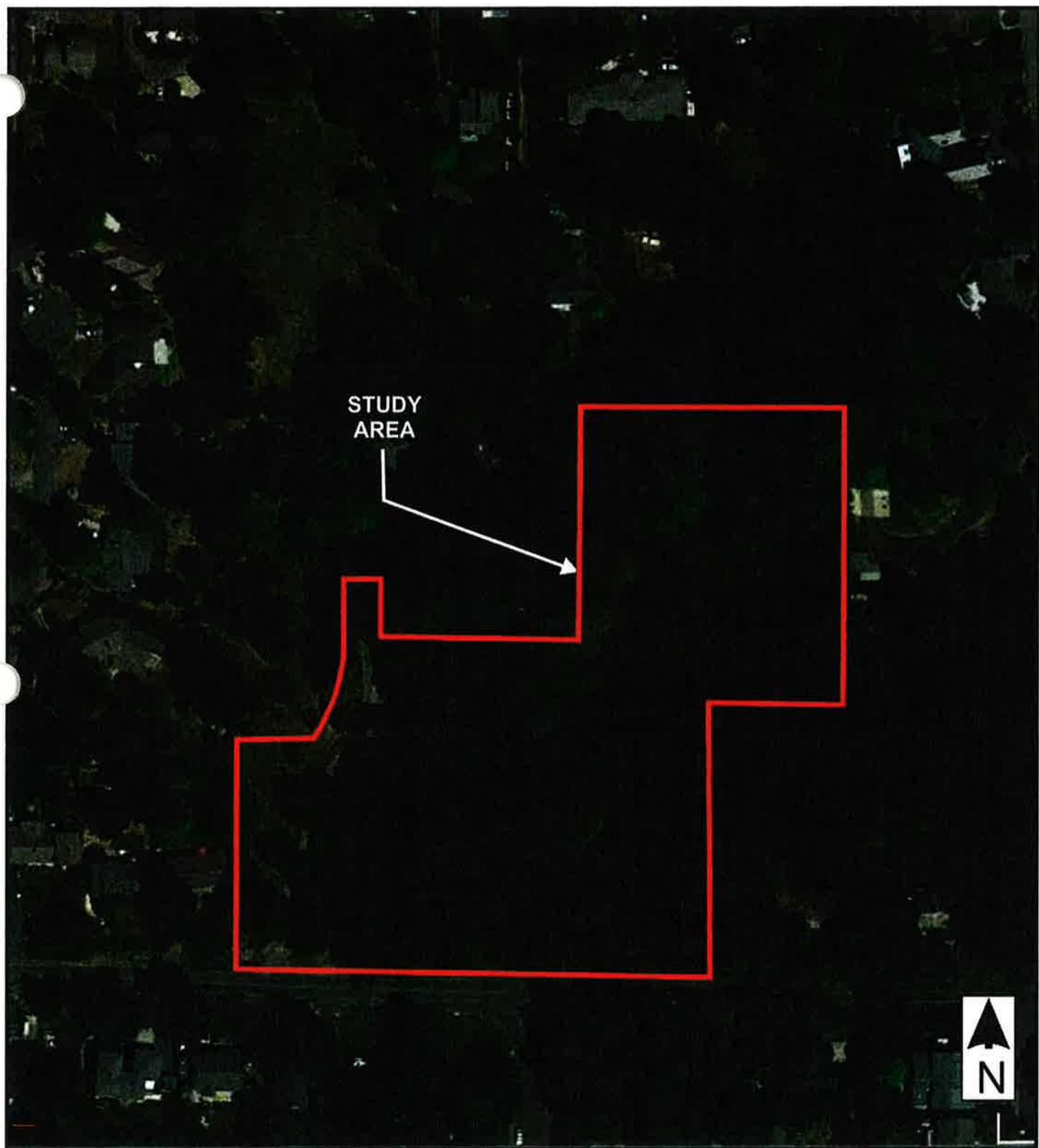
Source: Metro Data Resource Center. <http://gis.oregonmetro.gov/metromap/>



Vicinity Map
Estates at Leahy Park
Washington County, Oregon

Figure 1

Approx. Scale:
1in. = 1000 ft.



Source: Google Earth Pro

Imagery date: 08/13/2020

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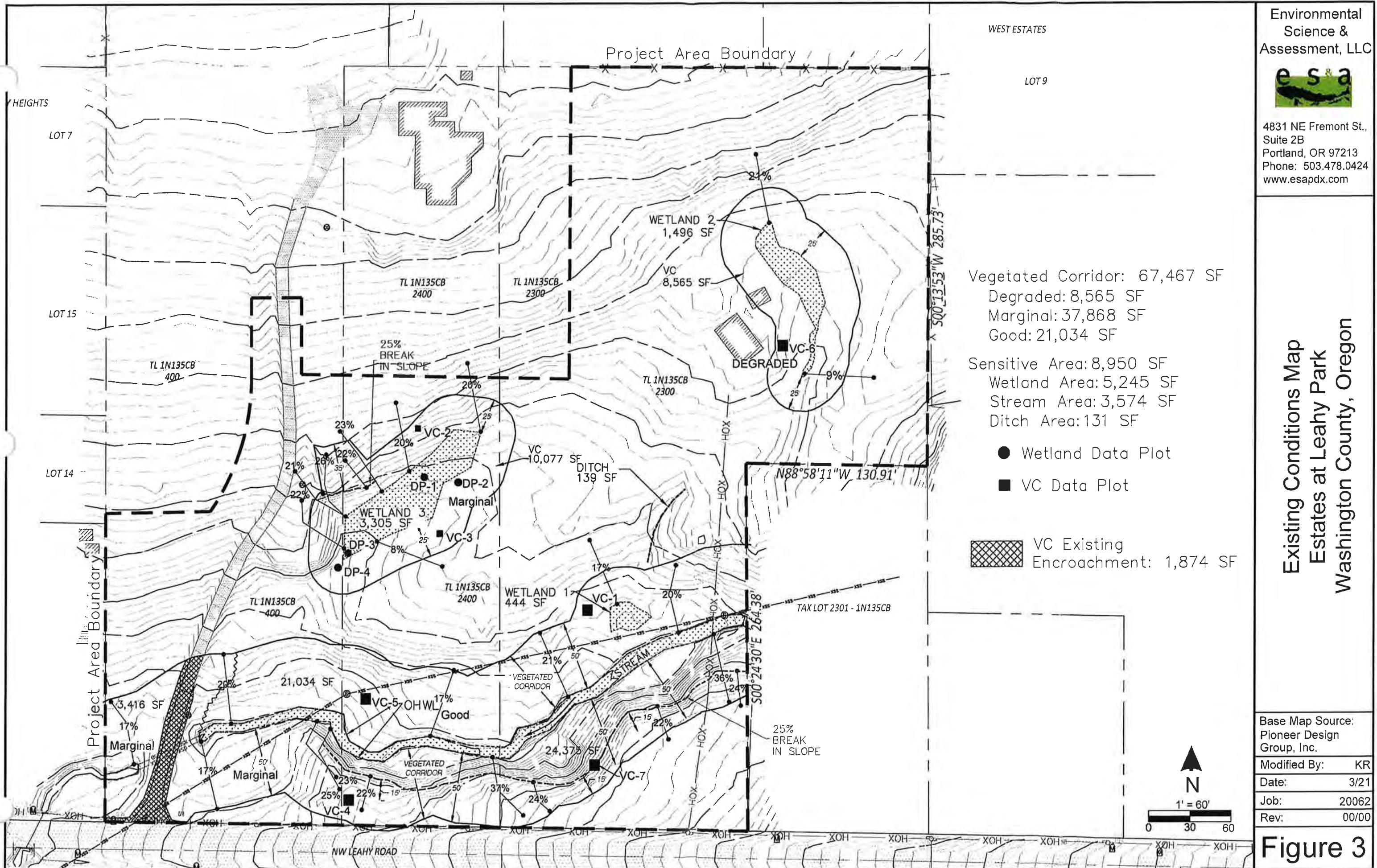


Aerial Map
Estates at Leahy Park
Washington County, Oregon

Figure 2

Approx. Scale:
1in. = 130 ft.

**Existing Conditions Map
Estates at Leahy Park
Washington County, Oregon**

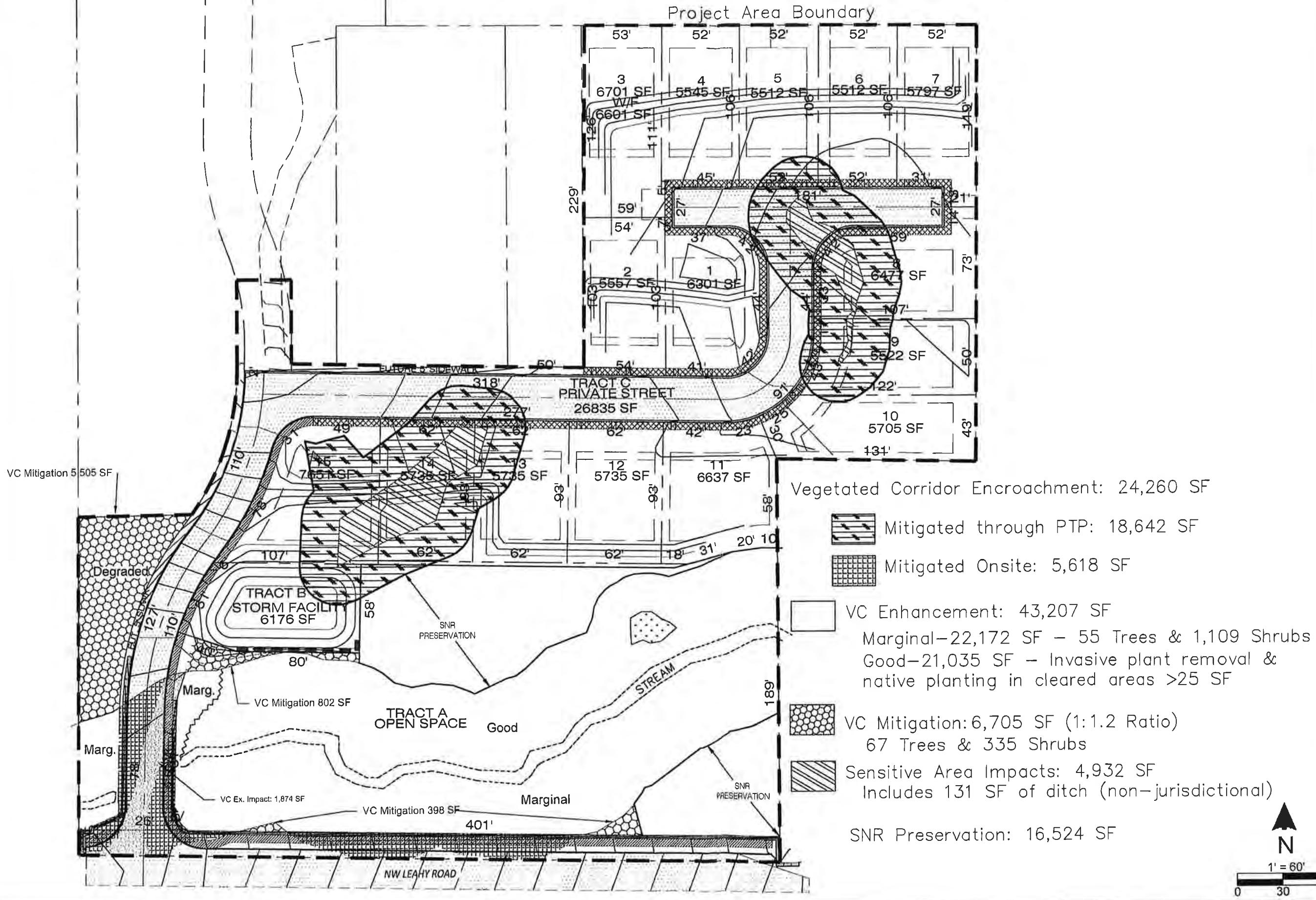


Environmental
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www.esapdx.com

Site Plan Estates at Leahy Park Washington County, Oregon



Base Map Source:	Pioneer Design Group, Inc.
Modified By:	KR
Date:	3/21
Job:	20062
Rev:	00/00

Figure 4

APPENDIX B: SITE PHOTOGRAPHS



Photo 1: Typical upland forest onsite.



Photo 2: View is looking south, the shovel is located within Wetland 2. In the background the VC extends beyond the wetland, that is in Degraded condition.



Photo 3: Looking towards the south end of Wetland 3.



Photo 4: The perennial stream



Photo 5: The perennial stream



Photo 6: Looking north at Ditch 1.



Photo 7: Good condition VC.



Photo 8: Marginal condition VC.



Photo 9: Looking north from the entrance of the driveway with Marginal condition VC near the culvert crossing.



Photo 10: The proposed VC mitigation area west of the driveway currently in Degraded condition.

APPENDIX C: WETLAND DELINEATION DATA FORMS

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

Project/Site: The Estates At Leahy Park / 10345 NW Leahy Road City/County: Unincorporated Washington Sampling Date: 12/29/2020
 Applicant/Owner: Westwood Homes LLC State: OR Sampling Point: DP-1
 Investigator(s): K. Reavis, K. Sanderford Section, Township, Range: T1N R1W S35
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.524005 Long: 122.783667 Datum: NAD 1983
 Soil Map Unit Name: Delena silt loam, 3 to 12 percent slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes <u>X</u> No _____	Yes <u>X</u> No _____
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks:		

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30' diameter</u>) 1. <u>Fraxinus latifolia</u> 80 Y FACW 2. _____ 3. _____ 4. _____ <u>Sapling/Shrub Stratum</u> (Plot size: <u>30' diameter</u>) 1. <u>Rubus armeniacus</u> 30 Y FAC 2. <u>Ilex aquifolium</u> 5 FACU 3. _____ 4. _____ 5. _____ <u>Herb Stratum</u> (Plot size: <u>5' diameter</u>) 1. <u>Carex obnupta</u> 80 Y FACW 2. <u>Equisetum telmateia</u> 10 FACW 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ <u>Woody Vine Stratum</u> (Plot size: <u>30' diameter</u>) 1. <u>Hedera helix</u> 10 Y FACU 2. _____ % Bare Ground in Herb Stratum _____	<div style="margin-bottom: 10px;"> Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) </div> <div style="margin-bottom: 10px;"> Total Number of Dominant Species Across All Strata: <u>4</u> (B) </div> <div style="margin-bottom: 10px;"> Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B) </div> <div style="margin-bottom: 10px;"> 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 = _____ </div> <div style="margin-bottom: 10px;"> Hydrophytic Vegetation Indicators: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0¹ <input type="checkbox"/> 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants¹ <input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain) </div> <div style="margin-bottom: 10px;"> ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. </div> <div style="margin-bottom: 10px;"> Hydrophytic Vegetation Present? Yes <u>X</u> No _____ </div> <tr> <td colspan="2">Remarks:</td> </tr>	Remarks:	
Remarks:			

SOIL

Sampling Point: DP-1

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No ✓ Depth (inches): see remarks

Water Table Present? Yes No Depth (inches): see remarks

Water Table Present? Yes No Depth (inches): see remarks
Saturation Present? Yes No Depth (inches): see remarks
(Includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks: Field observations of water table were accidentally not recorded for this plot, but are likely to be similar to that of DP-3, which is a wetland plot located about 50-feet downslope within the wetland. OR's were observed and recorded along living roots.

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

Project/Site: The Estates At Leahy Park / 10345 NW Leahy Road City/County: Unincorporated Washington Sampling Date: 12/29/2020
 Applicant/Owner: Westwood Homes LLC State: OR Sampling Point: DP-2
 Investigator(s): K. Reavis, K. Sanderford Section, Township, Range: T1N R1W S35
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 8
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.524074 Long: 122.783570 Datum: NAD 1983
 Soil Map Unit Name: Delena silt loam, 3 to 12 percent slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks:			

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.		0	= Total Cover			
2.					Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
3.					Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
4.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30' diameter</u>)		30	Y	FAC	Prevalence Index worksheet:	
1.	<u>Crataegus sp.</u>	10	Y	FAC	Total % Cover of: _____ Multiply by: _____	
2.	<u>Rubus armeniacus</u>				OBL species _____ x 1 = _____	
3.					FACW species _____ x 2 = _____	
4.					FAC species _____ x 3 = _____	
5.					FACU species _____ x 4 = _____	
<u>Herb Stratum</u> (Plot size: <u>5' diameter</u>)		40	= Total Cover			
1.	<u>Rubus ursinus</u>	30	Y	FACU	UPL species _____ x 5 = _____	
2.	<u>Galium trifidum</u>	5		FACW	Column Totals: _____ (A) _____ (B)	
3.	<u>Geranium robertianum</u>	5		FACU	Prevalence Index = B/A = _____	
4.					Hydrophytic Vegetation Indicators:	
5.					— 1 - Rapid Test for Hydrophytic Vegetation	
6.					— 2 - Dominance Test is >50%	
7.					— 3 - Prevalence Index is ≤3.0 ¹	
8.					— 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
9.					— 5 - Wetland Non-Vascular Plants ¹	
10.					Problematic Hydrophytic Vegetation ¹ (Explain)	
11.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
<u>Woody Vine Stratum</u> (Plot size: <u>30' diameter</u>)		40	= Total Cover			
1.	<u>Hedera helix</u>	40	Y	FACU	Hydrophytic Vegetation Present?	
2.					Yes _____ No <u>X</u>	
% Bare Ground in Herb Stratum _____						
Remarks: 40% leaf litter in herb stratum						

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix	Redox Features					Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	
0-12	7.5 YR 2.5/1	100						silt clay loam
12-17	10 YR 3/1	95	10 YR 3/3	5	C	M		silt clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils³:

- | |
|---|
| <input type="checkbox"/> 2 cm Muck (A10) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____

Water Table Present? Yes _____ No Depth (inches): _____

Saturation Present? Yes _____ No Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No

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

Remarks:

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

Project/Site: The Estates At Leahy Park / 10345 NW Leahy Road City/County: Unincorporated Washington Sampling Date: 12/29/2020
 Applicant/Owner: Westwood Homes LLC State: OR Sampling Point: DP-3
 Investigator(s): K. Reavis, K. Sanderford Section, Township, Range: T1N R1W S35
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.523899 Long: 122.783812 Datum: NAD 1983
 Soil Map Unit Name: Delena silt loam, 3 to 12 percent slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u>	No _____		
Wetland Hydrology Present?	Yes <u>X</u>	No _____		
Remarks:				

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30' diameter</u>)		<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>	Dominance Test worksheet:	
1.					Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2.					Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)	
4.					Prevalence Index worksheet:	
		<u>0</u>	= Total Cover			Total % Cover of: _____ Multiply by: _____
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30' diameter</u>)					OBL species _____ x 1 = _____	
1.	<u>Rubus armeniacus</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	FACW species _____ x 2 = _____	
2.					FAC species _____ x 3 = _____	
3.					FACU species _____ x 4 = _____	
4.					UPL species _____ x 5 = _____	
5.					Column Totals: _____ (A) _____ (B)	
		<u>5</u>	= Total Cover			Prevalence Index = B/A = _____
<u>Herb Stratum</u> (Plot size: <u>5' diameter</u>)					Hydrophytic Vegetation Indicators:	
1.	<u>Agrostis sp.</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	1 - Rapid Test for Hydrophytic Vegetation	
2.	<u>Equisetum telmateia</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	✓ 2 - Dominance Test is >50%	
3.	<u>Ranunculus repens</u>	<u>5</u>		<u>FAC</u>	3 - Prevalence Index is ≤3.0 ¹	
4.					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.					5 - Wetland Non-Vascular Plants ¹	
6.					Problematic Hydrophytic Vegetation ¹ (Explain)	
7.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8.						
9.						
10.						
11.						
		<u>60</u>	= Total Cover			
<u>Woody Vine Stratum</u> (Plot size: <u>30' diameter</u>)					Hydrophytic Vegetation Present?	
1.	<u>Hedera helix</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	Yes <u>X</u> No _____	
2.						
% Bare Ground in Herb Stratum _____						
Remarks: 40% leaf litter in herb stratum						

soil

Sampling Point: DP-3

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes No ✓ Depth (inches):

Water Table Present? Yes No Depth (inches): 9

Saturation Present? Yes No Depth (inches): 7
(includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: The Estates At Leahy Park / 10345 NW Leahy Road City/County: Unincorporated Washington Sampling Date: 12/29/2020
 Applicant/Owner: Westwood Homes LLC State: OR Sampling Point: DP-4
 Investigator(s): K. Reavis, K. Sanderford Section, Township, Range: T1N R1W S35
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.523830 Long: 122.783866 Datum: NAD 1983
 Soil Map Unit Name: Delena silt loam, 3 to 12 percent slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <u>X</u>
Hydric Soil Present?	Yes _____	No <u>X</u>			
Wetland Hydrology Present?	Yes _____	No <u>X</u>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<u>Alnus rubra</u>	30	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)	
2.	<u>Pseudotsuga menziesii</u>	10	Y	FACU	Total Number of Dominant Species Across All Strata: <u>6</u> (B)	
3.	<u>Fraxinus latifolia</u>	10	Y	FACW	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)	
4.					Prevalence Index worksheet:	
		50	= Total Cover			Total % Cover of: _____ Multiply by: _____
Sapling/Shrub Stratum (Plot size: <u>30' diameter</u>)					OBL species	x 1 = _____
1.	<u>Rubus armeniacus</u>	60	Y	FAC	FACW species	x 2 = _____
2.					FAC species	x 3 = _____
3.					FACU species	x 4 = _____
4.					UPL species	x 5 = _____
5.					Column Totals:	(A) _____ (B) _____
		60	= Total Cover			Prevalence Index = B/A = _____
Herb Stratum (Plot size: <u>5' diameter</u>)					Hydrophytic Vegetation Indicators:	
1.	<u>Equisetum telmateia</u>	10	Y	FACW	1 - Rapid Test for Hydrophytic Vegetation	
2.					✓ 2 - Dominance Test is >50%	
3.					3 - Prevalence Index is ≤3.0 ¹	
4.					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.					5 - Wetland Non-Vascular Plants ¹	
6.					Problematic Hydrophytic Vegetation ¹ (Explain)	
7.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8.						
9.						
10.						
11.						
		10	= Total Cover			
Woody Vine Stratum (Plot size: <u>30' diameter</u>)					Hydrophytic Vegetation Present?	
1.	<u>Hedera helix</u>	80	Y	FACU	Yes <u>X</u> No _____	
2.						
% Bare Ground in Herb Stratum _____						
Remarks:						

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix	Redox Features					Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	
0-8	7.5 YR 3/2	100					silt clay loam	
8-14	7.5 YR 3/2	99	7.5 YR 4/4	1	C	M	silt clay loam	
14-19	10 YR 4/1	99	7.5 YR 4/4	1	C	M	silt clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:** (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils³:

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (If present):**Type: _____
Depth (inches): _____Hydric Soil Present? Yes _____ No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:Surface Water Present? Yes _____ No Depth (inches): _____Water Table Present? Yes No _____ Depth (inches): 16Saturation Present? Yes No _____ Depth (inches): 13
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No

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

Remarks:

APPENDIX D: VEGETATED CORRIDOR DATA FORMS

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-1				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2300						
Brief Description of Plot Location: just east of small wetland, north of the stream								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Tellima grandiflora</i>	15	10	X			X		X
2 <i>Carex leptopoda</i>	5	3	X			X		X
3 <i>Pteridium aquilinum</i>	15	10	X			X		X
4 <i>Polystichum munitum</i>	10	7	X			X		X
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum						0		
1 <i>Acer circinatum</i>	15	15	X			X		X
2 <i>Ilex aquifolium</i>	15	10		X		X		X
3 <i>Rubus armeniacus</i>	10	10		X	X			X
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum						0		
1 <i>Thuja plicata</i>	30	21	X			X		X
2 <i>Fraxinus latifolia</i>	30	21	X			X		X
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	145	108						
Total percent relative native species cover						87%		
Total percent aerial cover of tree canopy*						60%		
Total percent relative cover of non-native, noxious, and invasive species						20%		
X	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)							
	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)							
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)							
Comments:								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June, 2007

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-2				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2300, 2400, 400						
Brief Description of Plot Location: north side of Wetland 3								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Cardamine oligosperma</i>	10	12	X			X		X
2 <i>Equisetum arvense</i>	10	12	X					
3 <i>Carex leptopoda</i>	10	12	X					
4 Bare ground/moss cover: 40%		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum						0		
1 <i>Rubus armeniacus</i>	20	24		X	X		X	
2		0						
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum						0		
1 <i>Thuja plicata</i>	20	24	X			X		X
2 <i>Fraxinus latifolia</i>	15	18	X			X		X
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	85	100						
Total percent relative native species cover						76%		
Total percent aerial cover of tree canopy*						35%		
Total percent relative cover of non-native, noxious, and invasive species						24%		
	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)							
X	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)							
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)							
Comments:								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June, 2007.

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10346 NW Leahy Road		Plot ID: VC-3				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2400						
Brief Description of Plot Location: south side of wetland								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Hedera helix</i>	40	15	X		X		X	
2 <i>Polystichum munitum</i>	25	9	X			X		X
3 <i>Rubus ursinus</i>	10	4	X			X		X
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum						0		
1 <i>Ilex aquifolium</i>	80	30		X		X		X
2 <i>Symphoricarpos albus</i>	10	4	X			X		X
3 <i>Prunus laurocerasus</i>	10	4		X		X		X
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum						0		
1 <i>Pseudotsuga menziesii</i>	80	30	X			X		X
2 <i>Acer macrophyllum</i>	10	4	X			X		X
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	265	100						
Total percent relative native species cover						66%		
Total percent aerial cover of tree canopy*						90%		
Total percent relative cover of non-native, noxious, and invasive species						34%		
		Good Condition (native species >80% of the community and tree canopy >50% aerial cover)						
X		Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)						
		Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)						
Comments:								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June, 2007.

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-4									
Township/Range/Section: T1N R1W S35													
Tax Map: 1N135CB		Lot(s): 2400											
Brief Description of Plot Location: south side of stream, east of driveway													
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020											
Plant Community Type: Upland													
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)						
			Yes	No	Yes	No	Yes	No					
1 <i>Hedera helix</i>	50	18	X	X			X						
2 <i>Polystichum munitum</i>	80	21	X			X	X						
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Shrub Stratum													
1 <i>Ilex aquifolium</i>	15	5	X		X		X						
2 <i>Rubus armeniacus</i>	10	4	X	X			X						
3 <i>Prunus laurocerasus</i>	50	18	X		X		X						
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Tree Stratum													
1 <i>Thuja plicata</i>	100	35	X		X		X						
2		0											
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
Total	285	100											
Total percent relative native species cover						56%							
Total percent aerial cover of tree canopy*						100%							
Total percent relative cover of non-native, noxious, and invasive species						44%							
<table border="1"> <tr> <td></td> <td>Good Condition (native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td>X</td> <td>Marginal Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)</td> </tr> <tr> <td></td> <td>Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>									Good Condition (native species >80% of the community and tree canopy >50% aerial cover)	X	Marginal Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)		Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)
	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)												
X	Marginal Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)												
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)												
Comments:													

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-5										
Township/Range/Section: T1N R1W S35														
Tax Map: 1N135CB		Lot(s): 2400												
Brief Description of Plot Location: approximately 10 feet east of manhole, north side of stream														
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020												
Plant Community Type: Upland														
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)							
			Yes	No	Yes	No	Yes	No						
1 <i>Tolmiea menziesii</i>	40	20	X			X		X						
2 <i>Polystichum munitum</i>	30	15	X			X		X						
3 <i>Rubus ursinus</i>	10	5	X			X		X						
4 Bare ground/leaf litter: 40%		0												
5		0												
6		0												
7		0												
8		0												
9		0												
10		0												
Shrub Stratum														
1 <i>Ilex aquifolium</i>	15	7	X	X		X								
2 <i>Rubus armeniacus</i>	20	10	X	X		X								
3		0												
4		0												
5		0												
6		0												
7		0												
8		0												
9		0												
10		0												
Tree Stratum														
1 <i>Pseudotsuga menziesii</i>	35	17	X		X		X							
2 <i>Acer macrophyllum</i>	25	12	X		X		X							
3 <i>Thuja plicata</i>	30	15	X		X		X							
4		0												
5		0												
6		0												
7		0												
8		0												
9		0												
Total	205	100												
Total percent relative native species cover						83%								
Total percent aerial cover of tree canopy*						90%								
Total percent relative cover of non-native, noxious, and invasive species						17%								
<table border="1"> <tr> <td>X</td> <td>Good Condition (native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td></td> <td>Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)</td> </tr> <tr> <td></td> <td>Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>									X	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)		Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)		Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)
X	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)													
	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)													
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)													
Comments:														

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June, 2007

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Westwood/Leahy Road		Site Address: 10345 NW Leahy Road		Plot ID: VC-6									
Township/Range/Section: T1N R1W S35													
Tax Map: 1N135CB		Lot(s): 2300											
Brief Description of Plot Location: west side of wetland													
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford			Date of Investigation: 12/29/2020										
Plant Community Type: Upland													
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)						
			Yes	No	Yes	No	Yes	No					
1 <i>Ranunculus repens</i>	20	18		X		X		X					
2 <i>Daucus carota</i>	15	14		X		X		X					
3 <i>Stachys sp.</i>	5	5	X			X		X					
4 <i>Equisetum arvense</i>	10	9	X			X		X					
5 <i>Tolmiea menziesii</i>	5	5	X			X		X					
6		0											
7		0											
8		0											
9		0											
10		0											
Shrub Stratum													
1 <i>Rubus armeniacus</i>	35	32		X	X		X						
2		0											
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Tree Stratum													
1 <i>Thuja plicata</i>	20	18	X			X	X						
2		0											
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
Total	110	100											
Total percent relative native species cover							36%						
Total percent aerial cover of tree canopy*							20%						
Total percent relative cover of non-native, noxious, and invasive species							04%						
<table border="1"> <tr> <td></td> <td>Good Condition (native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td></td> <td>Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)</td> </tr> <tr> <td>X</td> <td>Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>									Good Condition (native species >80% of the community and tree canopy >50% aerial cover)		Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)	X	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)
	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)												
	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)												
X	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)												
<p>Comments: *aerial canopy cover is calculated based on the sum of cover of separate species and compared to a spherical densiometer measurement taken at each plot. Spherical densiometer: 83/96 covered = 83*1.04 = 86% canopy cover. This plot has 2 additional attributes in addition to being considered in good condition based on canopy cover and percent relative native species</p>													

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA

(3) R 07-20, Clean Water Service, June, 2007

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-7				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2400						
Brief Description of Plot Location: south side of stream, southeast portion of VC								
Site Investigator Name: J. Dalton, K. Reavil, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Hedera helix</i>	40	22	X	X		X		
2 <i>Polystichum munitum</i>	26	14	X		X		X	
3 <i>Carex leptopoda</i>	5	3	X		X		X	
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum								
1 <i>Ilex aquifolium</i>	15	8	X		X		X	
2 <i>Rubus armeniacus</i>	40	22	X	X		X		
3 <i>Oralaegus monogyna</i>	5	3	X		X		X	
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum								
1 <i>Acer macrophyllum</i>	20	11	X		X		X	
2 <i>Fraxinus latifolia</i>	20	11	X		X		X	
3 <i>Sequoiadendrum giganteum</i>	15	8	X		X		X	
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	185	100						
Total percent relative native species cover						46%		
Total percent aerial cover of tree canopy*						55%		
Total percent relative cover of non-native, noxious, and invasive species						54%		
<input type="checkbox"/>	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)							
<input checked="" type="checkbox"/>	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)							
<input type="checkbox"/>	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)							
Comments:								

APPENDIX E: TL#2300 DSL CONCURRENCE LETTER



Oregon

Kate Brown, Governor

October 9, 2019

Department of State Lands

775 Summer Street NE, Suite 100

Salem, OR 97301-1279

(503) 986-5200

FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

Roy M. Hayes Living Trust
Attn: Mark Hayes
10345 NW Leahy Rd.
Portland, OR 97229

Kate Brown
Governor

Bev Clarno
Secretary of State

Re: WD # 2019-0503 **Approved**
Wetland Delineation Report for NW Leahy Rd
Washington County; T1N R1W S35CB TL2300

Tobias Read
State Treasurer

Dear Mr. Hayes:

The Department of State Lands has reviewed the wetland delineation report prepared by Schott & Associates for the site referenced above. Based upon the information presented in the report, we concur with the wetland and waterway boundaries as mapped in Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, two wetlands (Wetlands 1 and 2, totaling approximately 0.044 acres), one ditch and one stream were identified. The wetlands and stream are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). The ditch is exempt per OAR 141-085-0515(8).

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact Chris Stevenson, the Jurisdiction Coordinator for Washington County, at (503) 986-5246.

Sincerely,

Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

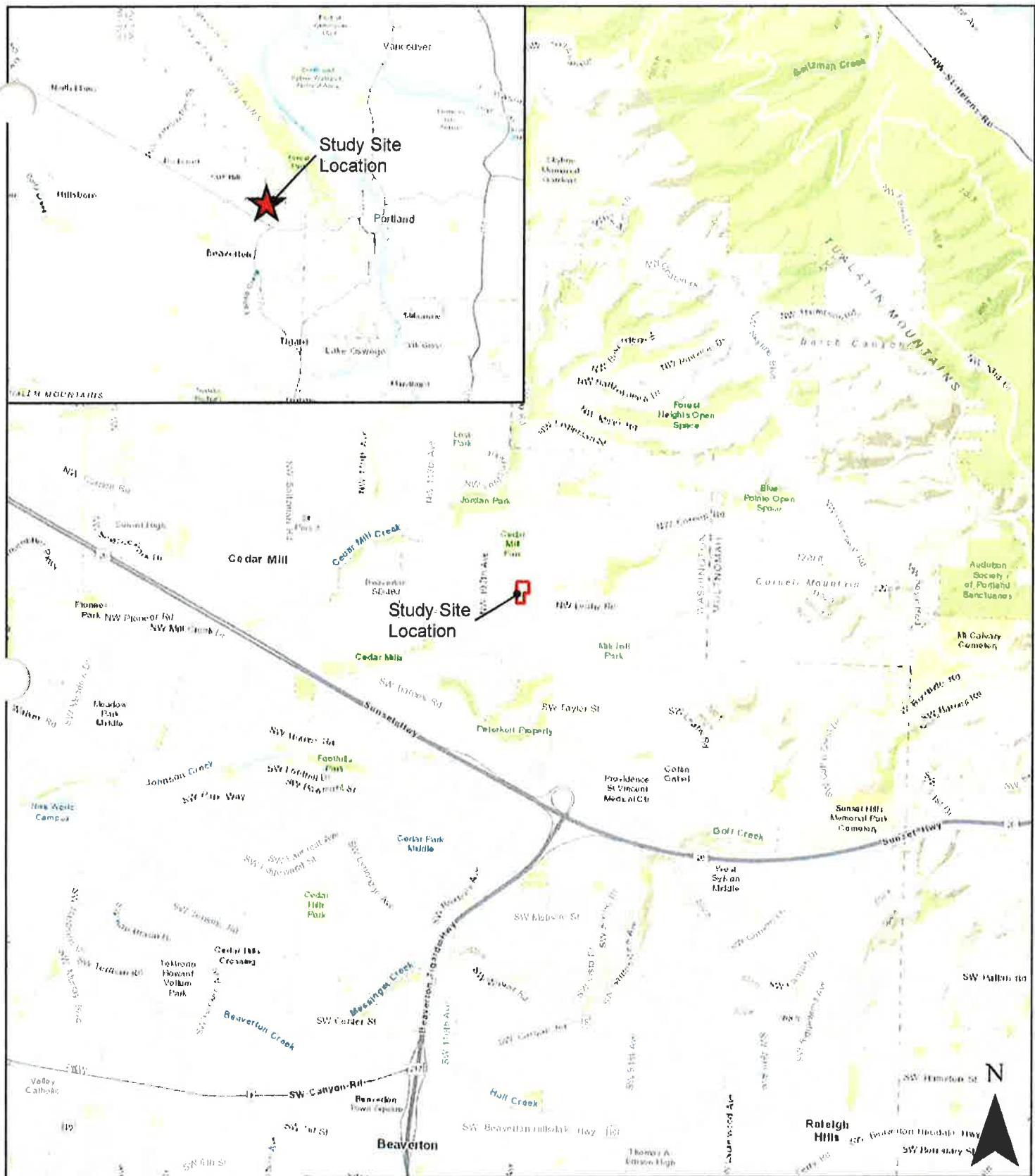
cc: Kim Biafora, Schott & Associates
Todd Knudsen, Berkshire Hathaway Home Services NW Real Estate
City of Portland Planning Department (Maps enclosed for updating LWI)
Carrie Bond, Corps of Engineers
Anita Huffman, DSL
Lindsey Obermiller, Clean Water Services

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279. A single PDF of the completed cover form and report may be e-mailed to: Wetland_Delineation@ds.state.or.us. For submittal of PDF files larger than 10 MB, e-mail DSL Instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information		
<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: Roy M. Hayes Living Trust 10345 NW Leahy Rd Portland, OR 97229		
<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address (if different): Todd Knudsen Berkshire Hathaway Home Services NW Real Estate 9600 SW Barnes Rd, Suite 100 Portland, OR 97226		
I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.		
Typed/Printed Name: <u>Marc A Hayes</u> Signature: <u>M. Hayes</u> Date: <u>9/16/2017</u> Special instructions regarding site access:		
Project and Site Information		
Project Name: NW Leahy Road		
Latitude: 45.524038° Longitude: -122.783329° decimal degree - centroid of site or start & end points of linear project		
Proposed Use: Residential development		
Tax Map # 1N135CB Tax Lot(s) 2300 Tax Map #		
Project Street Address (or other descriptive location): 10345 NW Leahy Rd		
Township 1N Range 1W Section 35CB QQ NW/SW Use separate sheet for additional tax and location information		
City: Portland	County: Washington	
Waterway: Unnamed Trib #1 River Mile: 1		
Wetland Delineation Information		
Wetland Consultant Name, Firm and Address: Kim Blafora, Schott & Associates 21018 NE Hwy 99E Aurora, OR 97002		
Phone # (503) 678-6007 Mobile phone # (if applicable) E-mail: kim@schottandassociates.com		
The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: <u>Kim Blafora</u> Date: <u>9/16/2017</u>		
Primary Contact for report review and site access is <input type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input checked="" type="checkbox"/> Authorized Agent		
Wetland/Waters Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Study Area size: 3.14 Total Wetland Acreage: 0.0440		
Check Applicable Boxes Below		
<input type="checkbox"/> R-F permit application submitted <input type="checkbox"/> Mitigation bank site <input type="checkbox"/> Industrial Land Certification Program Site <input type="checkbox"/> Wetland restoration/enhancement project (not mitigation) <input type="checkbox"/> Previous delineation/application on parcel If known, previous DSL # _____		
<input type="checkbox"/> Fee payment submitted \$ _____ <input type="checkbox"/> Fee (\$100) for resubmittal of rejected report <input type="checkbox"/> Request for Reissuance. See eligibility criteria. (no fee) DSL # _____ Expiration date _____		
<input type="checkbox"/> LWI shows wetlands or waters on parcel Wetland ID code _____		
For Office Use Only		
DSL Reviewer: <u>CS</u>	Fee Paid Date: <u> / / </u>	DSL WD # <u>2019-0503</u>
Date Delineation Received: <u>9 / 6 / 19</u>	Scanned: <input type="checkbox"/>	Electronic: <input checked="" type="checkbox"/>
DSL App.# _____		



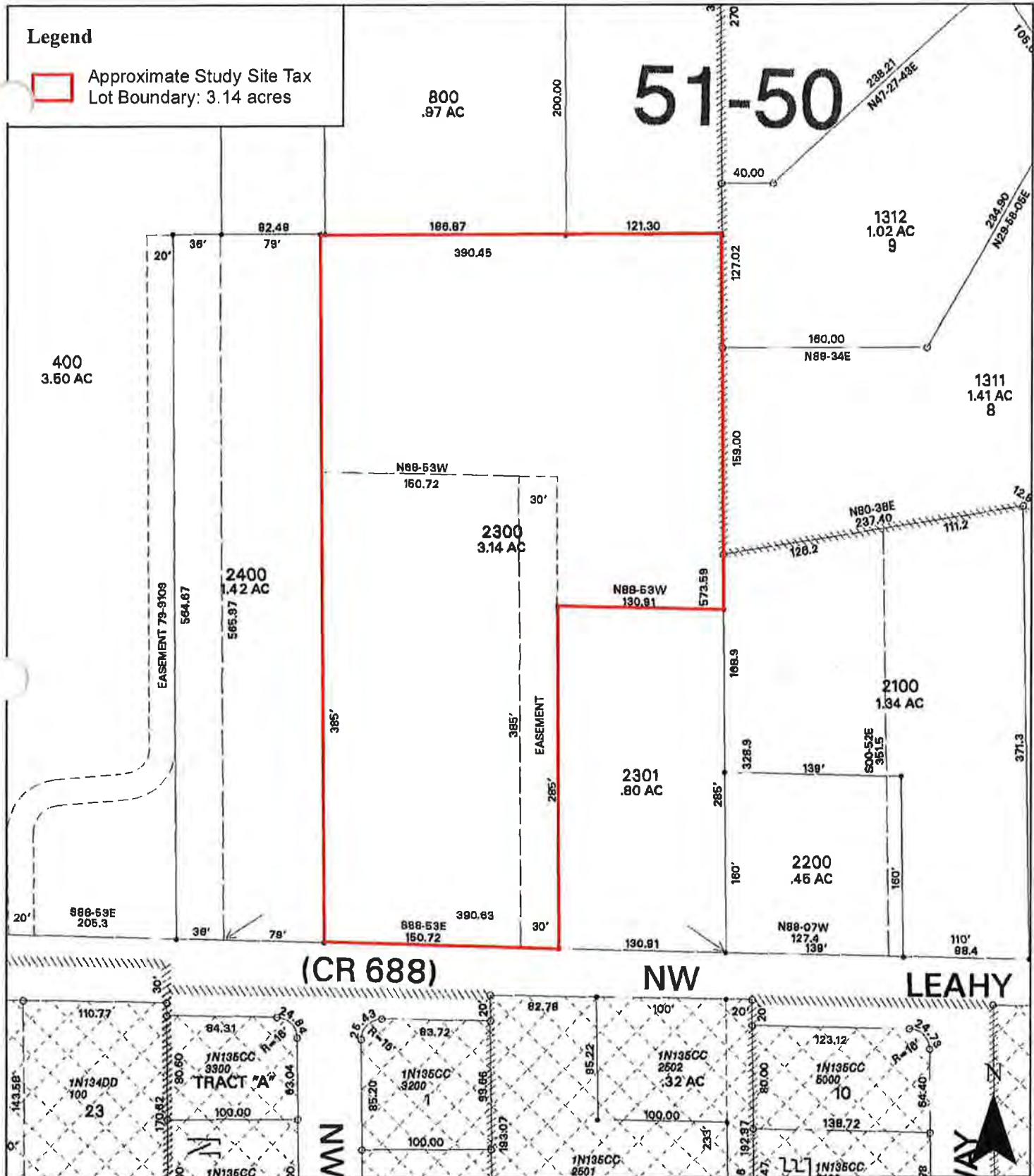
Date: 8/12/2019

1 inch = 0.6 miles

Data Source: ESRI, 2019

Figure 1. Location Map

NW Leahy Road Project Site: S&A #2708



Date: 8/16/2019

Data Source: Washington County Intermap, 2019

Figure 2. Washington County Tax Map:
1N135CB

NW Leahy Road Project Site: S&A # 2708

Legend

- █ Approximate Study Site Tax Lot Boundary: ~3 acres
- ▨ Wetlands: 1,941 sq. ft.
- ▨ Stream Corridor: 1,428 sq. ft.
- ▨ Ditch: 131 sq. ft.
- Contours: 2-ft. Interval
- Sample Plots
- Photo Points
- Pipe Outlet
- Feature Continues Offsite



Mapping Method and Precision Statement: The mapped features were based on vegetation, soils, and hydrology, as well as OHWM data gathered in the field by Schott & Associates. The sample plots and drainage boundaries were recorded utilizing a Trimble Geo XT hand-held unit and post-processed to a +/- 3 foot accuracy. The GPS data were then imported into ArcGIS software to produce maps.

Date: 8/16/2019

Data Source: ESRI, 2019; Washington County Intermap, 2019

DSL WD # 2019-0503
Approval Issued 10/09/2019
Approval Expires 10/09/2024

Figure 6. Wetland Delineation Map

NW Leahy Road Project Site: S&A # 2708

0 25 50 100 Feet

APPENDIX F: SITE PLAN ALTERNATIVES

**Site Plan
Estates at Leahy Park
Washington County, Oregon**

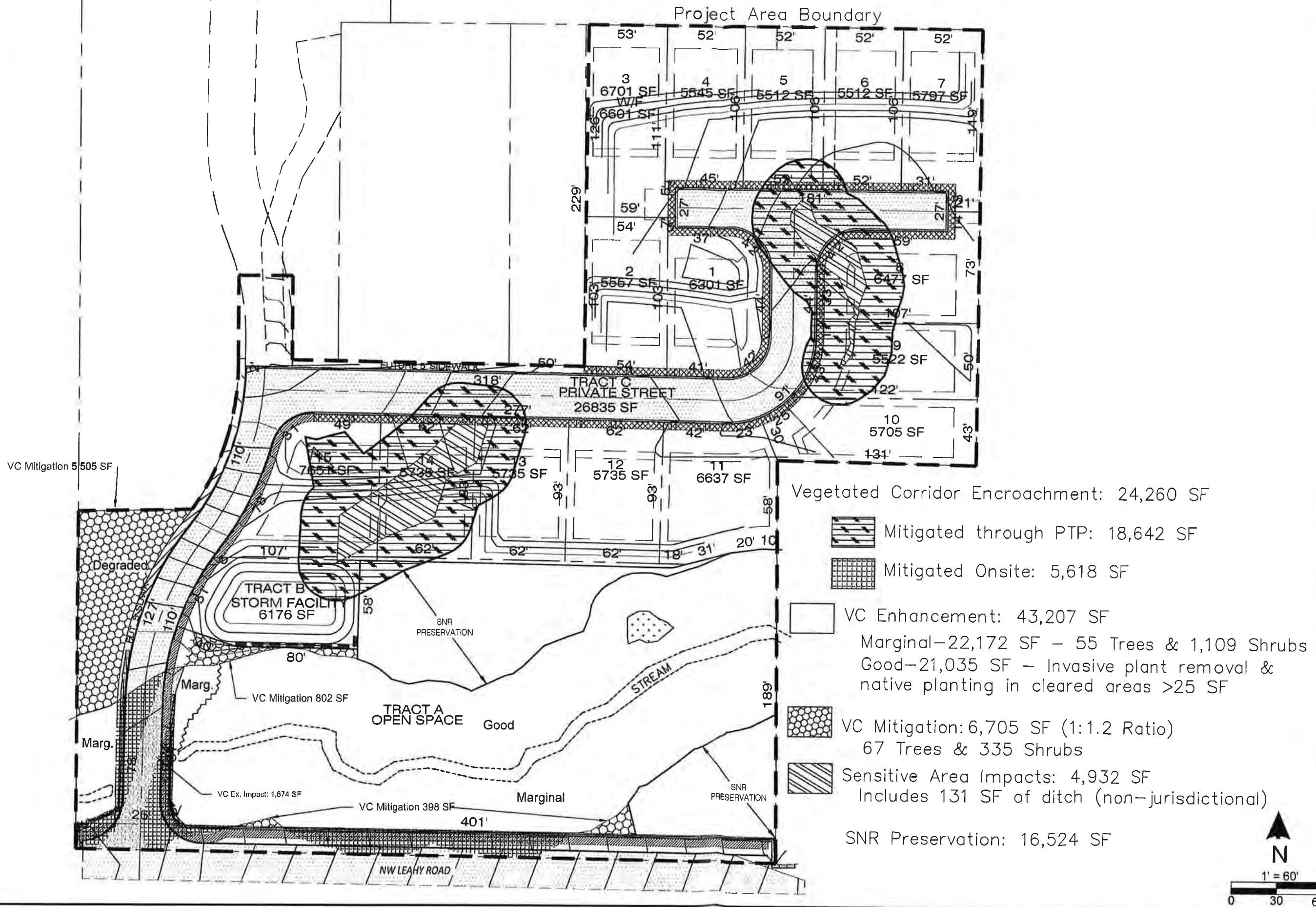
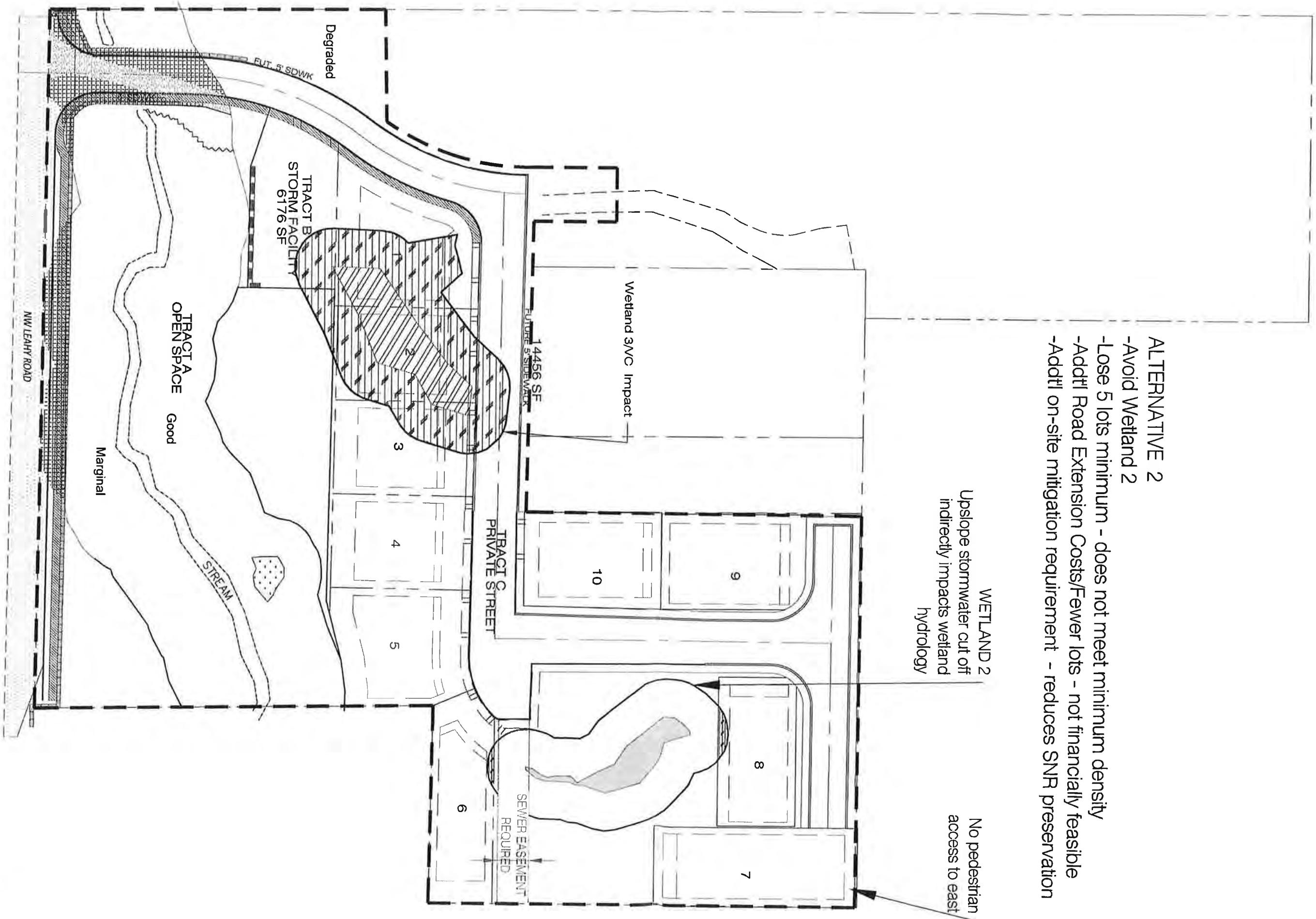


Figure 4

ALTERNATIVE 2



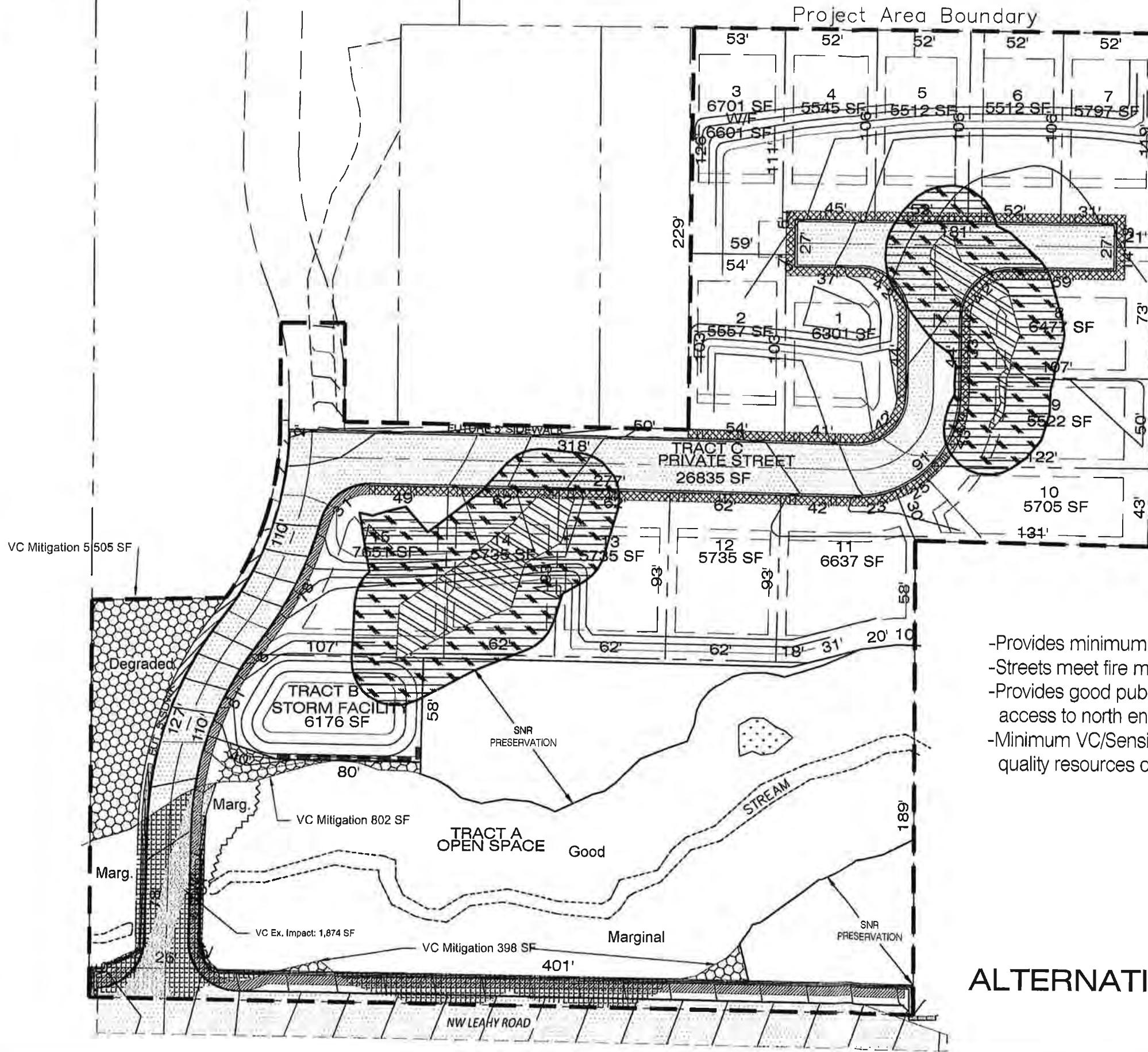
1"=60' N
▲

Site Plan Estates at Leahy Park Washington County, Oregon

Base Map Source:	Pioneer Design Group, Inc.
Modified By:	KR
Date:	3/21
Job:	20062
Rev:	00/00

ALTERNATIVE 3 - PREFERRED

- Provides minimum of 15 lots
- Streets meet fire marshal requirements for turn around
- Provides good public gravity sewer access & pedestrian access to north end of site for future development
- Minimum VC/Sensitive Area encroachment of highest quality resources on-site



APPENDIX G: FUNCTIONAL ASSESSMENT

Functional Assessment

An HGM referenced wetland functional assessment was conducted to quantify wetland functions of wetlands 2 and 3. The HGM assessment used the methodology outlined in the Guidebook for *Hydrogeomorphic (HGM)-based Assessment of Oregon Wetland and Riparian Sites I: Willamette Valley Ecoregion Riverine Impounding and Slope/Flats Subclasses Volume IA: Assessment Methods* (Adamus, 2001).

Using the HGM assessment, Best Professional Judgement was used to extrapolate the HGM wetland functions into a group level functional assessment. This provides the group function as well as the value of each wetland for providing these particular functions in the local watershed (Table 1 and Table 2).

Table 1. Wetland 2 Group Function and Value Scores Summary

GROUPS	SELECTED FUNCTION ¹	IMPACT SITE – Slope/PEM		
		Function Rating ²	Rating Break Proximity	Value Rating
Hydrologic Function (WS)	Water Storage & Delay (WS)	Higher	MH	Moderate
Water Quality Support (SR, PR, or NR)	Nitrogen Removal (NR)	Moderate	MH	Higher
Fish Habitat (FA or FR)	N/A			
Aquatic Habitat (AM, WBF, or WBN)	Amphibian & Turtle Habitat (AM)	Higher		Higher
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Support of characteristic vegetation (PD/POL)	Moderate		Moderate

¹The specific function selected to represent the function group is the highest rated function from the group's members;

²Function rating based on value scaled to least-altered site of this subclass because this wetland is considered only marginally altered

Wetland 2 scored moderate for water quality support and ecosystem support and high for hydrologic function and aquatic habitat. The value of the hydrologic function was decreased because upslope of this wetland is developed neighborhoods, likely limiting the native flow that once reached this wetland. Similarly, the value of water quality support was increased to high because runoff that does reach this wetland has likely a higher concentration of phosphorous and nitrates from surrounding human use including lawn fertilization and road runoff.

While aquatic habitat for waterbird nesting and feeding is low, this wetland scored high because of its suitability for amphibian and turtle habitat due to a high relative percent of wooded cover compared to grassland-crop cover, minimal disturbances to the soils, several types of dead wood and snags in the vicinity, and an appropriate change between the predominating biennial high and low water levels (about 6-inches).

Ecosystem support was moderate because while there is no permanent or open water, the mapped soil series is hydric with no part of the wetland created on former uplands, the predominant soil texture is silty clay loam, and the distance to the nearest busy road is moderate, about 280-feet.

Table 2. Wetland 3 Group Function and Value Scores Summary

GROUPS	SELECTED FUNCTION ¹	IMPACT SITE – Slope/PFO			
		Function Rating ²	Rating Break Proximity	Values Rating	Rating Break Proximity
Hydrologic Function (WS)	Water Storage & Delay (WS)	Higher	MH	Moderate	
Water Quality Support (SR, PR, or NR)	Nitrogen Removal (NR)	Higher		Higher	
Fish Habitat (FA or FR)	N/A				
Aquatic Habitat (AM, WBF, or WBN)	Amphibian & Turtle Habitat (AM)	Higher		Higher	
Ecosystem Support (WC, INV, PD, POL, SBM, or OE)	Support of characteristic vegetation (PD/POL)	Higher	MH	Moderate	

¹The specific function selected to represent the function group is the highest rated function from the group's members;

²Function rating based on value scaled to least-altered site of this subclass because this wetland is considered only marginally altered

Wetland 3 scored high for all groups, but values for hydrologic function and ecosystem support were decreased to moderate because of the lack of hydrologic connection upslope, proximity to a major road (about 180-feet) and a regularly used driveway (about 60-feet), and a lack of diversity along the northwestern wetland edge comprised of exclusively Himalayan blackberry with no tree or herbaceous strata.

Overall, these two wetlands score very similarly because they are similar size, have similar plant communities and soil profiles, are hydrologically similar connecting downslope to the same stream, and are both within the same contiguous forested area about 230-feet apart. However, notable differences that make wetland 3 score overall higher than wetland 2 include: varying topography within wetland 3 compared to a mostly flat profile within wetland 2; more regular site visititation to wetland 2 evidenced by the trailer/various outbuildings within the woods surrounding this wetland; a more complete canopy cover of wetland 3; and varying distributions of strata within the wetlands, i.e. greater herbaceous cover and less shrub and tree cover in wetland 2 and less herbaceous but more shrub and tree cover within wetland 3.

SHEET FOR AUTOMATIC CALCULATION OF FUNCTION SCORES - revised June 2008***Slope or Flats subclass***

Site Name: Estates at Leahy Park - wetland 2 (slope class)

Date: 9/14/2021

It is recommended to do a "Save As" from this blank spreadsheet for each use, assigning different file names. This will help reduce the chance of accidentally confusing new data with previously entered data.

For reference, the function(s) addressed by each indicator are noted in column E. Codes are shown below next to the function names. The capital letter in the code (e.g., sp- B) refers to the code for the indicator in the published Volume IA. **HFR**= scaled to highest functioning site of this subclass found by DSL; **LAR**= scaled to least-altered site of this subclass found by DSL Scores greater than 1 indicate the capacity of the function at the site you assessed may be greater than in all sites of this subclass assessed by the DSL team during model calibration.

Data **must** be entered for every indicator, unless the scale block for this subclass is shaded. Each value in column D must be less than or equal to 1.

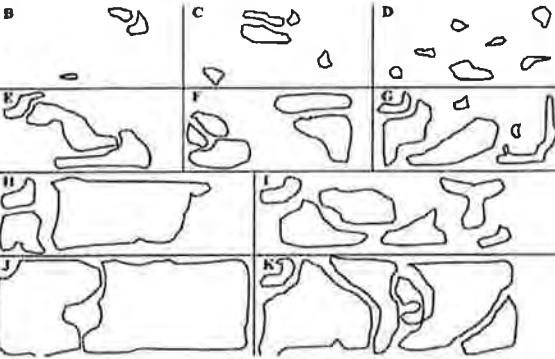
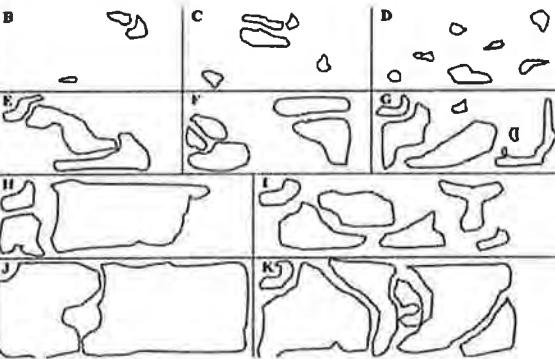
Function:	Calculated Function Capacity for SF sites if HFR:	if LAR:
Water Storage & Delay (ws)	0.40	0.89
Sediment Stabilization & Phosphorus Retention (sp)	0.51	0.54
Nitrogen Removal (n)	0.72	0.84
Primary Production (pp)	0.71	0.71
Invertebrate Habitat Support (i)	0.55	0.55
Amphibian & Turtle Habitat (at)	0.72	0.95
Breeding Waterbird Support (bw)	0.00	0.00
Wintering & Migrating Waterbird Support (ww)	0.42	0.48
Songbird Habitat Support (sb)	0.47	0.72
Support of Characteristic Vegetation (v)	0.83	0.86

Note 1: Models and scores for ws, sp, n, and pp intentionally do not account for the **area** of the wetland, an especially important factor for these functions.

Note 2: This method should be applied to an entire contiguous wetland, not just to the portion affected directly by a planned alteration or restoration.

Indicator	Raw Datum	Scale for SF sites	Scaled Datum	Function
Presence of permanent surface water (water year-round during most years)? (p. 82)	absent	absent = 0 present = 1.0	0	sb-P rf-X
Percent of permanent zone that is open water (i.e., lacking emergent and underwater plants) (p. 79) (Answer "0" if no permanent zone is present)	0	100 = .1 80-99 = .8 60-80 = 1.0 40-60 = .8 20-40 = .4 0-20 = .2	0.2	at-M
Percent of site that is inundated only seasonally (i.e., watermarks, moss lines, debris lines, etc.) (p. 81)	50	none = 0 1-10 = .1 10-25 = .6 25-50 = .8 ≥ 50 = 1.0 none = 0 1-20 = .5 20-40 = .7 40-60 = .8 60-80 = .9 ≥ 80 = 1.0	0.8	i-B n-A ws-A
At least 0.5 acre of surface water persists until at least July 1 and water is mostly wider than 10 ft?	no	Yes = 1 No = 0	0	ww-A bw-X

Predominant water depth during biennial low water (p. 82)	0	0" 1-2" = .6 2-24" = 1.0 2-6 ft = .8 >6 ft = .6	0	bw-D
		0" = .1 1-2" = 1.0 2-24" = .8 >24" = .2	0.1	i-D
Percent of site occupied by the most extensive depth category at this site during biennial low water. (p. 81). (Delimit the low water zone first, then break into these depth categories, then identify the category that predominates horizontally).	100% is 0 inches	100" = 0 80-100 = .1 50-80 = .4 30-50 = .8 <30" = 1.0	0	bw-B
(Possible categories are: 0 inches; 1-2 inches; 2-24 inches; 2-6 feet; >6 feet)				
Difference between the predominating biennial high and low water levels (p. 71) 0) = No change 1) = Difference of 1 class 2) = Difference of 2 classes 3) = Difference of 3 classes 4) = Difference of 4 classes Class 1 = 0 inches Class 2 = 1-2 inches Class 3 = 2-24 inches Class 4 = 2-6 feet Class 5 = >6 feet	2 class difference from 0" to 6"	0) = 0 1) = .3 2) = .5 3) = .8 4) = 1.0 0) = 0 1) = .25 2) = .5 3) = .75 4) = 1.0	0.5 0.5	n-B at-E bw-E ww-F
Predominant vertical increase in surface water level (ft) in most of the seasonal zone (i.e., water marks, moss lines, debris lines, etc. Look at the highest point for 2 year flood and measure the difference from biennial low)	6" or 0.5	0" = 0 .1 - .4 = .25 .5 - 1.0 = .5 1 - 2 = .75 >2 = 1.0	0.5	ws-B
Number of depth categories during biennial high water. (p. 77) Categories are: — 1 - 2 inches — 2 - 24 inches — 2 - 6 ft — > 6 ft	2	1 = 0 2 = .3 3 = .6 4 = 1.0 1 = .1 2 = .3 3 = .6 4 = 1.0	0.3 0.3	bw-C ww-E

<p>Percent & distribution of pools during biennial high water. (p. 80)</p> <p>(Note: if site is > 1 acre, select the condition that predominates in 1 acre sub-units of the site.)</p> <p>A = None</p> 	<p>A</p> <p>A = 0 B = .6 C = .65 D = .7 E,F = .75 K = .8 H = .85 I = .9 J = .95 G = 1.0</p>	<p>0</p> <p>sp-C ww-D i-E, at-A</p>
<p>Percent & distribution of pools during biennial low water. (p. 80)</p> <p>(Note: if site is > 1 acre, select the condition that predominates in 1 acre sub-units of the site.)</p> <p>A = None</p> 	<p>A</p> <p>A = 0 B = .6 C = .65 D = .7 E,F = .75 J = .8 H = .85 I = .9 K = .95 G = 1.0</p>	<p>0</p> <p>bw-A, pp-E, n-1</p>
<p>Percent of the site occupied by hummocks (p. 74, 75)</p>	<p>none</p> <p>none = 0 1-10 = .6 10-90 = .8 >90 = 1.0</p>	<p>0</p> <p>at-B ww-C sb-M sp-B pp-C n-G i-F</p>

Maximum annual extent of vernal pools/ shorebird scrapes and mudflats: (p. 76) A = none B = 1 – 100 sq. ft. C = 100-1000 sq. ft. D = 1000 – 10,000 sq. ft. E = >10,000 sq. ft.	A	A = 0 B = .6 C = .7 D = .8 E = 1.0	0	ww-B
Must meet ALL of the following: a) herbs are generally < 4" and comprise < 80% ground cover during winter or early spring b) topography is basically flat c) inundated to a depth of < 6" for 2 or more continuous weeks d) never shaded by trees, shrubs, or buildings				
Presence of logs or boulders that extend above the surface of permanent water (p. 84)	absent	absent = 0 present = 1.0	0	at-G
Predominant soil texture: (p 83) GC= gravel or cobble SA=sand, sandy loam, or loamy sand L= loam, silty loam, gravelly loam C= clay, sandy clay, silty clay, clay loam, silty clay loam O= organic particles<1mm	C	GC =.1 SA =.2 L =.8 C/O = 1.0	1	sp-D
<u>Guidance:</u> 1. Soil remains in a ball when squeezed YES...Go to 3; NO ...Go to 2 2. > 50% of the particles (by weight) are > 1 mm YES..."GC"; NO ..."SA" 3. Squeezed soil forms an even ribbon YES...Go to 4; NO ..."SA" 4. Soil ribbon extended > 1" without breaking YES..."C/O"; NO ...Go to 5 5. Soils feels very gritty YES..."SA"; NO..."L"				
Presence of some mottling and/or other features that indicate oxygen deficits, or, permanent water is present	present	absent = 0 present = 1.0	1	n-X
Mapped soil series is hydric (not simply a hydric inclusion). See county soil map and p. 75.	yes 16C	1=yes 0=no	1	v-C at-D ww-G j-I
Percent of site that was constructed on former uplands (non-hydric soil) (p. 81): 6) = recent, >90% of site 5) = recent, 10-90% of site 4) = recent, 1-10% of site 3) = >5 years ago, >90% of site 2) = >5 years ago, 10-90% of site 1) = >5 years ago, 1-10% of site 0) = none	0	6) = 0 5) = .1 4) = .2 3) = .3 2) = .4 1) = .5 0) = 1.0	1	i-J at-K v-K n-D

Tally the percent of surrounding land cover (exclude the site itself) as exists during a typical May. Answer each row independently. They do not necessarily sum to 100%.

within 200 ft of the site boundary:

a. % Water, wetland =	5
b. % Grassland, water, wetland =	8
c. % Grassland, row crops =	0
d. % Wooded =	60
e. % Natural (not lawn, crops, paved, building)=	68

within 1000 ft:

f. % Water, wetland =	2
g. % Grassland, water, wetland =	2
h. % Grassland, row crops =	1
i. % Wooded =	40
j. % Natural =	42

within 5,280 ft:

k. % Water, wetland =	2
l. % Grassland, row crops =	5
m. % Wooded =	15

In column D, enter the scaled value for the number in column B. (= a), above)	5	0 = 0 1-10 = .4 10-20 = .8 >20 = 1.0	0.4	bw-I ww-I
In column D, enter the scaled value for the number in column B. (=b), above)	8	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.1	sb-N
In column D, enter the scaled value for the number in column B. (=c), above)	0	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0	ww-K
In column D, enter the scaled value for the number in column B. (=d), above)	60	0 = 0 1-10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.8	sb-l
In column D, enter the scaled value for the number in column B. (=e), above)	68	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0.7	i-L at-O v-R
In column D, enter the scaled value for the number in column B. (= (a+f+k)/3), above)	3	none = 0 1 - 10 = .4 10-20 = .8 >20 = 1.0	0.4	ww-H bw-J

In column D, enter the scaled value for the number in column B. (= (c+h+l)/3), above)	2	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0	ww-J
In column D, enter the scaled value for the number in column B. (= (d+i+m)/3), above)	38.3333333	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.6	sb-J
In column D, enter the scaled value for the number in column B. (= (e+j)/2), above)	55	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0.5	bw-K
In column D, enter the scaled value for the number in column B. (= (b+g)/2), above)	5	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.1	sb-O
Percent of land cover within 200 ft (but only in the contributing watershed) that is "natural" – that is, NOT cropland, lawns, pavement, or buildings (p. 79)	50	<10 = 0 10-20 = .1 20-40 = .3 40-90 = .5 90-100 = 1.0 <10 = 0 10-20 = .1 20-40 = .3 40-90 = .5 90-99 = .9 100 = 1.0	0.5 0.5	pp-F i-M v-Q
Percent woodland divided by percent grassland-crops within 200 ft of the site (p. 71)	60/0	<.1 = .1 0.1-0.8 = .6 0.8-1.2 = 1.0 1.2-2.0 = .6 >2.0 = .1	0.1	at-P
Distance (ft) to nearest busy road (p. 71) This includes a) any road or parking lot in a develop area that contains >4 buildings per acre, b) any road with a maximum traffic rate of > 6 vehicles per minute, during an average day during the summer	280	<100 = 0 100-300 = .3 300-600 = .5 600-1200 = .7 1200-2400 = .8 2400-4800 = .9 >4800 = 1.0	0.3	bw-G at-N v-P sb-R

Note: The following 5 rows must sum to 100%. The number of visitors is immaterial.

Percent of site including 100-ft buffer that is visited 365 days a year or almost so =	0
Percent of site including 100-ft buffer that is visited more than 80 days a year (>20% of year), but less than daily =	10
Percent of site including 100-ft buffer that is visited 20-80 days a year (e.g., about once a week) =	80
Percent of site including 100-ft buffer that is visited just a few days a year =	10
Percent of site including 100-ft buffer that is almost never visited =	0

Scale the calculated value in the box on the right (sum of the above 5 rows) and enter the scaled value in column D (p. 72)	300	100-200 = 0 200-300 = .3 300-400 = .7 400-500 = 1.0	0.3	bw-H v-O sb-Q
Percent of site affected by soil leveling (i.e., portion previously leveled by equipment for farming)	0	100 = .1 10-99 = .3 1-10 = .6 0 = 1.0	1	at-C i-G pp-D sp-F n-H
Percent of site currently affected by soil compaction: (i.e., by equipment, vehicles, livestock, humans, fill) 6 = recent, at >90% of site 5 = recent, at 10-90% of site 4 = recent, at 1-10% of site 3 = >5 years ago, >90% of site 2 = >5 years ago, 10-90% of site 1 = >5 years ago, 1-10% of site 0 = none	4	5/6) = .1 4) = .2 3) = .4 2) = .6 1) = .8 0) = 1.0	0.2	sp-G v-M sb-K
Percent of site's vegetation that is mowed or subject to extreme grazing at least annually (p. 81)	none	>90 = 0 10-90 = .2 1-10 = .4 none = 1.0	1	sb-L v-N
Most of site is burned, or harvested for hay or timber, at least biennially? (p. 72)	none	no = 0 yes = 1.0	0	n-J
Percent of site currently affected by soil mixing (plowing, excavation, bulldozing, etc.): (p. 81) 6 = recent, at >90% of site 5 = recent, at 10-90% of site 4 = recent, at 1-10% of site 3 = >5 years ago, >90% of site 2 = >5 years ago, 10-90% of site 1 = >5 years ago, 1-10% of site 0 = none	1	5 or 6 = .1 4 = .2 3 = .4 2 = .6 1 = .8 0 = 1.0	0.8	at-f i-H v-L pp-A n-C sp-E
Percent of the site that is vegetated (including submersed aquatics) (p. 82)	75	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.8	sb-A v-A

Percent of site with woody vegetation (p. 82)	25	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.4	sb-b
Percent of seasonal zone that is bare during most of the dry season. (i.e., devoid of vegetation, except trees) (Answer "0" if no seasonal zone)	5	>80 = 0 60-80 = .2 40-60 = .4 20-40 = .6 1-20 = .8 0 = 1.0	0.8	pp-G sp-H
Percent of site that is inundated permanently and contains emergent, floating, or submersed plants (p. 72)	0	0 = 0 1-10 = .9 >10 = 1.0 0 = 0 1-10 = .4 10-30 = .8 30-60 = 1.0 60-90 = .9 >90 = .6	0	i-A bw-F
Percent cover of herbs within the seasonal zone (p. 72)	70	0 = 0 1-30 = .1 30-50 = .6 50-70 = .75 70-100 = 1.0	0.75	at-L
Percent of whole site that has closed canopy (p. 80)	50	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.6	sb-C
Percent understory shrub & vine cover beneath the drip line of trees (p. 82) (Answer "0" if no wooded areas)	30	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.4	sb-D

<p>Number & distribution of vegetation forms --- herbs, shrubs, trees. If only one form, answer "A". To count, the patch must comprise >0.5 acre or >5% of vegetated area. See p. 77 for enlargement of diagram.</p> <table border="1"> <thead> <tr> <th></th><th>Veg forms are mostly in discrete quiet homogeneous zones or patches:</th><th>Zones/patches are recognizable but not homogeneous, and are:</th><th>Forms are highly intermixed; mass are mostly not recognizable; no patch >20% of site</th></tr> </thead> <tbody> <tr> <td>Two forms ...</td><td>B 1. of about equal area </td><td>C 1. of about equal area </td><td>D </td></tr> <tr> <td></td><td>B 2. of unequal areas </td><td>C 2. of unequal areas </td><td></td></tr> <tr> <td>All three forms ...</td><td>E 1. of about equal area </td><td>F 1. of about equal area </td><td>G </td></tr> <tr> <td></td><td>E 2. of unequal areas </td><td>F 2. of unequal areas </td><td></td></tr> </tbody> </table>		Veg forms are mostly in discrete quiet homogeneous zones or patches:	Zones/patches are recognizable but not homogeneous, and are:	Forms are highly intermixed; mass are mostly not recognizable; no patch >20% of site	Two forms ...	B 1. of about equal area 	C 1. of about equal area 	D 		B 2. of unequal areas 	C 2. of unequal areas 		All three forms ...	E 1. of about equal area 	F 1. of about equal area 	G 		E 2. of unequal areas 	F 2. of unequal areas 		F2	<p>A = 0 B2 = .60 C2 = .65 B1 = .70 C1,D = .75 E2 = .80 F2 = .85 E1 = .90 F1 = .95 G = 1.0</p>	0.85	pp-B v-B at-J i-K sb-H
	Veg forms are mostly in discrete quiet homogeneous zones or patches:	Zones/patches are recognizable but not homogeneous, and are:	Forms are highly intermixed; mass are mostly not recognizable; no patch >20% of site																					
Two forms ...	B 1. of about equal area 	C 1. of about equal area 	D 																					
	B 2. of unequal areas 	C 2. of unequal areas 																						
All three forms ...	E 1. of about equal area 	F 1. of about equal area 	G 																					
	E 2. of unequal areas 	F 2. of unequal areas 																						
<p>Number of woody species (p. 82)</p>	9	<p>unwooded= 0 1-2 = .1 3-4 = .25 5-6 = .5 7-9 = .75 10-18 = .9 >18 = 1.0</p>	0.75	sb-E																				
<p>Number of native woody species(p. 78)</p>	5	<p>0 = 0 1 = .1 2-3 = .25 4-5 = .5 6-9 = .75 10-13 = .9 >14 = 1.0</p>	0.5	v-F																				
<p>Percent of woody species list consisting of species that are native (p. 78)</p>	55	<p>0 = 0 1-57 = .1 58-66 = .25 67-74 = .5 75-79 = .75 80-99 = .9 100 = 1.0</p>	0.1	v-g																				
<p>Percent of woody cover within stratum that is comprised of non-native species (p. 82)</p> <p>(Use the greater of the tree, understory shrub, or open shrub stratum's percent)</p>	50	<p>100 = 0 80-99 = .1 30-79 = .25 10-29 = .5 5-9 = .75 1-4 = .9 0 = 1.0</p>	0.25	v-H																				
<p>Spatial predominance of non-native herbs (p. 84)</p> <p>A = Non-natives predominate B = Cannot determine (about equal) C = Natives predominate</p>	C	<p>A = 0 B = .5 C = 1.0</p>	1	v-D																				

Percent of herb species list comprised of species that are non-native (p. 80)	20	100 = 0 80-99 = .1 67-79 = .25 60-66 = .5 25-59 = .75 1-24 = .9 0 = 1.0	0.9	v-E
Average diameter (inches) of the 3 largest trees. (p. 71)	17	none = 0 1-5 = .1 6-9 = .25 10-17 = .5 18-25 = .75 26-35 = .9 >35 = 1.0	0.5	sb-G v-J at-I n-F
Number of deadwood types. Potentially 12 types:(p. 77) <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, 4-8" <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, 8-20" <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, >20" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: 4-8" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: 8-20" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: >20" <input type="checkbox"/> Class 3: well rotted, losing shape: 4-8" <input type="checkbox"/> Class 3: well rotted, losing shape: 8-20" <input type="checkbox"/> Class 3: well rotted, losing shape: >20" <input type="checkbox"/> Standing stumps/snags: 4-8" <input type="checkbox"/> Standing stumps/snags: 8-20" <input type="checkbox"/> Standing stumps/snags: >20" <input type="checkbox"/> Artificial debris – check only if no others present	2	0 = 0 1 = .1 2 = .25 3-4 = .5 5-7 = .75 >7 = 1.0	0.25	sb-F v-I n-E at-H
  				
Land cover in the vicinity of the site in the 1850's was wooded?	yes	1 = Yes 0 = No	1	n-K pp-H at-R sb-S v-S

SHEET FOR AUTOMATIC CALCULATION OF FUNCTION SCORES - revised June 2008***Slope or Flats subclass***

Site Name: Estates at Leahy Park - wetland 3 (slope class)

Date: 9/14/2021

It is recommended to do a "Save As" from this blank spreadsheet for each use, assigning different file names. This will help reduce the chance of accidentally confusing new data with previously entered data.

For reference, the function(s) addressed by each indicator are noted in column E. Codes are shown below next to the function names. The capital letter in the code (e.g., sp- B) in column E refers to the code for the indicator in the published Volume IA.

HFR= scaled to highest functioning site of this subclass found by DSL; **LAR**= scaled to least-altered site of this subclass found by DSL Scores greater than 1 indicate the capacity of the function at the site you assessed may be greater than in all sites of this subclass assessed by the DSL team during model calibration.

Data **must** be entered for every indicator, unless the scale block for this subclass is shaded. Each value in column D must be less than or equal to 1.

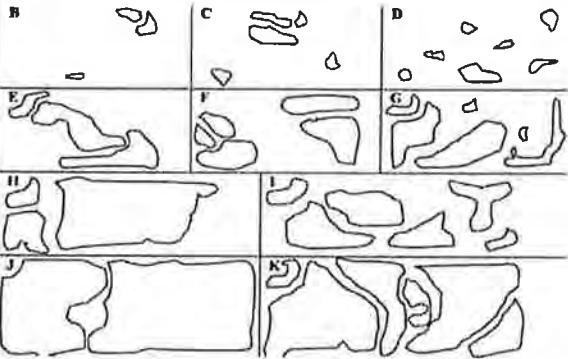
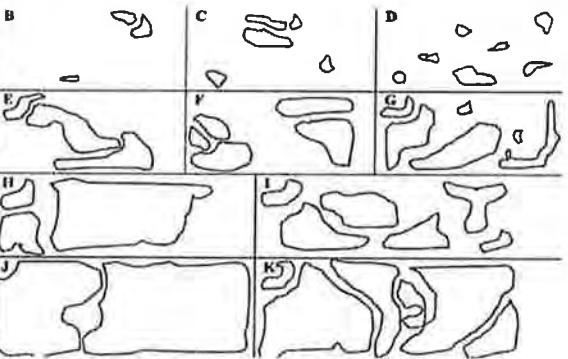
Function:	Calculated Function	
	Capacity for SF sites if HFR:	if LAR:
Water Storage & Delay (ws)	0.40	0.89
Sediment Stabilization & Phosphorus Retention (sp)	0.63	0.67
Nitrogen Removal (n)	0.76	0.89
Primary Production (pp)	0.70	0.70
Invertebrate Habitat Support (i)	0.55	0.55
Amphibian & Turtle Habitat (at)	0.74	0.98
Breeding Waterbird Support (bw)	0.00	0.00
Wintering & Migrating Waterbird Support (ww)	0.42	0.48
Songbird Habitat Support (sb)	0.55	0.85
Support of Characteristic Vegetation (v)	0.85	0.89

Note 1: Models and scores for ws, sp, n, and pp intentionally do not account for the **area** of the wetland, an especially important factor for these functions.

Note 2: This method should be applied to an entire contiguous wetland, not just to the portion affected directly by a planned alteration or restoration.

Indicator	Raw Datum	Scale for SF sites	Scaled Datum	Function
Presence of permanent surface water (water year-round during most years)? (p. 82)	absent	absent = 0 present = 1.0	0	sb-P rf-X
Percent of permanent zone that is open water (i.e., lacking emergent and underwater plants) (p. 79) (Answer "0" if no permanent zone is present)	0	100 = .1 80-99 = .8 60-80 = 1.0 40-60 = .8 20-40 = .4 0-20 = 2	0.2	at-M
Percent of site that is inundated only seasonally (i.e., watermarks, moss lines, debris lines, etc.) (p. 81)	50	none = 0 1-10 = .1 10-25 = .6 25-50 = .8 > 50 = 1.0	0.8	i-B n-A ws-A
		none = 0 1-20 = .5 20-40 = .7 40-60 = .8 60-80 = .9 >80 = 1.0	0.8	ww-A
At least 0.5 acre of surface water persists until at least July 1 and water is mostly wider than 10 ft?	no	Yes = 1 No = 0	0	bw-X

Predominant water depth during biennial low water (p. 82)	0	0" = 0 1-2" = .6 2-24" = 1.0 2-6 ft = .8 ≥6 ft = .6 0" = .1 1-2" = 1.0 2-24" = .8 ≥24" = .2	0	bw-D i-D
Percent of site occupied by the most extensive depth category at this site during biennial low water. (p. 81). (Delimit the low water zone first, then break into these depth categories, then identify the category that predominates horizontally).	100% is 0 inches	100" = 0 80-100 = .1 50-80 = .4 30-50 = .8 <30" = 1.0	0	bw-B
(Possible categories are: 0 inches; 1-2 inches; 2-24 inches; ≥6 feet; < 6 feet)				
Difference between the predominating biennial high and low water levels (p. 71) 0) = No change 1) = Difference of 1 class 2) = Difference of 2 classes 3) = Difference of 3 classes 4) = Difference of 4 classes Class 1 = 0 inches Class 2 = 1-2 inches Class 3 = 2-24 inches Class 4 = 2-6 feet Class 5 = ≥ 6 feet	2 (from 0-8")	0) = 0 1) = .3 2) = .5 3) = .8 4) = 1.0 0) = 0 1) = .25 2) = .5 3) = .75 4) = 1.0	0.5 0.5	n-B at-E bw-E ww-F
Predominant vertical increase in surface water level (ft) in most of the seasonal zone (i.e., water marks, moss lines, debris lines, etc. Look at the highest point for 2 year flood and measure the difference from biennial low)	8" or 0.66	0" = 0 .1 - .4 = .25 .5 - 1.0 = .5 1 - 2 = .75 ≥2 = 1.0	0.5	ws-B
Number of depth categories during biennial high water. (p. 77) Categories are: — 1 - 2 inches — 2 - 24 inches — 2 - 6 ft — > 6 ft	2	1 = 0 2 = .3 3 = .6 4 = 1.0 1 = .1 2 = .3 3 = .6 4 = 1.0	0.3 0.3	bw-C ww-E

<p>Percent & distribution of pools during biennial high water. (p. 80)</p> <p>(Note: if site is > 1 acre, select the condition that predominates in 1 acre sub-units of the site.)</p> <p>A = None</p> 	<p>A = 0 B = .6 C = .65 D = .7 E,F = .75 K = .8 H = .85 I = .9 J = .95 G = 1.0</p>	<p>0</p>	<p>sp-C ww-D i-E, at-A</p>	
<p>Percent & distribution of pools during biennial low water. (p. 80)</p> <p>(Note: if site is > 1 acre, select the condition that predominates in 1 acre sub-units of the site.)</p> <p>A = None</p> 	<p>A = 0 B = .6 C = .65 D = .7 E,F = .75 J = .8 H = .85 I = .9 K = .95 G = 1.0</p>	<p>0</p>	<p>bw-A, pp-E, n-1</p>	
<p>Percent of the site occupied by hummocks (p. 74, 75)</p>	<p>none</p>	<p>none = 0 1-10 = .6 10-90 = .8 >90 = 1.0</p>	<p>0</p>	<p>at-B ww-C sb-M sp-B pp-C n-G i-F</p>

Maximum annual extent of vernal pools/ shorebird scrapes and mudflats: (p. 76) A = none B = 1 – 100 sq. ft. C = 100-1000 sq. ft. D = 1000 – 10,000 sq. ft. E = >10,000 sq. ft.	A	A = 0 B = .6 C = .7 D = .8 E = 1.0	0	ww-B
Must meet ALL of the following: a) herbs are generally < 4" and comprise < 80% ground cover during winter or early spring b) topography is basically flat c) inundated to a depth of < 6" for 2 or more continuous weeks d) never shaded by trees, shrubs, or buildings				
Presence of logs or boulders that extend above the surface of permanent water (p. 84)	absent	absent = 0 present = 1.0	0	at-G
Predominant soil texture: (p 83) GC= gravel or cobble SA=sand, sandy loam, or loamy sand L= loam, silty loam, gravelly loam C= clay, sandy clay, silty clay, clay loam, silty clay loam O= organic particles<1mm	C	GC =.1 SA =.2 L =.8 C/O = 1.0	1	sp-D
<u>Guidance:</u> 1. Soil remains in a ball when squeezed YES...Go to 3; NO ...Go to 2 2. > 50% of the particles (by weight) are > 1 mm YES..."GC"; NO ..."SA" 3. Squeezed soil forms an even ribbon YES...Go to 4; NO ..."SA" 4. Soil ribbon extended > 1" without breaking YES..."C/O"; NO ...Go to 5 5. Soils feels very gritty YES..."SA"; NO..."L"				
Presence of some mottling and/or other features that indicate oxygen deficits, or, permanent water is present	present	absent = 0 present = 1.0	1	n-X
Mapped soil series is hydric (not simply a hydric inclusion). See county soil map and p. 75.	yes 16C	1= yes 0= no	1	v-C at-D ww-G i-I
Percent of site that was constructed on former uplands (non-hydric soil) (p. 81): 6) = recent, >90% of site 5) = recent, 10-90% of site 4) = recent, 1-10% of site 3) = >5 years ago, >90% of site 2) = >5 years ago, 10-90% of site 1) = >5 years ago, 1-10% of site 0) = none	0	6) = 0 5) = .1 4) = .2 3) = .3 2) = .4 1) = .5 0) = 1.0	1	i-J at-K v-K n-D

Tally the percent of surrounding land cover (exclude the site itself) as exists during a typical May. Answer each row independently. They do not necessarily sum to 100%.

within 200 ft of the site boundary:

a. % Water, wetland =	5
b. % Grassland, water, wetland =	7
c. % Grassland, row crops =	0
d. % Wooded =	60
e. % Natural (not lawn, crops, paved, building)=	67

within 1000 ft:

f. % Water, wetland =	2
g. % Grassland, water, wetland =	2
h. % Grassland, row crops =	1
i. % Wooded =	40
j. % Natural =	42

within 5,280 ft:

k. % Water, wetland =	2
l. % Grassland, row crops =	5
m. % Wooded =	15

In column D, enter the scaled value for the number in column B. (= a), above)	5	0 = 0 1-10 = .4 10-20 = .8 >20 = 1.0	0.4	bw-I ww-I
In column D, enter the scaled value for the number in column B. (=b), above)	7	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.1	sb-N
In column D, enter the scaled value for the number in column B. (=c), above)	0	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0	ww-K
In column D, enter the scaled value for the number in column B. (=d), above)	60	0 = 0 1-10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.8	sb-I
In column D, enter the scaled value for the number in column B. (=e), above)	67	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0.7	i-L at-O v-R
In column D, enter the scaled value for the number in column B. =(a+f+k)/3, above)	3	none = 0 1 - 10 = .4 10-20 = .8 >20 = 1.0	0.4	ww-H bw-J

In column D, enter the scaled value for the number in column B. (= (c+h+l)/3), above)	2	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0	ww-J
In column D, enter the scaled value for the number in column B. (= (d+i+m)/3), above)	38.3333333	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.6	sb-J
In column D, enter the scaled value for the number in column B. (= (e+j)/2), above)	54.5	<10 = 0 10-20 = .1 20-40 = .3 40-80 = .5 80-90 = .7 90-100 = 1.0	0.5	bw-K
In column D, enter the scaled value for the number in column B. (= (b+g)/2), above)	4.5	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.1	sb-O
Percent of land cover within 200 ft (but only in the contributing watershed) that is "natural" – that is, NOT cropland, lawns, pavement, or buildings (p. 79)	50	<10 = 0 10-20 = .1 20-40 = .3 40-90 = .5 90-100 = 1.0	0.5	pp-F
		<10 = 0 10-20 = .1 20-40 = .3 40-90 = .5 90-99 = .9 100 = 1.0	0.5	i-M v-Q
Percent woodland divided by percent grassland-crops within 200 ft of the site (p. 71)	60/0	<.1 = .1 0.1-0.8 = .6 0.8-1.2 = 1.0 1.2-2.0 = .6 >2.0 = .1	0.1	at-P
Distance (ft) to nearest busy road (p. 71) This includes a) any road or parking lot in a develop area that contains >4 buildings per acre, b) any road with a maximum traffic rate of > 6 vehicles per minute, during an average day during the summer	180	<100 = 0 100-300 = .3 300-600 = .5 600-1200 = .7 1200-2400 = .8 2400-4800 = .9 >4800 = 1.0	0.3	bw-G at-N v-P sb-R

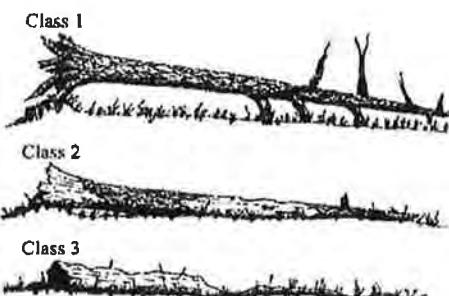
Note: The following 5 rows must sum to 100%. The number of visitors is immaterial.

Percent of site including 100-ft buffer that is visited 365 days a year or almost so =	10
Percent of site including 100-ft buffer that is visited more than 80 days a year (>20% of year), but less than daily =	10
Percent of site including 100-ft buffer that is visited 20-80 days a year (e.g., about once a week) =	20
Percent of site including 100-ft buffer that is visited just a few days a year =	55
Percent of site including 100-ft buffer that is almost never visited =	5

Scale the calculated value in the box on the right (sum of the above 5 rows) and enter the scaled value in column D (p. 72)	335	100-200 = 0 200-300 = .3 300-400 = .7 400-500 = 1.0	0.7	bw-H v-O sb-Q
Percent of site affected by soil leveling (i.e., portion previously leveled by equipment for farming)	0	100 = .1 10-99 = .3 1-10 = .6 0 = 1.0	1	at-C i-G pp-D sp-F n-H
Percent of site currently affected by soil compaction: (i.e., by equipment, vehicles, livestock, humans, fill) 6 = recent, at >90% of site 5 = recent, at 10-90% of site 4 = recent, at 1-10% of site 3 = >5 years ago, >90% of site 2 = >5 years ago, 10-90% of site 1 = >5 years ago, 1-10% of site 0 = none	0	5/6) = .1 4) = .2 3) = .4 2) = .6 1) = .8 0) = 1.0	1	sp-G v-M sb-K
Percent of site's vegetation that is mowed or subject to extreme grazing at least annually (p. 81)	none	>90 = 0 10-90 = .2 1-10 = .4 none = 1.0	1	sb-L v-N
Most of site is burned, or harvested for hay or timber, at least biennially? (p. 72)	none	no = 0 yes = 1.0	0	n-J
Percent of site currently affected by soil mixing (plowing, excavation, bulldozing, etc.): (p. 81) 6 = recent, at >90% of site 5 = recent, at 10-90% of site 4 = recent, at 1-10% of site 3 = >5 years ago, >90% of site 2 = >5 years ago, 10-90% of site 1 = >5 years ago, 1-10% of site 0 = none	1	5 or 6 = .1 4 = .2 3 = .4 2 = .6 1 = .8 0 = 1.0	0.8	at-f i-H v-L pp-A n-C sp-E
Percent of the site that is vegetated (including submersed aquatics) (p. 82)	65	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.8	sb-A v-A

Percent of site with woody vegetation (p. 82)	75	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.8	sb-b
Percent of seasonal zone that is bare during most of the dry season. (i.e., devoid of vegetation, except trees) (Answer "0" if no seasonal zone)	10	>80 = 0 60-80 = .2 40-60 = .4 20-40 = .6 1-20 = .8 0 = 1.0	0.8	pp-G sp-H
Percent of site that is inundated permanently and contains emergent, floating, or submersed plants (p. 72)	0	0 = 0 1-10 = .9 >10 = 1.0 0 = 0 1-10 = .4 10-30 = .8 30-60 = 1.0 60-90 = .9 >90 = .6	0	i-A bw-F
Percent cover of herbs within the seasonal zone (p. 72)	60	0 = 0 1-30 = .1 30-50 = .6 50-70 = .75 70-100 = 1.0	0.75	at-L
Percent of whole site that has closed canopy (p. 80)	90	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	1	sb-C
Percent understory shrub & vine cover beneath the drip line of trees (p. 82) (Answer "0" if no wooded areas)	50	<10 = .1 10-20 = .2 20-40 = .4 40-60 = .6 60-80 = .8 >80 = 1.0	0.6	sb-D

<p>Number & distribution of vegetation forms --- herbs, shrubs, trees. If only one form, answer "A". To count, the patch must comprise >0.5 acre or >5% of vegetated area. See p. 77 for enlargement of diagram.</p> <table border="1"> <tr> <td></td><td>Veg forms are mostly in discrete quite homogeneous zones or patches:</td><td>Zones/patches are recognizable but not homogeneous, and are:</td><td>Forms are highly intermixed; zones are mostly not recognizable; no patch >20% of site</td></tr> <tr> <td rowspan="2">Two forms ...</td><td>B 1. of about equal areas</td><td>C 1. of about equal areas</td><td>D</td></tr> <tr> <td>B 2. of unequal areas</td><td>C 2. of unequal areas</td><td></td></tr> <tr> <td rowspan="2">All three forms ...</td><td>E 1. of about equal areas</td><td>F 1. of about equal areas</td><td>G</td></tr> <tr> <td>E 2. of unequal areas</td><td>F 2. of unequal areas</td><td></td></tr> </table>		Veg forms are mostly in discrete quite homogeneous zones or patches:	Zones/patches are recognizable but not homogeneous, and are:	Forms are highly intermixed; zones are mostly not recognizable; no patch >20% of site	Two forms ...	B 1. of about equal areas	C 1. of about equal areas	D	B 2. of unequal areas	C 2. of unequal areas		All three forms ...	E 1. of about equal areas	F 1. of about equal areas	G	E 2. of unequal areas	F 2. of unequal areas			E2 A = 0 B2 = .60 C2 = .65 B1 = .70 C1,D = .75 E2 = .80 F2 = .85 E1 = .90 F1 = .95 G = 1.0	0.8	pp-B v-B at-J i-K sb-H
	Veg forms are mostly in discrete quite homogeneous zones or patches:	Zones/patches are recognizable but not homogeneous, and are:	Forms are highly intermixed; zones are mostly not recognizable; no patch >20% of site																			
Two forms ...	B 1. of about equal areas	C 1. of about equal areas	D																			
	B 2. of unequal areas	C 2. of unequal areas																				
All three forms ...	E 1. of about equal areas	F 1. of about equal areas	G																			
	E 2. of unequal areas	F 2. of unequal areas																				
Number of woody species (p. 82)	9	unwooded= 0 1-2 = .1 3-4 = .25 5-6 = .5 7-9 = .75 10-18 = .9 >18 = 1.0	0.75	sb-E																		
Number of native woody species(p. 78)	5	0 = 0 1 = .1 2-3 = .25 4-5 = .5 6-9 = .75 10-13 = .9 >14 = 1.0	0.5	v-F																		
Percent of woody species list consisting of species that are native (p. 78)	55	0 = 0 1-57 = .1 58-66 = .25 67-74 = .5 75-79 = .75 80-99 = .9 100 = 1.0	0.1	v-g																		
Percent of woody cover within stratum that is comprised of non-native species (p. 82) (Use the greater of the tree, understory shrub, or open shrub stratum's percent)	50	100 = 0 80-99 = .1 30-79 = .25 10-29 = .5 5-9 = .75 1-4 = .9 0 = 1.0	0.25	v-H																		
Spatial predominance of non-native herbs (p. 84) A = Non-natives predominate B = Cannot determine (about equal) C = Natives predominate	C	A = 0 B = .5 C = 1.0	1	v-D																		

Percent of herb species list comprised of species that are non-native (p. 80)	20	100 = 0 80-99 = .1 67-79 = .25 60-66 = .5 25-59 = .75 1-24 = .9 0 = 1.0	0.9	v-E
Average diameter (inches) of the 3 largest trees. (p. 71)	23	none = 0 1-5 = .1 6-9 = .25 10-17 = .5 18-25 = .75 26-35 = .9 >35 = 1.0	0.9	sb-G v-J at-I n-F
Number of deadwood types. Potentially 12 types:(p. 77) <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, 4-8" <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, 8-20" <input type="checkbox"/> Class 1: freshly fallen, have bark & branches, >20" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: 4-8" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: 8-20" <input type="checkbox"/> Class 2: mildly rotted and mostly on ground: >20" <input type="checkbox"/> Class 3: well rotted, losing shape: 4-8" <input type="checkbox"/> Class 3: well rotted, losing shape: 8-20" <input type="checkbox"/> Class 3: well rotted, losing shape: >20" <input type="checkbox"/> Standing stumps/snags: 4-8" <input type="checkbox"/> Standing stumps/snags: 8-20" <input type="checkbox"/> Standing stumps/snags: >20" <input type="checkbox"/> Artificial debris – check only if no others present	2	0 = 0 1 = .1 2 = .25 3-4 = .5 5-7 = .75 >7 = 1.0	0.25	sb-F v-I n-E at-H
				
Land cover in the vicinity of the site in the 1850's was wooded?	yes	1 = Yes 0 = No	1	n-K pp-H at-R sb-S v-S



Environmental Science & Assessment, LLC

TECHNICAL MEMORANDUM

DATE: September 9, 2021

TO: Washington County Planning

CC: Wayne Hayson PDG

FROM: Kim Sanderford
Jack Dalton

RE: Proposed Development – Tax Lots # 1N135CB 02300, 02400, 00400
Washington County

Environmental Science & Assessment, LLC (ES&A) was contracted by the applicant to conduct a Significant Natural Resource (SNR) assessment for a proposed residential subdivision within a 4.76-acre project area spanning the southern ends of three parcels at 10345 NW Leahy Road, 10405 NW Leahy Road, and the parcel due west of these lots in Washington County, Oregon (Tax Lots # 1N135CB 02300, 02400, 00400 respectively) (Figure 1). The study area is in the southwest corner of Township 1 north, Range 1 West, Section 35.

This assessment was conducted for the proposed Estates at Leahy Park residential development to address Section 422 of the Washington County Community Development Code (CDC) where it pertains to Upland Wildlife Habitat SNR. The Washington County Cedar Hills Community Plan maps "Wildlife Habitat" on the eastern most lot (TL 2300), with a "Water Area and Wetlands & Fish and Wildlife Habitat" mapped passing through all three lots (Figure 3). Additionally, the Metro Title 13 inventory maps Riparian Habitat at the southern end of all three lots, with Class B Upland Habitat mapped in adjacent wooded areas north of the Riparian corridor.

Field data was collected to assess the SNR habitat (Appendix D, E), and wetland determination data was collected at four locations to document onsite wetlands (Appendix C). Two wetlands on the eastern parcel (TL 2300) were delineated in 2019, with boundaries concurred on October 9, 2019 (WD 2019-0503). The mixed forest habitat boundary on site was field verified. Adjacent and surrounding areas were investigated to determine adjacency and potential indirect impacts to off-site habitat.

The following appendices are included with this report:

Appendix A: Figures

Appendix B: Site Photographs

Appendix C: Wetland Determination Data Forms

Appendix D: Vegetated Plot Data Forms

Appendix E: Upland Habitat Assessment Data Forms

METHODOLOGY

Two levels of investigation were used to evaluate the presence of SNRs. The first level included a review of existing available background data and maps. The second level consisted of an onsite evaluation.

Reviewed background data included the following information:

- Aerial Photography and Topography (Metro Data Resource Center's MetroMap, 2019);
- Washington County Comprehensive Plan Cedar Hills Community Plan (2016)
- Web Soil Survey of Washington County, Oregon (Natural Resource Conservation Service [NRCS], 2019).
- National Wetland Inventory (NWI), US Fish and Wildlife Service, 2019

ES&A staff conducted the onsite SNR assessment on December 29, 2020. Wetland areas on the parcel not already concurred were delineated using the methodology provided in the Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*, (U.S. Army Corps of Engineers, 2010).

Existing plant communities and wildlife habitat were evaluated based on the Washington County Habitat Assessment Guidelines. Clean Water Services (CWS) methods for evaluating the Vegetated Corridor condition were used for Riparian Areas. An estimate of full leaf-out condition was used due to the season the field verification took place.

LANDSCAPE SETTING AND SITE TOPOGRAPHY

The project study area is bordered on the south by NW Leahy Road and on the north, east and west by low density single family residential area (Figure 1). The central parcel has a single home at the northern end (outside of the study area), with driveway access running north through the western parcel from NW Leahy Road. The eastern parcel has a large residential trailer near the center of the lot with several ancillary structures surrounding it (Figure 4, Photo 3). Most of the two eastern parcels are undeveloped, while most of the western parcel is landscaped with a lawn area and ornamental trees surrounding the driveway (Figure 2). Area directly surrounding the home, trailer, and out buildings is cleared of native understory with several large trees providing canopy cover.

The undeveloped portion of site is a mature forest with generally >50% aerial cover of Douglas Fir (*Pseudotsuga menziesii*), within upland habitat areas and >50% aerial cover of black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), Oregon ash (*Fraxinus latifolia*), and western red cedar (*Thuja plicata*) within the riparian corridor. Other mature trees in the canopy are Bigleaf Maple (*Acer macrophyllum*), Pacific Madrone (*Arbutus menziesii*), and red alder (*Alnus rubra*) (Photo 1). The understory has generally moderate diversity of native shrubs, with the areas closest to the residence and the northern property boundary of the two eastern parcels with a higher percentage of non-native invasives (Photos 2-3, Appendix D.)

An unnamed perennial tributary to Johnson Creek flows from east to west through the southern end of all three parcels. The stream is approximately 7-12-feet wide at the

Ordinary High Water Line (OHWL) with several wetland areas less than 5-feet wide above the perennial flow and below the OHWL. Oregon Department of Fish and Wildlife (ODFW) maps this stream as Coastal Cutthroat Trout habitat. Though ODFW does not map any priority barriers to fish passage, the driveway culvert is likely a barrier and there is a downstream 29" by 50" box culvert that conveys the stream under NW Leahy Road just southwest of the southwest site corner mapped by CWS.

Site topography slopes down from north to south at approximately 10% towards the creek, with a small area south of the creek sloping back up towards NW Leahy Road.

Soil survey mapping shows 2 soil types onsite. There is a band of hydric Delena silt loam, 3 to 12 percent slopes, running through the southern end of all three parcels corresponding to the onsite stream corridor (map unit 16C, rating 90). The rest of the site is mapped as Cornelius and Kinton silt loams, with 12 to 20 percent slopes mapped adjacent to the north and south of the hydric soil band, and the remainder of the site with 2 to 7 percent or 7 to 12 percent slopes (map units 11D, 11C, and 11B, rating 4). (NRCS, Web Soil Survey, 2019).

NOTABLE ALTERATIONS OR CONDITIONS

No notable alterations have occurred onsite since 1990, the earliest aerial image reviewed. Notably, the driveway extending from NW Leahy Road has been in its current alignment since that time.

MAPPED SNR AREAS

The Washington County *Cedar Hills Community Plan* maps Wildlife Habitat on most of the eastern parcel corresponding to onsite canopy cover and does not map any Wildlife habitat on the western two parcels. The plan maps Water Area and Wetlands and Fish and Wildlife Habitat in a corridor passing east-west through the center of the three parcels, however, this mapping is assumed to correspond to the stream running through the site, which flows through the southern end of these parcels (Figure 3).

FIELD VERIFICATION OF UPLAND/WILDLIFE HABITAT

Both upland wildlife habitat and waters-related fish and wildlife habitat were field verified onsite. The upland wildlife habitat boundary was verified using the methodology outlined in Washington County Habitat Assessment Guidelines (Washington County, 2020). A combination of aerial imagery (important to aid in leaf-on canopy cover estimate due to winter field work), site observations, and spherical densiometer measurements were used. Garden areas associated with the home on the western parcel which were within the outer drip-line of the canopy were included.

Waters-related fish and wildlife habitat was field verified using the methodology for delineating water areas and wetlands described in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual and companion Regional Supplement for Western Mountains, valleys, and Coast Region (Version 2.0). Because the proposed project plans to fill several small wetlands and this area is within the jurisdiction of CWS, both a wetland delineation and CWS Tier II Site Assessment will also be conducted. Concurred wetland delineation WD2019-0503 delineates wetlands and waters on the eastern most parcel.

HABITAT ASSESSMENT

Water Related Fish and Wildlife Habitat

The CWS Site Assessment and wetland delineation addressing water-related fish and wildlife habitat will be provided to Washington County upon their approval and concurrence. CWS VC mapping and data is provided in Appendix D.

Upland Wildlife Habitat

Four Upland Habitat Assessment (HA) plots were recorded to document the upland wildlife habitat. The Wildlife Habitat area is made up of good and marginal condition forest based on native aerial canopy cover, vegetative cover, and the presence of invasive/noxious understory species (Appendix E).

The upland forested area on the two eastern parcels and some of the western parcel is in good condition and has a mature native canopy cover of mostly Douglas fir and big leaf maple in the northern half, which gives way to a canopy cover of mostly black cottonwood and western red cedar further south nearer to the stream but outside of the 50-foot CWS buffer. Some small-caliper madrone (*Arbutus menziesii*) trees were recorded within the northeastern most portion of the site (Photo 1), as well as within offsite area to the north. The understory in most of the eastern two parcels is comprised of English holly (*Ilex aquifolium*), western beaked hazelnut (*Corylus cornuta*), vine maple (*Acer circinatum*), laurel (*Prunus laurocerasus*), and Himalayan blackberry (*Rubus armeniacus*) (Photo 5-6). Most of the herbaceous stratum in these eastern parcels consists of bare ground, English ivy (*Hedera helix*), and swordfern (*Polystichum munitum*) throughout (Figure 4, Appendix E).

The upland forested area on most of the western parcel is in marginal condition because despite some mature canopy cover from native trees, most of the area is maintained as a yard with the understory containing ornamental shrubs. A large laurel hedge, English holly, and boxwood (*Buxus sempervirens*) make up the understory surrounding the home, with the remainder of the understory mostly cleared for raised planters, storage, the driveway, and other residential yard uses, mostly outside of the study area but creating 1,160 square feet of marginal condition upland forest within the part of the western lot within the study area (Figure 4, HA-4).

Because the upland forested area onsite is adjacent to the stream corridor, all HA plots met the additional attribute of "contiguous with or abutting a riparian corridor." Three of four plots also met for at least 25% of trees having 24" DBH (HA-1 to HA-3), and HA-1 met a third additional attribute with the presence of madrone trees both on and offsite in this area. Connectivity to the stream corridor east of the site greatly increases the value associated with this upland habitat, however, proximity to NW Leahy Road and off-site surrounding development limits this value overall. These three parcels represent the western most end of a contiguous corridor of closed-canopy habitat along this stream that extends east into Forest Park. The off-site forest habitat is fragmented by several major road crossings, which likely limit wildlife use of this corridor (Figure 4, Appendix E).

Proximity to extensive perennial cover (Forest Park), several dead snags in varying levels of decay (Photos 2, 4), two forested wetland areas and a stream within the upland wildlife SNR and limited human visitation (despite proximity to major roads) are all

considered to increase the overall habitat quality of the onsite upland wildlife SNR. The small habitat acreage, high percent of non-native plants in the understory, proximity to major roads, noise and light pollution from surrounding subdivisions, and limited biodiversity (extrapolated from HA and VC plot data) are all considered to decrease the overall habitat quality of the onsite upland wildlife SNR. Within the project site, despite the factors lowering the habitat quality, most of site was mapped as good value habitat with a small area of marginal in the northwest corner (Figure 4).

PROPOSED DEVELOPMENT

The proposed development is a 15-lot residential subdivision with access from a private street that will extend east from the existing driveway. A 6,176-SF storm facility is proposed east of and adjacent to the existing driveway and north of the CWS VC associated with the stream corridor. An 62,894-SF open space tract (Tract A) will be located between planned lots 11-15 and NW Leahy Road, just east of the storm facility. Overall Tract A is a 170-foot wide rectangular corridor of stream, CWS VC, and preserved upland SNR making up the bottom one-third of this development (Figure 5).

SNR IMPACT ASSESSMENT

Total field verified upland wildlife habitat SNR within the project area is 110,161-SF (2.53-acres). Of this, 15%, or 16,524-SF, will be preserved per Washington County Community Development Code 422-5.3 A. Option 2. Table 1 outlines the proposed SNR impacts and current condition within those areas:

Table 1: SNR Habitat Condition Summary

Area	Habitat Condition	Proposed Impact (SF)	Proposed Preservation (SF)
Upland Wildlife Habitat	Good	92,477	16,524
Upland Wildlife Habitat	Marginal	1,160	0
Totals:		93,637	16,524

A combination of good and marginal condition upland wildlife SNR will be impacted, but the entire preservation area consists of good condition upland wildlife SNR. Option 2 was selected because this site is already significantly encumbered by waters and wetlands (8,950-SF/0.21-ac), as well as the CWS VC associated with them (67,467-SF/1.6-ac), so reducing total preservation area by creating a contiguous corridor allows for economically feasible development as envisioned in the Cedar Hills-Cedar Mill Community Plan for this area.

Impacts to wetlands and waters SNR areas are discussed in the CWS Site Assessment and future wetland fill permit to be submitted to state and federal regulatory agencies.

SNR MITIGATION

To mitigate for the 93,637-SF of proposed upland wildlife habitat impacts, the preservation area will be enhanced with invasive plant removal, and that invasive plant density then replaced with native plantings to reach a final desired density of 2,400 stems/acre. Despite removal of 85% of the upland wildlife habitat within the project footprint, the preservation area is seen as an opportunity to enhance and make more resilient the upland habitat areas that will remain and provide a higher degree of

protection to the wetlands, waters, and riparian habitat SNR. Because significant stands of Douglas fir and bigleaf maple already exist, mitigation plantings that are more drought and heat tolerant are proposed to ensure the long-term resilience of this forested area. Table 2 outlines the proposed plantings within the preservation area.

Table 2: Recommended Plant List for Upland Wildlife SNR Preservation Areas

Common Name	Scientific Name	Plant Form/Size ¹	Plant Spacing (ft on center)	Total Number of plants ²
Upland Wildlife SNR Preservation Area: 16,524 SF				
Shrubs				
Serviceberry	<i>Amelanchier alnifolia</i>	1 gal/18"	single	25
Chinquapin	<i>Chrysolepis chrysophylla</i>	1 gal/24"	single	50
Salal	<i>Gaultheria shallon</i>	1 gal/12"	clusters 3-5	50
Oceanspray	<i>Holodiscus discolor</i>	1 gal/18"	single	25
Swordfern	<i>Polystichum munitum</i>	1 gal/24"	clusters 3-5	24
Red-flowering currant	<i>Ribes sanguineum</i>	1 gal/18"	clusters 3-5	50
Nootka Rose	<i>Rosa nutkana</i>	1 gal/18"	single	50
Blue elderberry	<i>Sambucus cerulea</i>	1 gal/18"	single	50
Trees				
Pacific Madrone	<i>Arbutus menziesii</i>	1 gal/18"	single	40
Ponderosa Pine	<i>Pinus ponderosa</i>	1 gal/18"	single	40
Bitter cherry	<i>Prunus emarginata</i>	1 gal/18"	single	40
TOTAL				444

NOTES: ¹ Substitutes for plant form (e.g. bare root) and species may be used based on availability.

² Individual species quantities to be determined in landscape, values used presume 1,200 stems existing

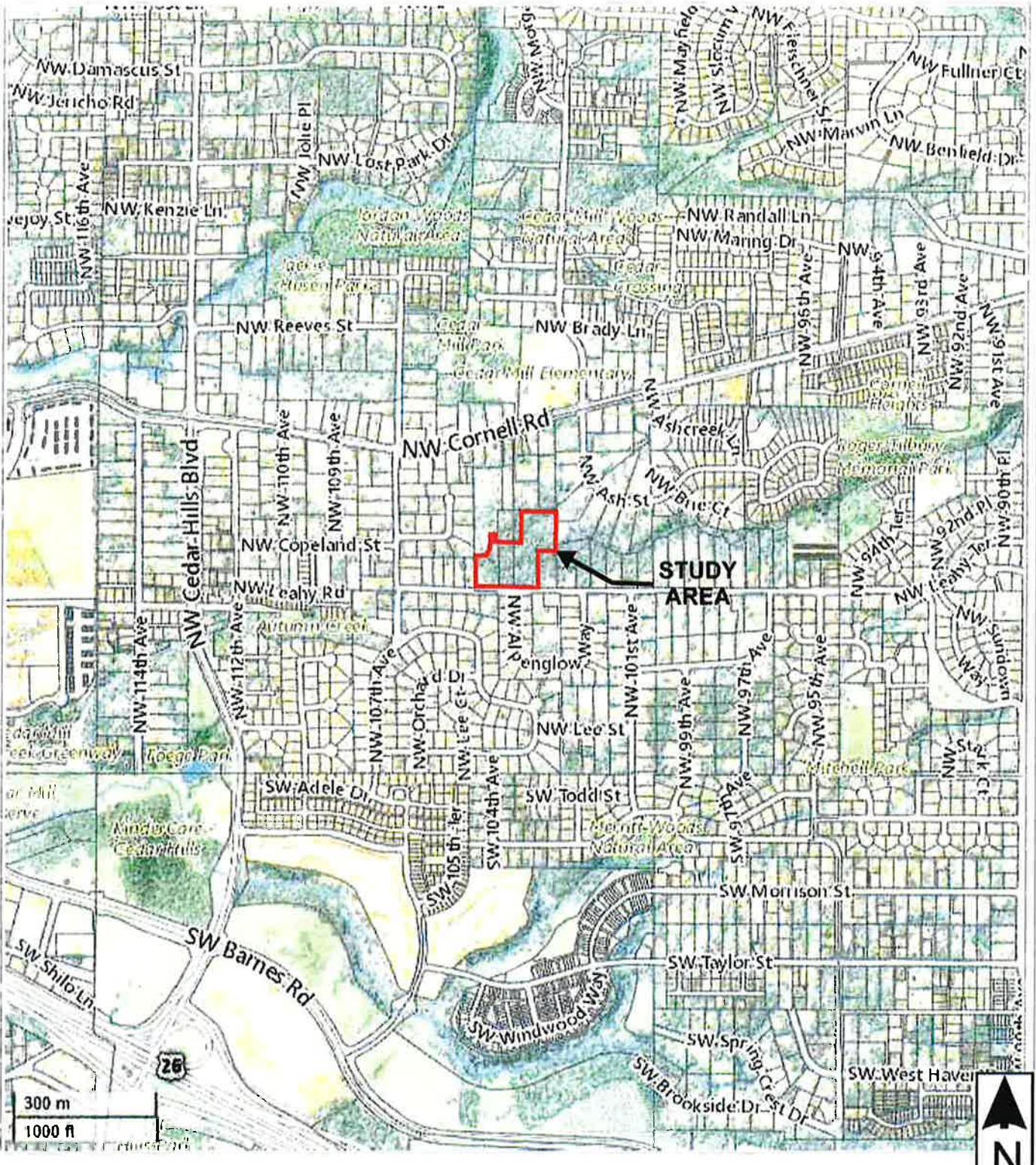
MONITORING AND MAINTENANCE

To ensure native plantings in the preservation area have successfully established, a monitoring and maintenance report will be provided to the county per Washington County Community Development Code 422-5.3 C (6). If the report determines that less than 75% of the installed plantings have survived, appropriate replacement plantings to increase survival will be installed.

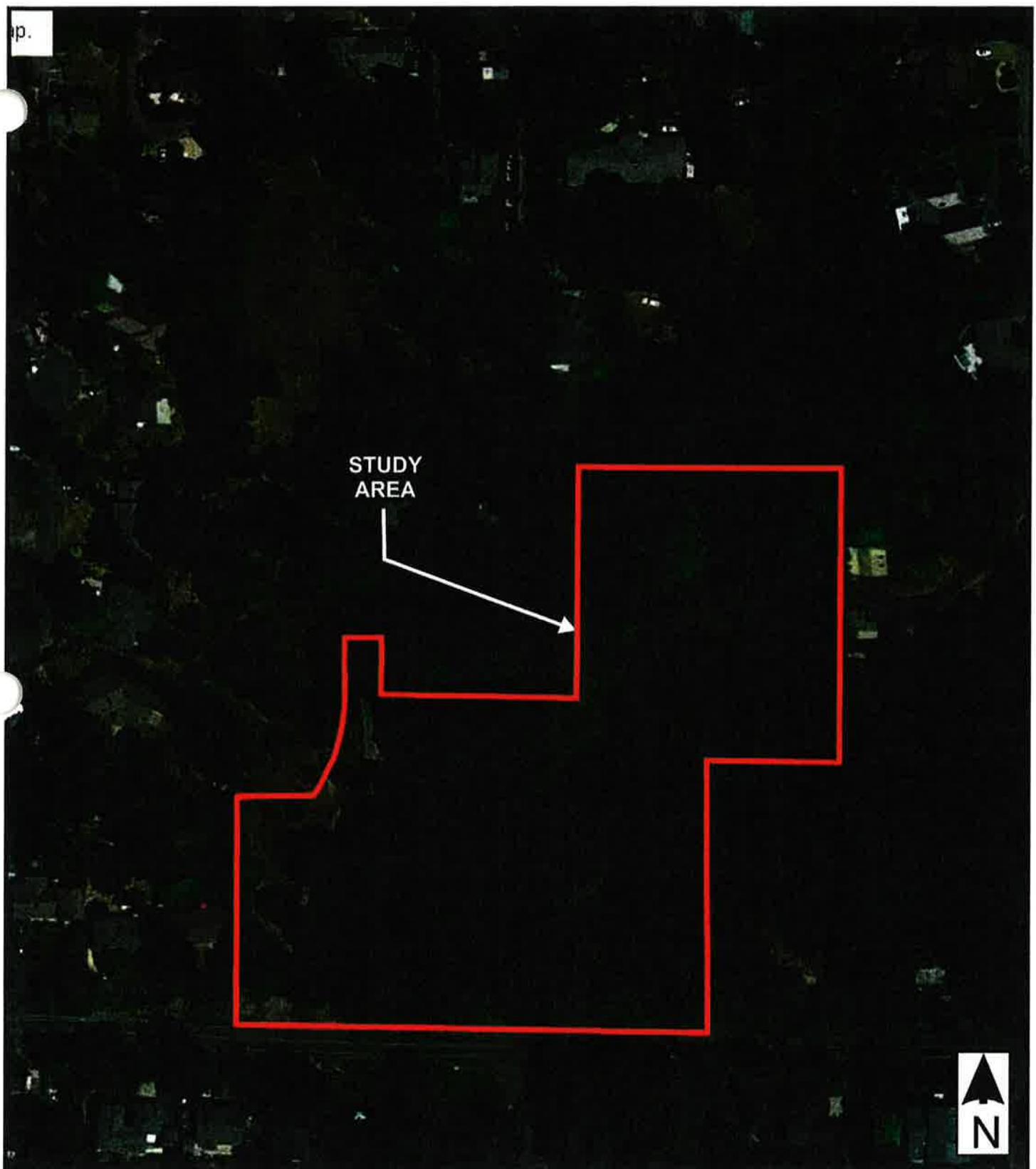
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https://library.municode.com/or/washington_county/codes/community_development_code?nodeId=ARTIVDEST_422SINARE
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APPENDIX A: FIGURES



Source: Metro Data Resource Center. <http://gis.oregonmetro.gov/metromap/>



Source: Google Earth Pro

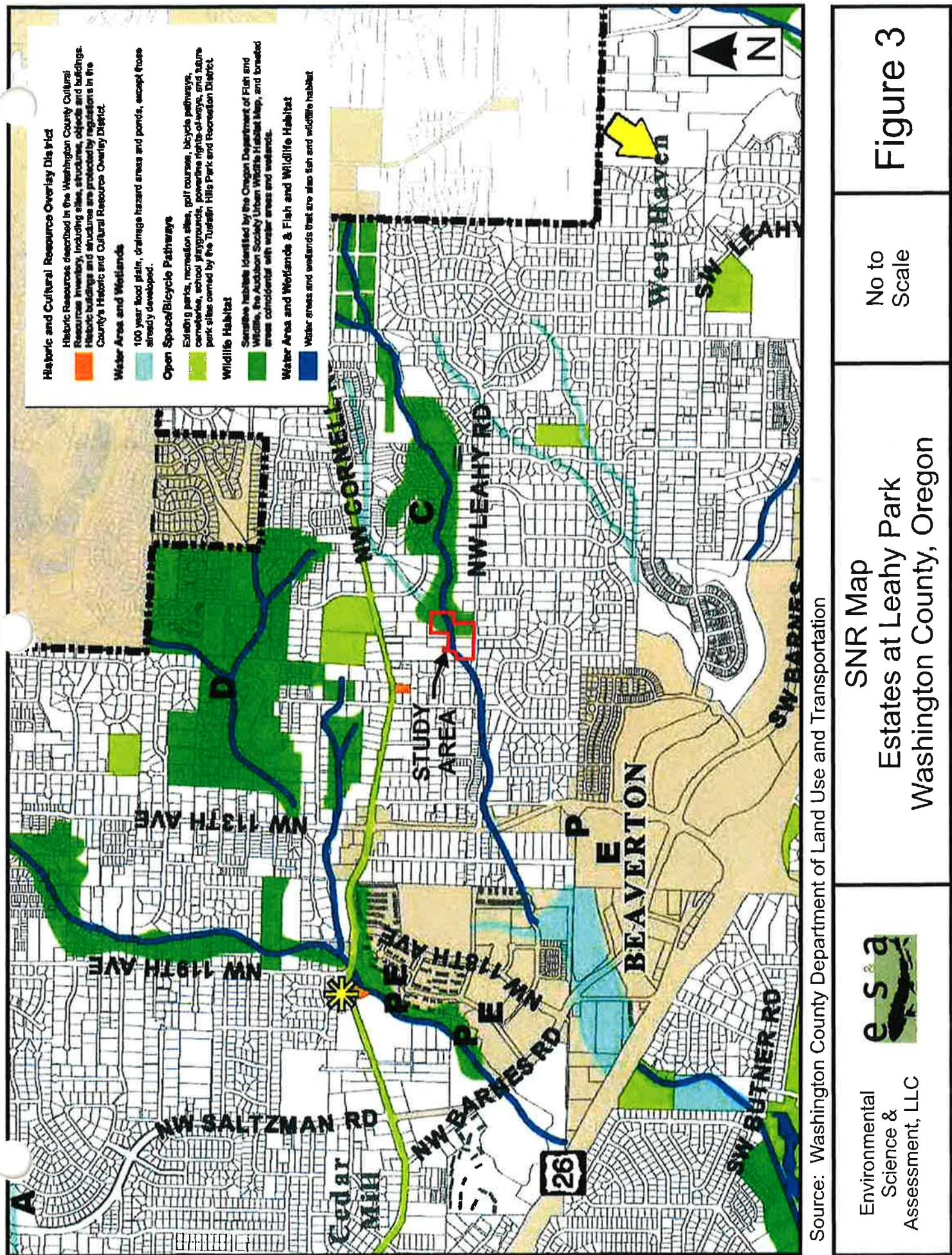
Imagery date: 08/13/2020

Environmental
Science &
Assessment, LLC
esa

Aerial Map
Estates at Leahy Park
Washington County, Oregon

Figure 2

Approx. Scale:
1in. = 130 ft.



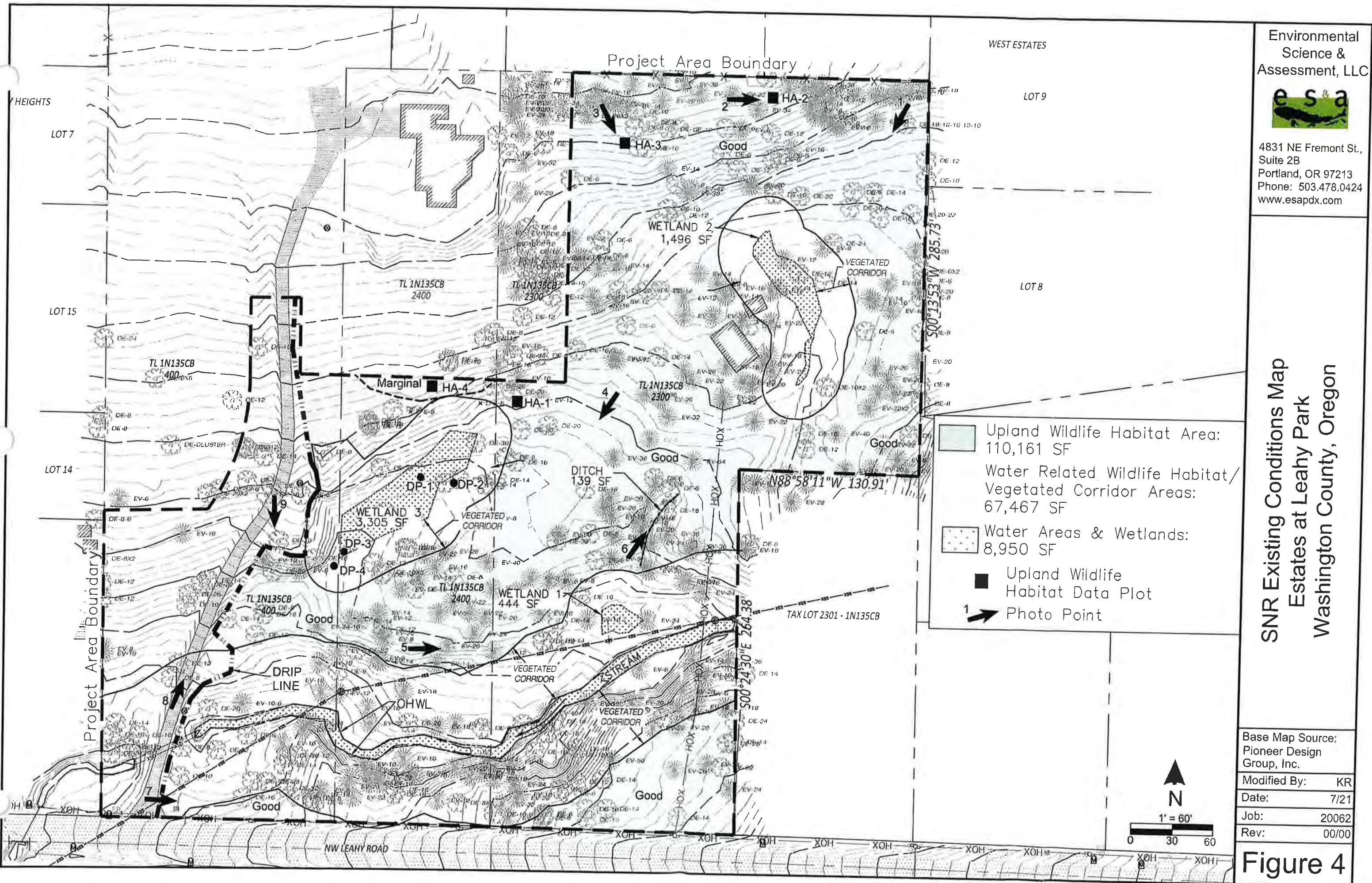
Source: Washington County Department of Land Use and Transportation

Environmental
Science &
Assessment, LLC

SNR Map
Estates at Leahy Park
Washington County, Oregon

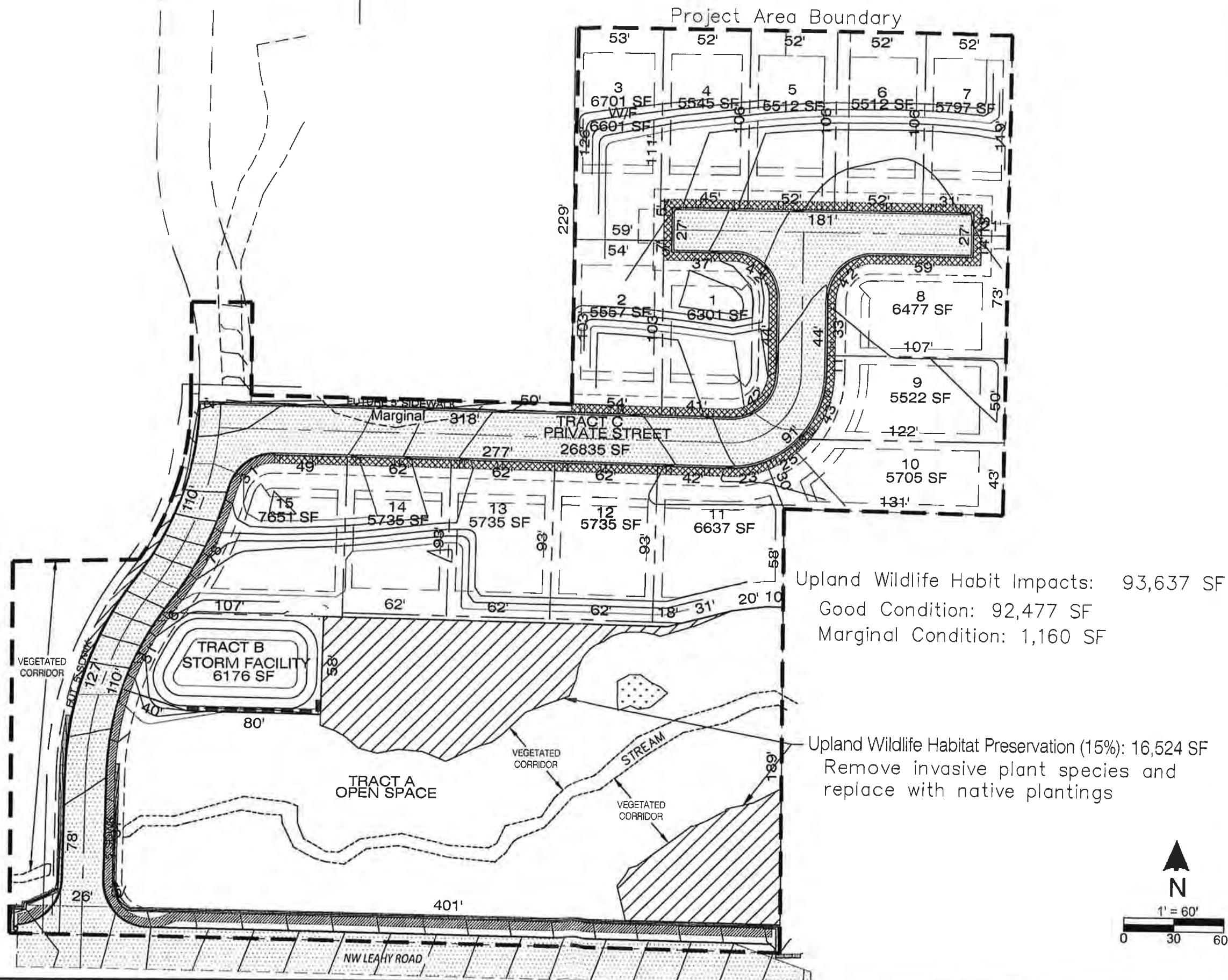
No to
Scale

Figure 3



SNR Existing Conditions Map Estates at Leahy Park Washington County, Oregon

**Site Plan
Estates at Leahy Park
Washington County, Oregon**



APPENDIX B: SITE PHOTOS



Photo 1: View southwest from near northeast project limits. Madrone tree seen just left of shovel and throughout this area.

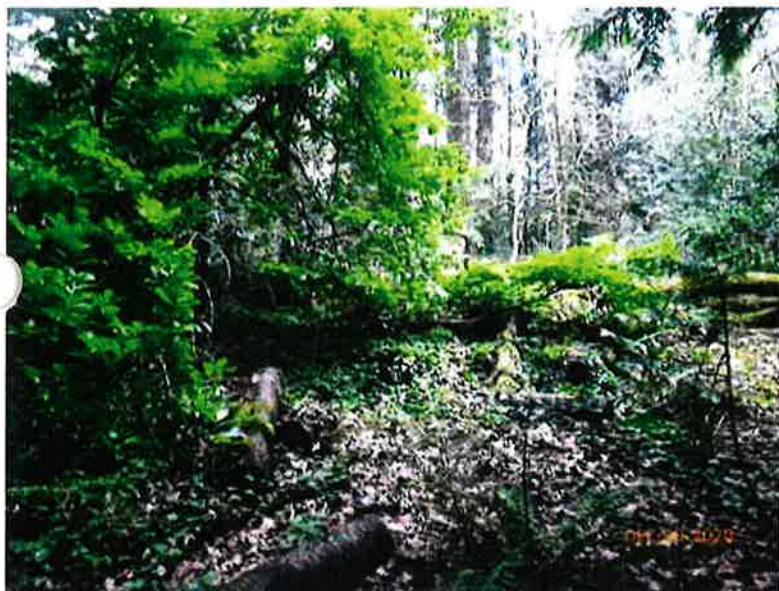


Photo 2: View east with large laurel hedge near property boundary now escaped and growing into forested area. Taken near plot HA-2.



Photo 3: View southeast with shovel at center of HA-3 plot. This area is considered in good condition despite dense English ivy.



Photo 4: View southwest into good condition upland habitat SNR. One or several trees in the background were standing dead snags.



Photo 5: View east showing good condition upland SNR on slope above CWS VC. Understory is typical for this area.



Photo 6: View northeast within good condition upland SNR with shovel in small non-jurisdictional ditch.



Photo 7: View east at southwest project limits showing edge of upland habitat SNR along road and extending into site.



Photo 8: View north up existing driveway with non-SNR on the left and upland habitat SNR just beyond blackberry at the right.



Photo 9: View southeast along driveway showing western edge of upland SNR. Orange flag shown at yellow arrow is limits of the flagged dripline with 60% or greater canopy cover.

APPENDIX C: WETLAND DETERMINATION DATA

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

Project/Site:	The Estates At Leahy Park / 10345 NW Leahy Road	City/County:	Unincorporated Washington	Sampling Date:	12/29/2020
Applicant/Owner:	Westwood Homes LLC	State:	OR	Sampling Point:	DP-1
Investigator(s):	K. Reavis, K. Sanderford	Section, Township, Range:	T1N R1W S35		
Landform (hillslope, terrace, etc.):	hillslope	Local relief (concave, convex, none):	concave	Slope (%):	10
Subregion (LRR):	A-Northwest Forests and Coasts	Lat:	45.524005	Long:	122.783667
Soil Map Unit Name:	Delena silt loam, 3 to 12 percent slopes	NWI classification:	none		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No _____ (If no, explain in Remarks.)					
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?			Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No _____
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No _____			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No _____			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
1. <i>Fraxinus latifolia</i>		80	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)		
2. _____		_____	_____	_____	Total Number of Dominant Species Across All Strata: 4 (B)		
3. _____		_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)		
4. _____		_____	_____	_____			
		80	= Total Cover				
Sapling/Shrub Stratum (Plot size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:		
1. <i>Rubus armeniacus</i>		30	Y	FAC	Total % Cover of: _____ Multiply by: _____		
2. <i>Ilex aquifolium</i>		5	Y	FACU	OBL species _____ x 1 = _____		
3. _____		_____	_____	_____	FACW species _____ x 2 = _____		
4. _____		_____	_____	_____	FAC species _____ x 3 = _____		
5. _____		_____	_____	_____	FACU species _____ x 4 = _____		
		35	= Total Cover			UPL species _____ x 5 = _____	
Herb Stratum (Plot size: 5' diameter)		Absolute % Cover	Dominant Species?	Indicator Status	Column Totals: _____ (A) _____ (B)		
1. <i>Carex obnupta</i>		80	Y	FACW	Prevalence Index = B/A = _____		
2. <i>Equisetum telmateia</i>		10	Y	FACW			
3. _____		_____	_____	_____	Hydrophytic Vegetation Indicators:		
4. _____		_____	_____	_____	1 - Rapid Test for Hydrophytic Vegetation		
5. _____		_____	_____	_____	✓ 2 - Dominance Test is >50%		
6. _____		_____	_____	_____	3 - Prevalence Index is ≤3.0 ¹		
7. _____		_____	_____	_____	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
8. _____		_____	_____	_____	5 - Wetland Non-Vascular Plants ¹		
9. _____		_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)		
10. _____		_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
11. _____		_____	_____	_____			
		90	= Total Cover				
Woody Vine Stratum (Plot size: 30' diameter)		Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____		
1. <i>Hedera helix</i>		10	Y	FACU			
2. _____		_____	_____	_____			
% Bare Ground in Herb Stratum _____		10	= Total Cover				
Remarks:							

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix	Redox Features				Texture	Remarks
		Color (moist)	%	Type ¹	Loc ²		
0-5	7.5 YR 3/1	100				silt loam	
5-10	7.5 YR 4/1	95	10 YR 4/6	5	C	M/PL	OR's in this layer
10-16	10 YR 4/1	90	10 YR 5/6	10	C	M	silt clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: 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 Soils³:

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

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): see remarksWater Table Present? Yes _____ No Depth (inches): see remarksSaturation Present? Yes _____ No Depth (inches): see remarks
(includes capillary fringe)Wetland Hydrology Present? Yes No _____

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

Remarks: Field observations of water table were accidentally not recorded for this plot, but are likely to be similar to that of DP-3, which is a wetland plot located about 50-feet downslope within the wetland. OR's were observed and recorded along living roots.

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

Project/Site: The Estates At Leahy Park / 10345 NW Leahy Road City/County: Unincorporated Washington Sampling Date: 12/29/2020
 Applicant/Owner: Westwood Homes LLC State: OR Sampling Point: DP-2
 Investigator(s): K. Reavis, K. Sanderford Section, Township, Range: T1N R1W S35
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 8
 Subregion (LRR): A-Northwest Forests and Coasts Lat: 45.524074 Long: 122.783570 Datum: NAD 1983
 Soil Map Unit Name: Delena silt loam, 3 to 12 percent slopes NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>	
Remarks:			

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>30' diameter</u>)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.		0	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)			
2.						
3.						
4.						
		0	Total Number of Dominant Species Across All Strata: <u>4</u> (B)			
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30' diameter</u>)		0	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)			
1. <u>Crataegus</u> sp.		30	Y	FAC	Prevalence Index worksheet:	
2. <u>Rubus armeniacus</u>		10	Y	FAC	Total % Cover of: _____ Multiply by: _____	
3.					OBL species _____ x 1 = _____	
4.					FACW species _____ x 2 = _____	
5.					FAC species _____ x 3 = _____	
		40	FACU species _____ x 4 = _____			
					UPL species _____ x 5 = _____	
					Column Totals: _____ (A) _____ (B)	
					Prevalence Index = B/A = _____	
<u>Herb Stratum</u> (Plot size: <u>5' diameter</u>)		40	Hydrophytic Vegetation Indicators:			
1. <u>Rubus ursinus</u>		30	Y	FACU	1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Galium trifidum</u>		5		FACW	2 - Dominance Test is >50%	
3. <u>Geranium robertianum</u>		5		FACU	3 - Prevalence Index is ≤3.0 ¹	
4.					4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.					5 - Wetland Non-Vascular Plants ¹	
6.					6 - Problematic Hydrophytic Vegetation ¹ (Explain)	
7.					¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8.						
9.						
10.						
11.						
		40	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>			
<u>Woody Vine Stratum</u> (Plot size: <u>30' diameter</u>)		40	Y	FACU		
1. <u>Hedera helix</u>		40	Y	FACU		
2.		40	Total Cover			
% Bare Ground in Herb Stratum _____						
Remarks: 40% leaf litter in herb stratum						

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix	Redox Features					Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	
0-12	7.5 YR 2.5/1	100					silt clay loam	
12-17	10 YR 3/1	95	10 YR 3/3	5	C	M	slit clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: 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 Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators** (minimum of one required; check all that apply)

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

Secondary Indicators (2 or more required)

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

Field Observations:Surface Water Present? Yes No Depth (inches): _____Water Table Present? Yes No Depth (inches): _____Saturation Present? Yes No Depth (inches): _____Wetland Hydrology Present? Yes No

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

Remarks:

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

Project/Site: <u>The Estates At Leahy Park / 10345 NW Leahy Road</u>		City/County: <u>Unincorporated Washington</u>		Sampling Date: <u>12/29/2020</u>	
Applicant/Owner: <u>Westwood Homes LLC</u>		State: <u>OR</u>		Sampling Point: <u>DP-3</u>	
Investigator(s): <u>K. Reavis, K. Sanderford</u>		Section, Township, Range: <u>T1N R1W S35</u>			
Landform (hillslope, terrace, etc.): <u>hillslope</u>		Local relief (concave, convex, none): <u>concave</u>		Slope (%): <u>10</u>	
Subregion (LRR): <u>A-Northwest Forests and Coasts</u>		Lat: <u>45.523899</u>		Long: <u>122.783812</u>	
Soil Map Unit Name: <u>Delena silt loam, 3 to 12 percent slopes</u>		NWI classification: <u>none</u>			
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No _____ (If no, explain in Remarks.)					
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____ Remarks: _____			Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____		
VEGETATION – Use scientific names of plants.					
Tree Stratum (Plot size: <u>30' diameter</u>) 1. _____ 2. _____ 3. _____ 4. _____			Absolute % Cover _____ Dominant Species? _____ Indicator Status _____ 0 = Total Cover		
			Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)		
Sapling/Shrub Stratum (Plot size: <u>30' diameter</u>) 1. <u>Rubus armeniacus</u> 5 Y FAC 2. _____ 3. _____ 4. _____ 5. _____			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 = _____		
Herb Stratum (Plot size: <u>5' diameter</u>) 1. <u>Agrostis sp.</u> 30 Y FAC 2. <u>Equisetum telmateia</u> 25 Y FACW 3. <u>Ranunculus repens</u> 5 FAC 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____			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.		
Woody Vine Stratum (Plot size: <u>30' diameter</u>) 1. <u>Hedera helix</u> 5 Y FACU 2. _____			60 = Total Cover 5 = Total Cover Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____		
% Bare Ground in Herb Stratum _____ Remarks: 40% leaf litter in herb stratum					

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix	Redox Features					Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	
0-8	7.5 YR 3/2	100						silt clay loam
8-16	10 YR 3/1	98	10 YR 3/4	2	C	M		silt clay loam
16-18	10 YR 4/1	98	10 YR 3/4	2	C	M		silt clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: 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 Matrx (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 Soils³:

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

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

Restrictive Layer (If present):

Type: _____
Depth (inches): _____Hydric Soil Present? Yes No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes _____ No Depth (Inches): _____
 Water Table Present? Yes No _____ Depth (inches): 9
 Saturation Present? Yes No _____ Depth (inches): 7
 (includes capillary fringe)

Wetland Hydrology Present? Yes No _____

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

Remarks:

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

Project/Site:	The Estates At Leahy Park / 10345 NW Leahy Road	City/County:	Unincorporated Washington	Sampling Date:	12/29/2020
Applicant/Owner:	Westwood Homes LLC	State:	OR	Sampling Point:	DP-4
Investigator(s):	K. Reavis, K. Sanderford	Section, Township, Range:	T1N R1W S35		
Landform (hillslope, terrace, etc.):	hillslope	Local relief (concave, convex, none):	concave	Slope (%):	10
Subregion (LRR):	A-Northwest Forests and Coasts	Lat:	45.523830	Long:	122.783866
Soil Map Unit Name:	Delenia silt loam, 3 to 12 percent slopes	NWI classification:	none		
Are climatic / hydrologic conditions on the site typical for this time of year? Yes <input checked="" type="checkbox"/> No _____ (If no, explain in Remarks.)					
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?			Are "Normal Circumstances" present? Yes <input checked="" type="checkbox"/> 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 <input checked="" type="checkbox"/>	No _____	Is the Sampled Area within a Wetland?	Yes _____	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes _____	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes _____	No <input checked="" type="checkbox"/>			
Remarks:					

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)	
1. <u>Alnus rubra</u>	30	Y	FAC		
2. <u>Pseudotsuga menziesii</u>	10	Y	FACU		
3. <u>Fraxinus latifolia</u>	10	Y	FACW		
4. _____	50	= Total Cover			
Sapling/Shrub Stratum (Plot size: 30' diameter)					
1. <u>Rubus armeniacus</u>	60	Y	FAC		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
60 = Total Cover					
Herb Stratum (Plot size: 5' diameter)					
1. <u>Equisetum telmateia</u>	10	Y	FACW		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
10 = Total Cover					
Woody Vine Stratum (Plot size: 30' diameter)					
1. <u>Hedera helix</u>	80	Y	FACU		
2. _____	_____	_____	_____		
80 = Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					
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 <input checked="" type="checkbox"/> No _____					

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	7.5 YR 3/2	100					silt clay loam	
8-14	7.5 YR 3/2	99	7.5 YR 4/4	1	C	M	silt clay loam	
14-19	10 YR 4/1	99	7.5 YR 4/4	1	C	M	silt clay loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: 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 Soils³:

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

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (minimum of one required; check all that apply)**

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

Secondary Indicators (2 or more required)

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

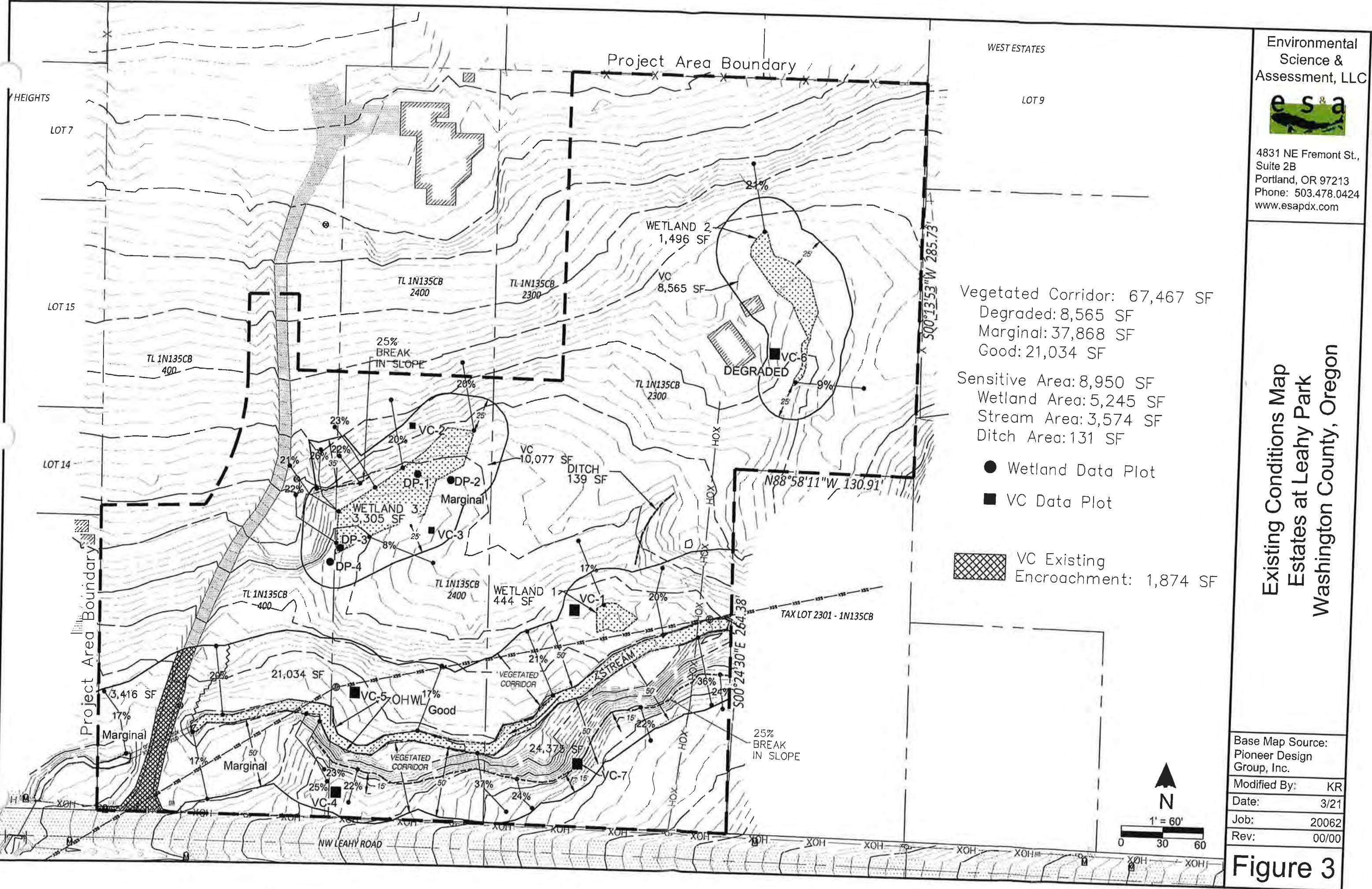
Field Observations:Surface Water Present? Yes No Depth (inches): _____Water Table Present? Yes No Depth (inches): 16Saturation Present? Yes No Depth (inches): 13
(includes capillary fringe)**Wetland Hydrology Present? Yes No**

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

Remarks:

APPENDIX D: VEGETATED CORRIDOR DATA FORMS

Existing Conditions Map Estates at Leahy Park Washington County, Oregon



VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-1				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2300						
Brief Description of Plot Location: Just east of small wetland, north of the stream								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Tellima grandiflora</i>	15	10	X			X		X
2 <i>Carex leptopoda</i>	5	3	X			X		X
3 <i>Pteridium aquilinum</i>	15	10	X			X		X
4 <i>Polystichum munitum</i>	10	7	X			X		X
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum						0		
1 <i>Acer circinatum</i>	15	15	X			X		X
2 <i>Ilex aquifolium</i>	15	10		X		X		X
3 <i>Rubus armeniacus</i>	10	10		X	X			X
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum						0		
1 <i>Thuja plicata</i>	30	21	X			X		X
2 <i>Fraxinus latifolia</i>	30	21	X			X		X
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	145	108						
Total percent relative native species cover						87%		
Total percent aerial cover of tree canopy*						60%		
Total percent relative cover of non-native, noxious, and invasive species						20%		
<input checked="" type="checkbox"/>	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)							
	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)							
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)							
Comments:								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA

(3) R 07-20, Clean Water Services, June, 2007.

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-2				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2300, 2400, 400						
Brief Description of Plot Location: north side of Wetland 3								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Cardamine oligosperma</i>	10	12	X		X		X	
2 <i>Equisetum arvense</i>	10	12	X					
3 <i>Carex leptopoda</i>	10	12	X					
4 Bare ground/moss cover: 40%		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum		0						
1 <i>Rubus armeniacus</i>	20	24		X	X		X	
2		0						
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum		0						
1 <i>Thuja plicata</i>	20	24	X			X	X	
2 <i>Fraxinus latifolia</i>	15	18	X			X	X	
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	85	100						
Total percent relative native species cover						76%		
Total percent aerial cover of tree canopy*						35%		
Total percent relative cover of non-native, noxious, and invasive species						24%		
<input checked="" type="checkbox"/> Good Condition (native species >80% of the community and tree canopy >50% aerial cover)								
<input checked="" type="checkbox"/> Marginal Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)								
<input checked="" type="checkbox"/> Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)								
Comments: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R.07-20, Clean Water Services, June, 2007

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-3				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2400						
Brief Description of Plot Location: south side of wetland								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Hedera helix</i>	40	15	X		X		X	
2 <i>Polystichum munitum</i>	25	9	X			X		X
3 <i>Rubus ursinus</i>	10	4	X			X		X
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum						0		
1 <i>Ilex aquifolium</i>	80	30		X		X		X
2 <i>Symphoricarpos albus</i>	10	4	X			X		X
3 <i>Prunus laurocerasus</i>	10	4		X		X		X
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum						0		
1 <i>Pseudotsuga menziesii</i>	80	30	X			X		X
2 <i>Acer macrophyllum</i>	10	4	X			X		X
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	265	100						
Total percent relative native species cover						66%		
Total percent aerial cover of tree canopy*						90%		
Total percent relative cover of non-native, noxious, and invasive species						34%		
<input type="checkbox"/>	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)							
<input checked="" type="checkbox"/>	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)							
<input type="checkbox"/>	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)							
Comments:								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June, 2007

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-4									
Township/Range/Section: T1N R1W S35													
Tax Map: 1N135CB		Lot(s): 2400											
Brief Description of Plot Location: south side of stream, east of driveway													
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020											
Plant Community Type: Upland													
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)						
			Yes	No	Yes	No	Yes	No					
1 <i>Hedera helix</i>	50	18	X	X		X							
2 <i>Polystichum munitum</i>	60	21	X		X		X						
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Shrub Stratum						0							
1 <i>Ilex aquifolium</i>	15	5	X		X		X						
2 <i>Rubus armeniacus</i>	10	4	X	X			X						
3 <i>Prunus laurocerasus</i>	50	18	X		X		X						
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Tree Stratum						0							
1 <i>Thuja plicata</i>	100	35	X			X	X						
2		0											
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
Total	285	100											
Total percent relative native species cover						56%							
Total percent aerial cover of tree canopy*						100%							
Total percent relative cover of non-native, noxious, and invasive species						44%							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td>Good Condition (native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td style="width: 10%;">X</td> <td>Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)</td> </tr> <tr> <td style="width: 10%;"></td> <td>Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>									Good Condition (native species >80% of the community and tree canopy >50% aerial cover)	X	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)		Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)
	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)												
X	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)												
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)												
Comments: 													

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA

(3) R 07-20, Clean Water Services, June, 2007.

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-5										
Township/Range/Section: T1N R1W S35														
Tax Map: 1N135CB		Lot(s): 2400												
Brief Description of Plot Location: approximately 10 feet east of manhole, north side of stream														
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020												
Plant Community Type: Upland														
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)							
			Yes	No	Yes	No	Yes	No						
1 <i>Tolmiea menziesii</i>	40	20	X			X		X						
2 <i>Polystichum munitum</i>	30	15	X			X		X						
3 <i>Rubus ursinus</i>	10	5	X			X		X						
4 Bare ground/leaf litter: 40%		0												
5		0												
6		0												
7		0												
8		0												
9		0												
10		0												
Shrub Stratum						0								
1 <i>Ilex aquifolium</i>	15	7		X	X			X						
2 <i>Rubus armeniacus</i>	20	10		X	X			X						
3		0												
4		0												
5		0												
6		0												
7		0												
8		0												
9		0												
10		0												
Tree Stratum						0								
1 <i>Pseudotsuga menziesii</i>	35	17	X			X		X						
2 <i>Acer macrophyllum</i>	25	12	X			X		X						
3 <i>Thuja plicata</i>	30	15	X			X		X						
4		0												
5		0												
6		0												
7		0												
8		0												
9		0												
Total	205	100												
Total percent relative native species cover						83%								
Total percent aerial cover of tree canopy*						90%								
Total percent relative cover of non-native, noxious, and invasive species						17%								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%; text-align: center;">X</td> <td>Good Condition (native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td style="text-align: center;"></td> <td>Marginal Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)</td> </tr> <tr> <td style="text-align: center;"></td> <td>Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>									X	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)		Marginal Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)		Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)
X	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)													
	Marginal Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)													
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)													
Comments: <div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div>														

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June, 2007.

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Westwood/Leahy Road		Site Address: 10345 NW Leahy Road		Plot ID: VC-6									
Township/Range/Section: T1N R1W S35													
Tax Map: 1N135CB		Lot(s): 2300											
Brief Description of Plot Location: west side of wetland													
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020											
Plant Community Type: Upland													
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)						
			Yes	No	Yes	No	Yes	No					
1 <i>Ranunculus repens</i>	20	18	X		X		X						
2 <i>Daucus carota</i>	15	14	X		X		X						
3 <i>Stachys sp.</i>	5	5	X		X		X						
4 <i>Equisetum arvense</i>	10	9	X		X		X						
5 <i>Tolmiea menziesii</i>	5	5	X		X		X						
6		0											
7		0											
8		0											
9		0											
10		0											
Shrub Stratum						0							
1 <i>Rubus armeniacus</i>	35	32	X	X		X							
2		0											
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Tree Stratum						0							
1 <i>Thuja plicata</i>	20	18	X		X		X						
2		0											
3		0											
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
Total	110	100											
Total percent relative native species cover						36%							
Total percent aerial cover of tree canopy*						20%							
Total percent relative cover of non-native, noxious, and invasive species						64%							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Good Condition</td> <td>(native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td>Marginal Condition</td> <td>(native species 50-80% of the community and tree canopy 26-50% aerial cover)</td> </tr> <tr> <td>X Degraded Condition</td> <td>(native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>								Good Condition	(native species >80% of the community and tree canopy >50% aerial cover)	Marginal Condition	(native species 50-80% of the community and tree canopy 26-50% aerial cover)	X Degraded Condition	(native species <50% of the community and tree canopy <25% aerial coverage)
Good Condition	(native species >80% of the community and tree canopy >50% aerial cover)												
Marginal Condition	(native species 50-80% of the community and tree canopy 26-50% aerial cover)												
X Degraded Condition	(native species <50% of the community and tree canopy <25% aerial coverage)												
Comments: *aerial canopy cover is calculated based on the sum of cover of separate species and compared to a spherical densiometer measurement taken at each plot. Spherical densiometer: 83/96 covered = $83 \times 1.04 = 86\%$ canopy cover. This plot has 2 additional attributes in addition to being considered in good condition based on canopy cover and percent relative native species													

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA

(3) R 07-20, Clean Water Services, June, 2007

Environmental Science and Assessment, LLC

VEGETATED CORRIDOR DATA SHEET

Client/Project Name: Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: VC-7									
Township/Range/Section: T1N R1W S35													
Tax Map: 1N135CB		Lot(s): 2400											
Brief Description of Plot Location: south side of stream, southeast portion of VC													
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020											
Plant Community Type: Upland													
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)						
			Yes	No	Yes	No	Yes	No					
1 <i>Hedera helix</i>	40	22	X	X	X								
2 <i>Polystichum munitum</i>	25	14	X		X		X						
3 <i>Carex leptopoda</i>	5	3	X		X		X						
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Shrub Stratum						0							
1 <i>Ilex aquifolium</i>	15	8	X		X		X						
2 <i>Rubus armeniacus</i>	40	22	X	X	X		X						
3 <i>Crataegus monogyna</i>	5	3	X		X		X						
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Tree Stratum						0							
1 <i>Acer macrophyllum</i>	20	11	X		X		X						
2 <i>Fraxinus latifolia</i>	20	11	X		X		X						
3 <i>Sequoia sempervirens giganteum</i>	15	8	X		X		X						
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
Total	185	100											
Total percent relative native species cover						46%							
Total percent aerial cover of tree canopy*						55%							
Total percent relative cover of non-native, noxious, and invasive species						54%							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">Good</td> <td>Condition (native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td>Marginal</td> <td>Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)</td> </tr> <tr> <td>Degraded</td> <td>Condition (native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>								Good	Condition (native species >80% of the community and tree canopy >50% aerial cover)	Marginal	Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)	Degraded	Condition (native species <50% of the community and tree canopy <25% aerial coverage)
Good	Condition (native species >80% of the community and tree canopy >50% aerial cover)												
Marginal	Condition (native species 50-80% of the community and tree canopy 25-50% aerial cover)												
Degraded	Condition (native species <50% of the community and tree canopy <25% aerial coverage)												
Comments: <div style="border: 1px solid black; height: 40px; margin-top: 10px;"></div>													

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA

(3) R 07-20, Clean Water Services, June, 2007.

Environmental Science and Assessment, LLC

APPENDIX E: WILDLIFE HABITAT ASSESSMENT

UPLAND WILDLIFE HABITAT DATA SHEET

Client/Project Name: Westwood Homes / Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: HA-1				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2300, 2400, 400						
Brief Description of Plot Location: Northwest of larger wetland on eastern parcel, generally NE site corner								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Rubus ursinus</i>	50	18	X			X		X
2 <i>Carex leptopoda</i>	30	11	X			X		X
3 <i>Pteridium aquilinum</i>	20	7	X			X		X
4 <i>Polystichum munitum</i>	5	2	X			X		X
5 <i>Geranium robertianum</i>	5	2		X	X			X
6 <i>Fragaria vesca</i>	5	2	X			X		X
7		0						
8		0						
9		0						
10		0						
Shrub Stratum		0						
1 <i>Ilex aquifolium</i>	40	15		X		X	X	
2 <i>Corylus cornuta</i>	20	7	X			X		X
3 <i>Rubus armeniacus</i>	15	5		X	X			X
4 <i>Thuja plicata</i> (saplings)	5	2	X			X		X
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum		0						
1 <i>Pseudotsuga menziesii</i>	50	18	X			X		X
2 <i>Thuja plicata</i>	20	7	X			X		X
3 <i>Ilex aquifolium</i>	10	4		X		X	X	
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	275	100						
Total percent relative native species cover						75%		
Total percent aerial cover of tree canopy*						80%		
Total percent relative cover of non-native, noxious, and invasive species						25%		
Additional Attributes (select all that apply)		Connectivity, 25% of trees >24" DBH, 20% cover comprised of trees on List A						
List A (select all that apply):		n/a, <i>Arbutus menziesii</i>						
<input checked="" type="checkbox"/>	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)							
	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)							
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)							
Comments: *aerial canopy cover is calculated based on the sum of cover of separate species and compared to a spherical densiometer measurement taken at each plot. Spherical densiometer: 62/96 covered = 62*1.04 = 65% canopy cover. This plot meets three additional attributes and is considered in good condition. Several madrone were noted nearby both on and off site, though did not comprise more than 20% cover.								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA

(3) R 07-20, Clean Water Services, June, 2007

Environmental Science and Assessment, LLC

UPLAND WILDLIFE HABITAT DATA SHEET

Client/Project Name: Westwood Homes / Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: HA-2				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2300, 2400, 400						
Brief Description of Plot Location: north-central property boundary								
Site Investigator Name: J. Dalton, K. Reavis, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Hedera helix</i>	75	27	X	X	X			
2 Bare ground/leaf litter: 25%		0						
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum								
1 <i>Prunus laurocerasus</i>	90	33	X	X	X			
2 <i>Ilex aquifolium</i>	10	4	X	X	X			
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum								
1 <i>Pseudotsuga menziesii</i>	50	18	X	X	X			
2 <i>Sequoiadendron giganteum</i>	50	18	X	X	X			
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	275	100						
Total percent relative native species cover						36%		
Total percent aerial cover of tree canopy*						100%		
Total percent relative cover of non-native, noxious, and invasive species						64%		
Additional Attributes (select all that apply)		Connectivity, 25% of trees >24" DBH						
List A (select all that apply):		n/a						
<input checked="" type="checkbox"/>	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)							
	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)							
	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)							
Comments: *aerial canopy cover is calculated based on the sum of cover of separate species and compared to a spherical densiometer measurement taken at each plot. Spherical densiometer: 96/96 covered = 96*1.04 = 100% canopy cover. This plot has 2 additional attributes so is increased from marginal (due to low relative native species cover) to good.								

UPLAND WILDLIFE HABITAT DATA SHEET

Client/Project Name: Westwood Homes / Estates at Leahy Park			Site Address: 10345 NW Leahy Road			Plot ID: HA-3							
Township/Range/Section: T1N R1W S35													
Tax Map: 1N135CB			Lot(s): 2300, 2400, 400										
Brief Description of Plot Location: ~100-ft east of house on western parcel and ~50-feet south of northern boundary of eastern parcel													
Site Investigator Name: J. Dalton, K. Reavls, K. Sanderford			Date of Investigation: 12/29/2020										
Plant Community Type: Upland													
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)						
			Yes	No	Yes	No	Yes	No					
1 <i>Hedera helix</i>	90	29	X		X		X						
2 <i>Polystichum munitum</i>	60	19	X			X		X					
3 <i>Rubus ursinus</i>	10	3	X			X		X					
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Shrub Stratum													
1 <i>Ilex aquifolium</i>	30	10		X		X	X						
2 <i>Rubus armeniacus</i>	10	3		X	X		X						
3 <i>Corylus cornuta</i>	10	3	X			X		X					
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
10		0											
Tree Stratum													
1 <i>Populus balsamifera</i>	60	19	X			X	X						
2 <i>Acer circinatum</i>	25	8	X			X	X						
3 <i>Pseudotsuga menziesii</i>	15	5	X			X	X						
4		0											
5		0											
6		0											
7		0											
8		0											
9		0											
Total	310	100											
Total percent relative native species cover							58%						
Total percent aerial cover of tree canopy*							100%						
Total percent relative cover of non-native, noxious, and invasive species							42%						
Additional Attributes (select all that apply)			Connectivity, 25% of trees >24" DBH										
List A (select all that apply):			n/a										
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10px;"><input checked="" type="checkbox"/></td> <td>Good Condition (native species >80% of the community and tree canopy >50% aerial cover)</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)</td> </tr> </table>								<input checked="" type="checkbox"/>	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)	<input type="checkbox"/>	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)	<input type="checkbox"/>	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)
<input checked="" type="checkbox"/>	Good Condition (native species >80% of the community and tree canopy >50% aerial cover)												
<input type="checkbox"/>	Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)												
<input type="checkbox"/>	Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)												
Comments: *aerial canopy cover is calculated based on the sum of cover of separate species and compared to a spherical densiometer measurement taken at each plot. Spherical densiometer: 83/96 covered = 83*1.04 = 86% canopy cover. This plot has 2 additional attributes in addition to being considered in good condition based on canopy cover and percent relative native species													

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June 2007.

Environmental Science and Assessment, LLC

UPLAND WILDLIFE HABITAT DATA SHEET

Client/Project Name: Westwood Homes / Estates at Leahy Park		Site Address: 10345 NW Leahy Road		Plot ID: HA-4				
Township/Range/Section: T1N R1W S35								
Tax Map: 1N135CB		Lot(s): 2300, 2400, 400						
Brief Description of Plot Location: ~75-feet due south of house on western parcel								
Site Investigator Name: J. Dalton, K. Reavls, K. Sanderford		Date of Investigation: 12/29/2020						
Plant Community Type: Upland								
Herbaceous Stratum	Percent Aerial Cover	Percent Relative Cover	Native? (1)		Noxious? (2)		Invasive? (3)	
			Yes	No	Yes	No	Yes	No
1 <i>Hedera helix</i>	100	32	X	X	X			
2 <i>Polystichum munitum</i>	10	3	X		X		X	
3		0						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Shrub Stratum								
1 <i>Ilex aquifolium</i>	40	13	X		X	X		
2 <i>Prunus laurocerasus</i>	40	13	X		X	X		
3 <i>Buxus sempervirens</i>	10	3	X		X		X	
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
10		0						
Tree Stratum								
1 <i>Pseudotsuga menziesii</i>	50	16	X		X		X	
2 <i>Ilex aquifolium</i>	40	13	X		X	X		
3 <i>Quercus coccinea</i>	20	6						
4		0						
5		0						
6		0						
7		0						
8		0						
9		0						
Total	310	100						
Total percent relative native species cover						19%		
Total percent aerial cover of tree canopy*						110%		
Total percent relative cover of non-native, noxious, and invasive species						74%		
Additional Attributes (select all that apply)		Connectivity						
List A (select all that apply):								
<input type="checkbox"/> Good Condition (native species >80% of the community and tree canopy >50% aerial cover)								
<input checked="" type="checkbox"/> Marginal Condition (native species 50-80% of the community and tree canopy 26-50% aerial cover)								
<input type="checkbox"/> Degraded Condition (native species <50% of the community and tree canopy <25% aerial coverage)								
Comments: *aerial canopy cover is calculated based on the sum of cover of separate species and compared to a spherical densiometer measurement taken at each plot. Spherical densiometer: 92/96 covered = 96*1.04 = 96% canopy cover. This plot has 1 additional attribute and is considered in marginal condition due to low relative percent native vegetation.								

(1) Portland Plant List, 2011.

(2) Noxious Weed List, ODA.

(3) R 07-20, Clean Water Services, June, 2007.

Environmental Science and Assessment, LLC



Oregon

Kate Brown, Governor

October 9, 2019

Roy M. Hayes Living Trust
Attn: Mark Hayes
10345 NW Leahy Rd.
Portland, OR 97229

Department of State Lands
775 Summer Street NE, Suite 100
Salem, OR 97301-1279
(503) 986-5200
FAX (503) 378-4844
www.oregon.gov/dsl
State Land Board

Kate Brown
Governor

Bev Clarno
Secretary of State

Tobias Read
State Treasurer

Re: WD # 2019-0503 Approved
Wetland Delineation Report for NW Leahy Rd
Washington County; T1N R1W S35CB TL2300

Dear Mr. Hayes:

The Department of State Lands has reviewed the wetland delineation report prepared by Schott & Associates for the site referenced above. Based upon the information presented in the report, we concur with the wetland and waterway boundaries as mapped in Figure 6 of the report. Please replace all copies of the preliminary wetland map with this final Department-approved map.

Within the study area, two wetlands (Wetlands 1 and 2, totaling approximately 0.044 acres), one ditch and one stream were identified. The wetlands and stream are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). The ditch is exempt per OAR 141-085-0515(8).

This concurrence is for purposes of the state Removal-Fill Law only. We recommend that you attach a copy of this concurrence letter to any subsequent state permit application to speed application review. Federal or local permit requirements may apply as well. The U.S. Army Corps of Engineers will determine jurisdiction under the Clean Water Act, which may require submittal of a complete Wetland Delineation Report.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. If you have any questions, please contact Chris Stevenson, the Jurisdiction Coordinator for Washington County, at (503) 986-5246.

Sincerely,

Peter Ryan

Digitally signed by Peter Ryan
Date: 2019.10.09 09:25:14
-07'00'

Peter Ryan, PWS
Aquatic Resource Specialist

Enclosures

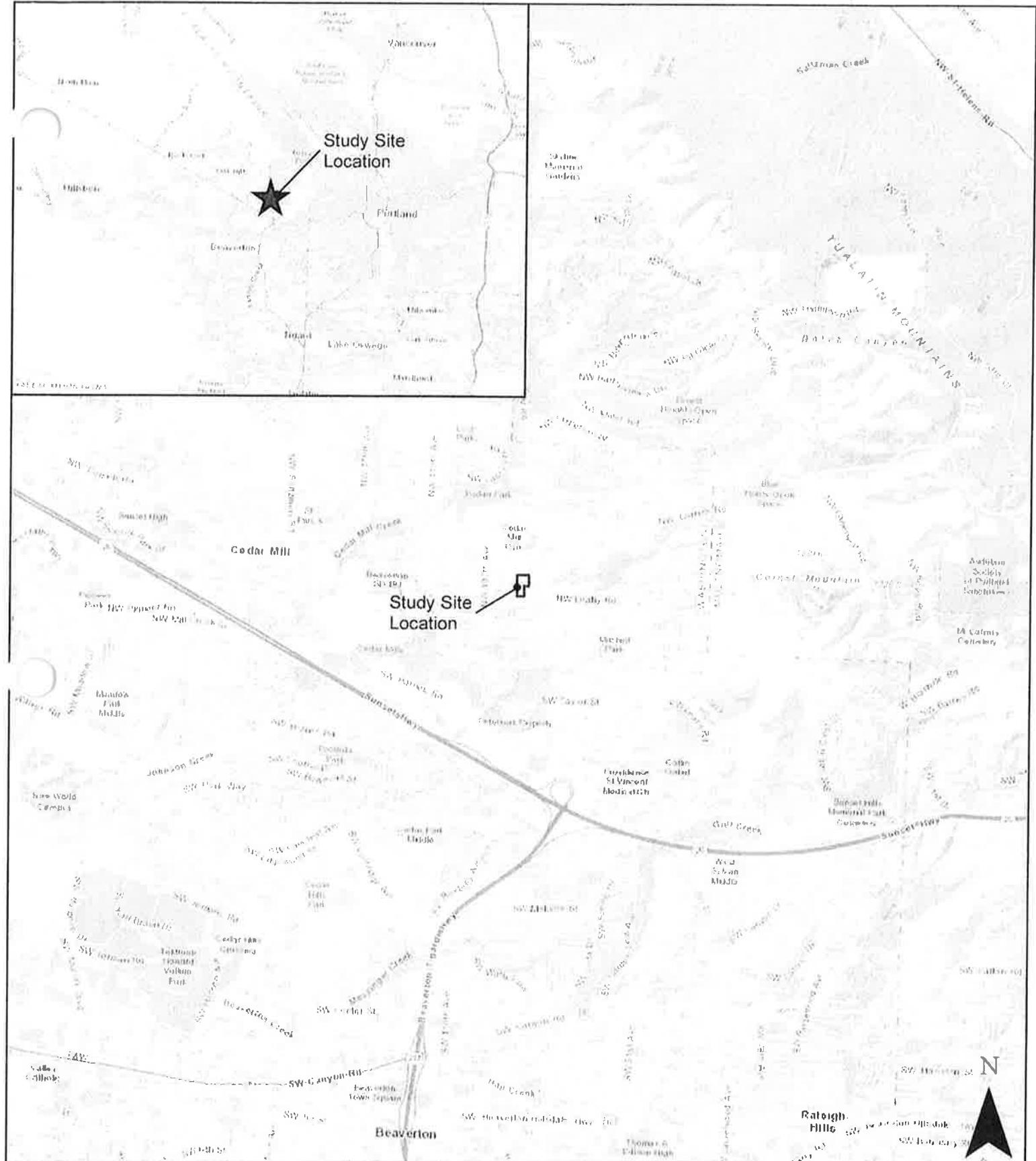
cc: Kim Biafora, Schott & Associates
Todd Knudsen, Berkshire Hathaway Home Services NW Real Estate
City of Portland Planning Department (Maps enclosed for updating LWI)
Carrie Bond, Corps of Engineers
Anita Huffman, DSL
Lindsey Obermiller, Clean Water Services

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover from and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us.** For submltal of PDF files larger than 10 MB, e-mail DSL instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information	
<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: Roy M. Hayes Living Trust 10345 NW Leahy Rd Portland, OR 97229	
<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address (if different): Todd Knudsen Berkshire Hathaway Home Services NW Real Estate 9600 SW Barnes Rd, Suite 100 Portland, OR 97226	
I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.	
Typed/Printed Name: <u>Roy A Hayes</u> Signature: <u>MAG</u> Date: <u>9/16/2017</u> Special Instructions regarding site access: _____	
Project and Site Information	
Project Name: NW Leahy Road	
Proposed Use: Residential development	
Project Street Address (or other descriptive location): 10345 NW Leahy Rd	
City: Portland	County: Washington
Latitude: 45.524038° Longitude: -122.783329° decimal degree - centroid of site or start & end points of linear project	
Tax Map # 1N135CB Tax Lot(s) 2300 Tax Map #	
Tax Lot(s) Township 1N Range 1W Section 35CB QQ NW/SW Use separate sheet for additional tax and location information	
Waterway: Unnamed Trib #1 River Mile: 1	
Wetland Delineation Information	
Wetland Consultant Name, Firm and Address: Kim Blafora, Schott & Associates 21018 NE Hwy 99E Aurora, OR 97002	
Phone # (503) 678-6007 Mobile phone # (if applicable) E-mail: kim@schottandassociates.com	
The Information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: <u>Kim Blafora</u> Date: <u>9/16/2017</u>	
Primary Contact for report review and site access is <input type="checkbox"/> Consultant <input type="checkbox"/> Applicant/Owner <input checked="" type="checkbox"/> Authorized Agent	
Wetland/Waters Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Study Area size: 3.14 Total Wetland Acreage: 0.0440	
Check Applicable Boxes Below	
<input type="checkbox"/> R-F permit application submitted <input type="checkbox"/> Mitigation bank site <input type="checkbox"/> Industrial Land Certification Program Site <input type="checkbox"/> Wetland restoration/enhancement project (not mitigation) <input type="checkbox"/> Previous delineation/application on parcel If known, previous DSL # _____	
<input type="checkbox"/> Fee payment submitted \$ _____ <input type="checkbox"/> Fee (\$100) for resubmittal of rejected report <input type="checkbox"/> Request for Reissuance. See eligibility criteria. (no fee) DSL # _____ Expiration date _____	
<input type="checkbox"/> LWI shows wetlands or waters on parcel Wetland ID code _____	
For Office Use Only	
DSL Reviewer: <u>CS</u> Fee Paid Date: <u> / / </u> DSL WD # <u>2019-0503</u>	
Date Delineation Received: <u>9 / 6 / 19</u> Scanned: <input type="checkbox"/> Electronic: <input checked="" type="checkbox"/> DSL App.# _____	



Date: 8/12/2019

$$= 0.6 \text{ miles}$$

Source: ESRI, 2019

Figure 1. Location Map

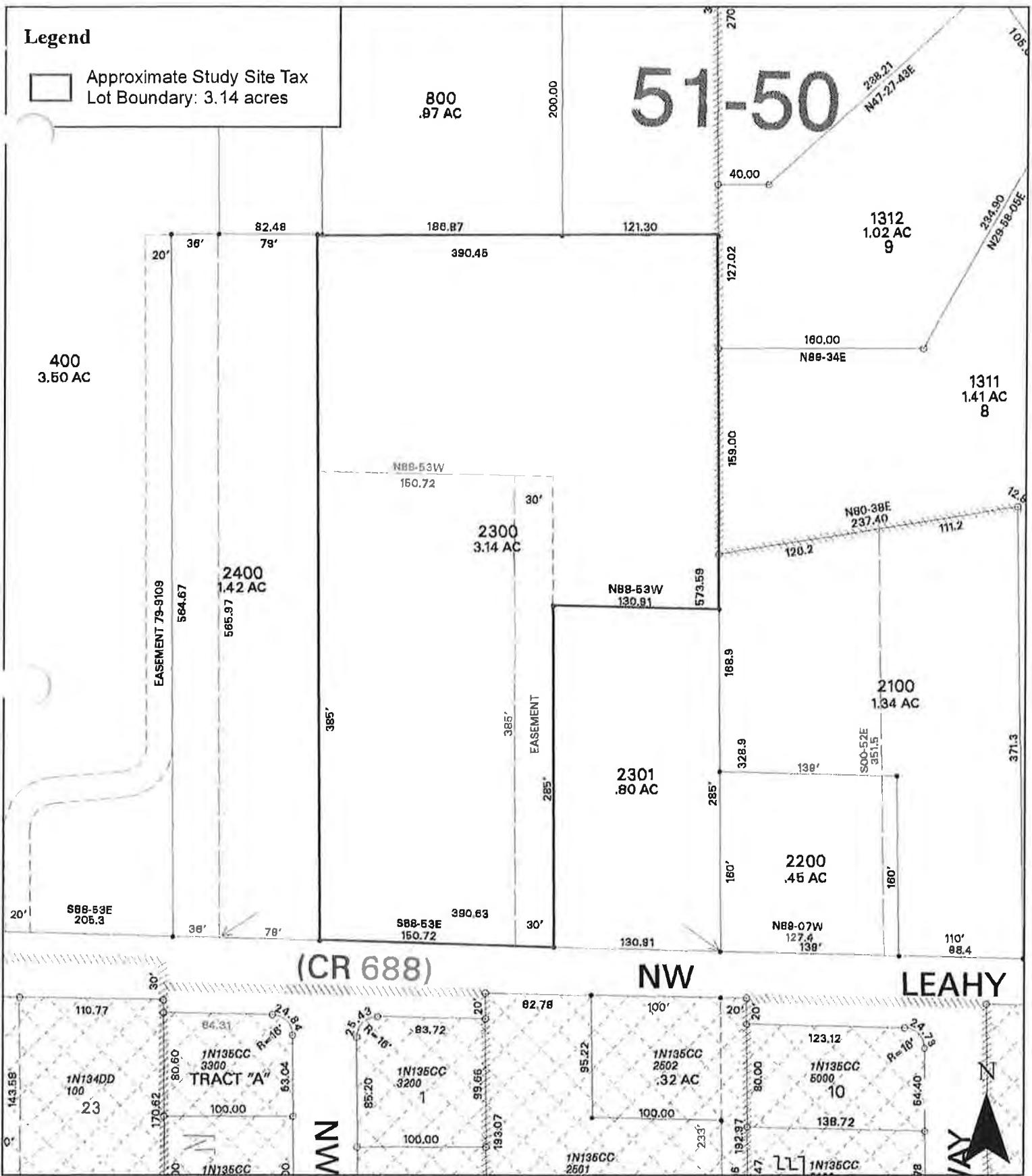
NW Leahy Road Project Site: S&A #2708



A horizontal number line representing distance in miles. The line starts at 0 and ends at 1. There are four tick marks labeled 0, 0.25, 0.5, and 1. Miles is written at the end of the line.

Legend

Approximate Study Site Tax Lot Boundary: 3.14 acres



Date: 8/16/2019

Source: Washington
County Intermap, 2019

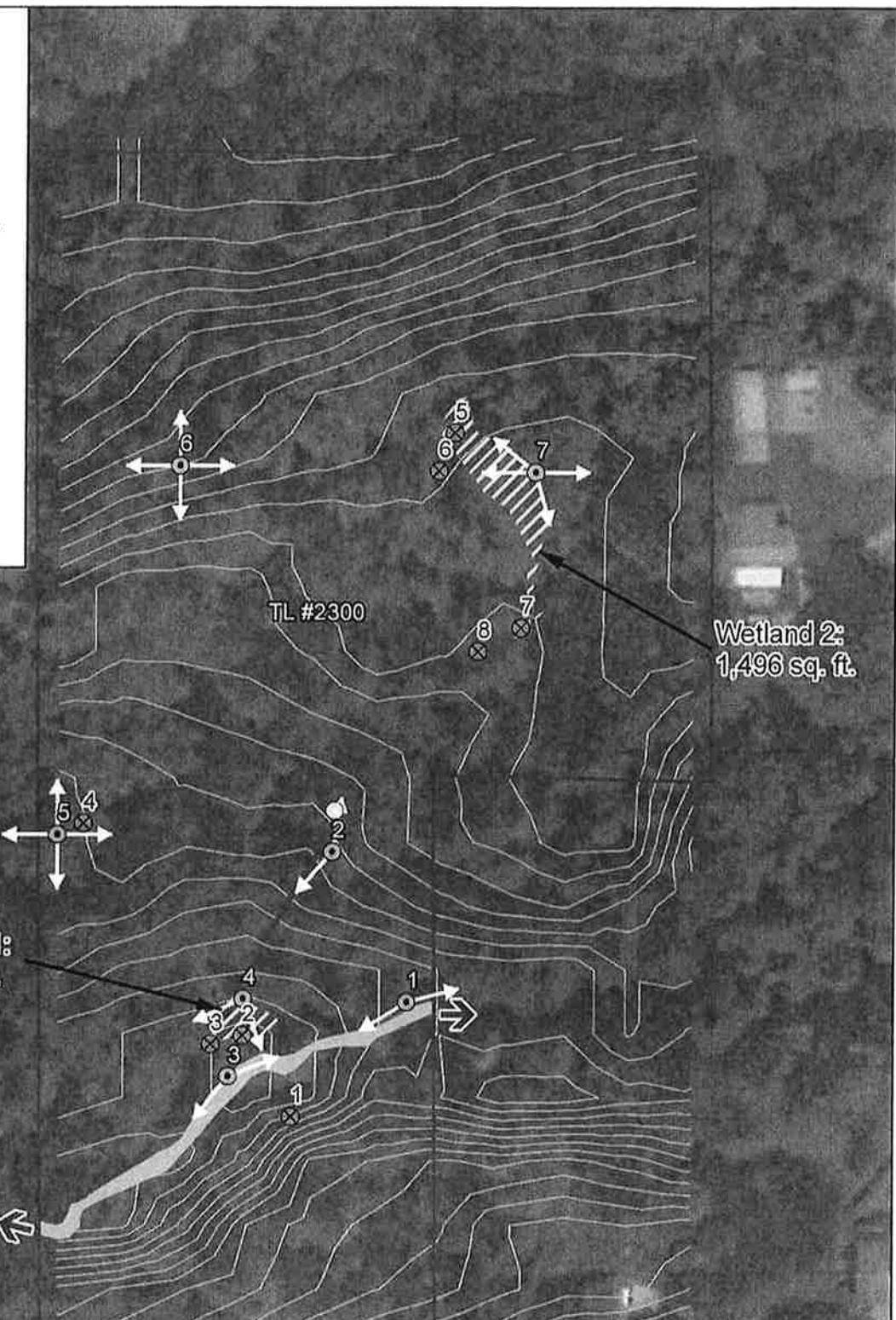
Figure 2. Washington County Tax Map:
1N135CB

NW Leahy Road Project Site: S&A # 2708

0 25 50 100 Feet

Legend

- Approximate Study Site Tax Lot Boundary: ~3 acres
- Wetlands: 1,941 sq. ft.
- Stream Corridor: 1,428 sq. ft.
- Ditch: 131 sq. ft.
- Contours: 2-ft. Interval
- Sample Plots
- Photo Points
- Pipe Outlet
- Feature Continues Offsite



Mapping Method and Precision Statement: The mapped features were based on vegetation, soils, and hydrology, as well as OHWM data gathered in the field by Schott & Associates. The sample plots and drainage boundaries were recorded utilizing a Trimble Geo XT hand-held unit and post-processed to a +/- 3 foot accuracy. The GPS data were then imported into ArcGIS software to produce maps.

NW Leahy Rd

Date: 8/16/2019

Source: ESRI, 2019; Washington County Intermap, 2019

DSL WD # 2019-0503
Approval Issued 10/09/2019
Approval Expires 10/09/2024

Figure 6. Wetland Delineation Map

NW Leahy Road Project Site: S&A # 2708

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

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Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279.** A single PDF of the completed cover form and report may be e-mailed to: **Wetland_Delineation@dsl.state.or.us.** For submittal of PDF files larger than 10 MB, e-mail DSL Instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: Roy M. Hayes Living Trust 10345 NW Leahy Rd Portland, OR 97229	Business phone # (808) 695-4045 Mobile phone # (optional) (808) 291-5576 E-mail: mhayes@cwassociatescpas.com
<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address (if different): Todd Knudsen Berkshire Hathaway Home Services NW Real Estate 9600 SW Barnes Rd, Suite 100 Portland, OR 97225	Business phone # (503) 292-9393 Mobile phone # (optional) (503) 969-6193 E-mail: todd@theknudsens.com

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: Marc A Hayes **Signature:** MAY
Date: 9/6/2017 **Special instructions regarding site access:**

Project and Site Information

Project Name: NW Leahy Road	Latitude: 45.524038° decimal degree - centroid of site or start & end points of linear project	Longitude: -122.783329°
Proposed Use: Residential development	Tax Map # 1N135CB	Tax Lot(s) 2300
Project Street Address (or other descriptive location): 10345 NW Leahy Rd	Tax Map #	Township 1N Range 1W Section 35CB QQ NW/SW
City: Portland	Tax Lot(s)	Use separate sheet for additional tax and location information
County: Washington	Waterway: Unnamed Trib #1	River Mile: 1

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: Kim Blaflora, Schott & Associates 21018 NE Hwy 99E Aurora, OR 97002	Phone # (503) 678-6007 Mobile phone # (if applicable) E-mail: kim@schottandassociates.com
---	---

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.
Consultant Signature: Kim Blaflora **Date:** 9/6/2017

Primary Contact for report review and site access is Consultant Applicant/Owner Authorized Agent

Wetland/Waters Present? Yes No **Study Area size:** 3.14 **Total Wetland Acreage:** 0.0440

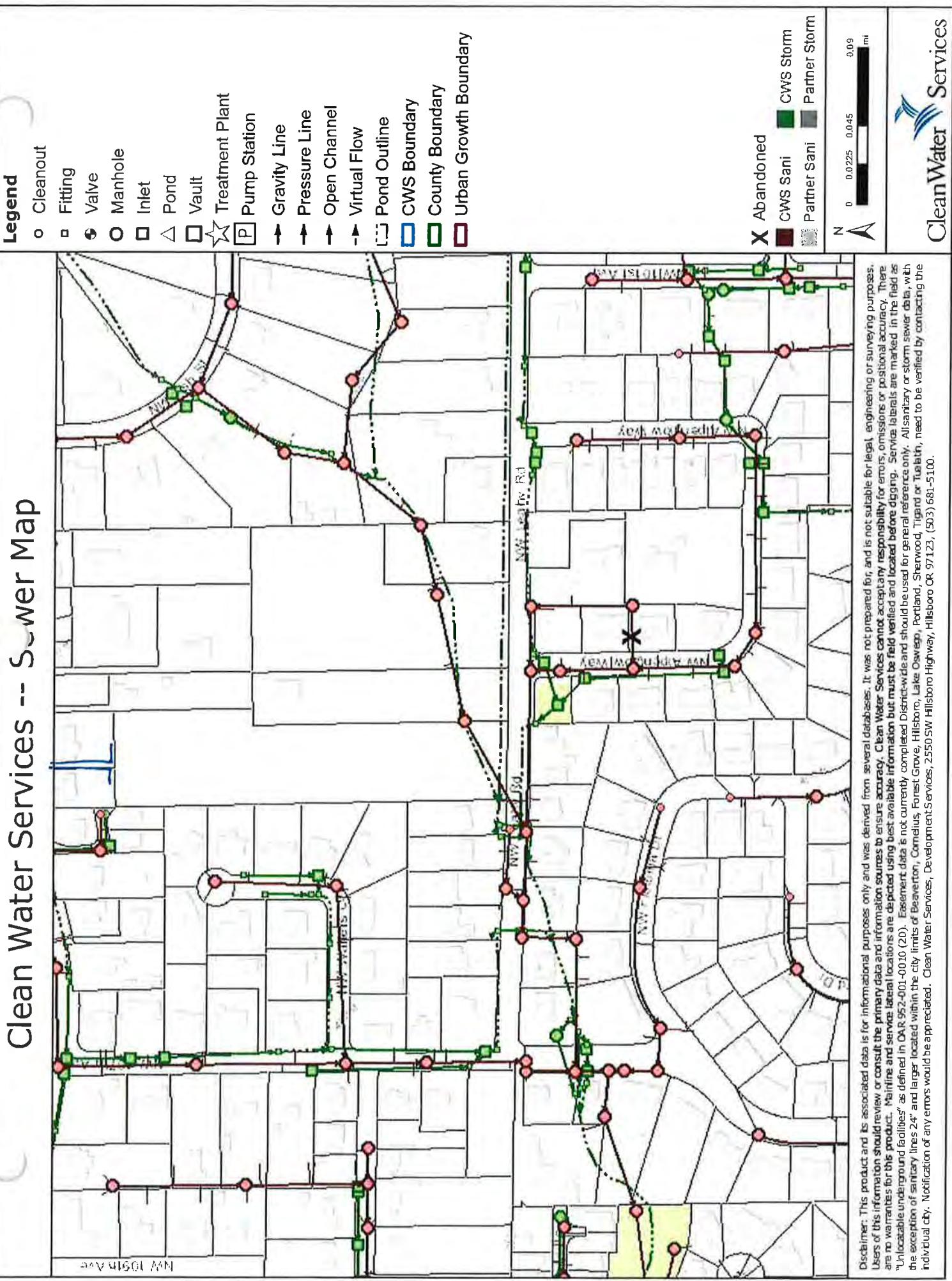
Check Applicable Boxes Below

- | | |
|---|--|
| <input type="checkbox"/> R-F permit application submitted | <input type="checkbox"/> Fee payment submitted \$ _____ |
| <input type="checkbox"/> Mitigation bank site | <input type="checkbox"/> Fee (\$100) for resubmittal of rejected report |
| <input type="checkbox"/> Industrial Land Certification Program Site | <input type="checkbox"/> Request for Reissuance. See eligibility criteria. (no fee) |
| <input type="checkbox"/> Wetland restoration/enhancement project (not mitigation) | DSL # _____ Expiration date _____ |
| <input type="checkbox"/> Previous delineation/application on parcel
If known, previous DSL # _____ | <input type="checkbox"/> LWI shows wetlands or waters on parcel
Wetland ID code _____ |

For Office Use Only

DSL Reviewer: _____	Fee Paid Date: _____ / _____ / _____	DSL WD # _____
Date Delineation Received: _____ / _____ / _____	Scanned: <input type="checkbox"/> Electronic: <input type="checkbox"/>	DSL App.# _____

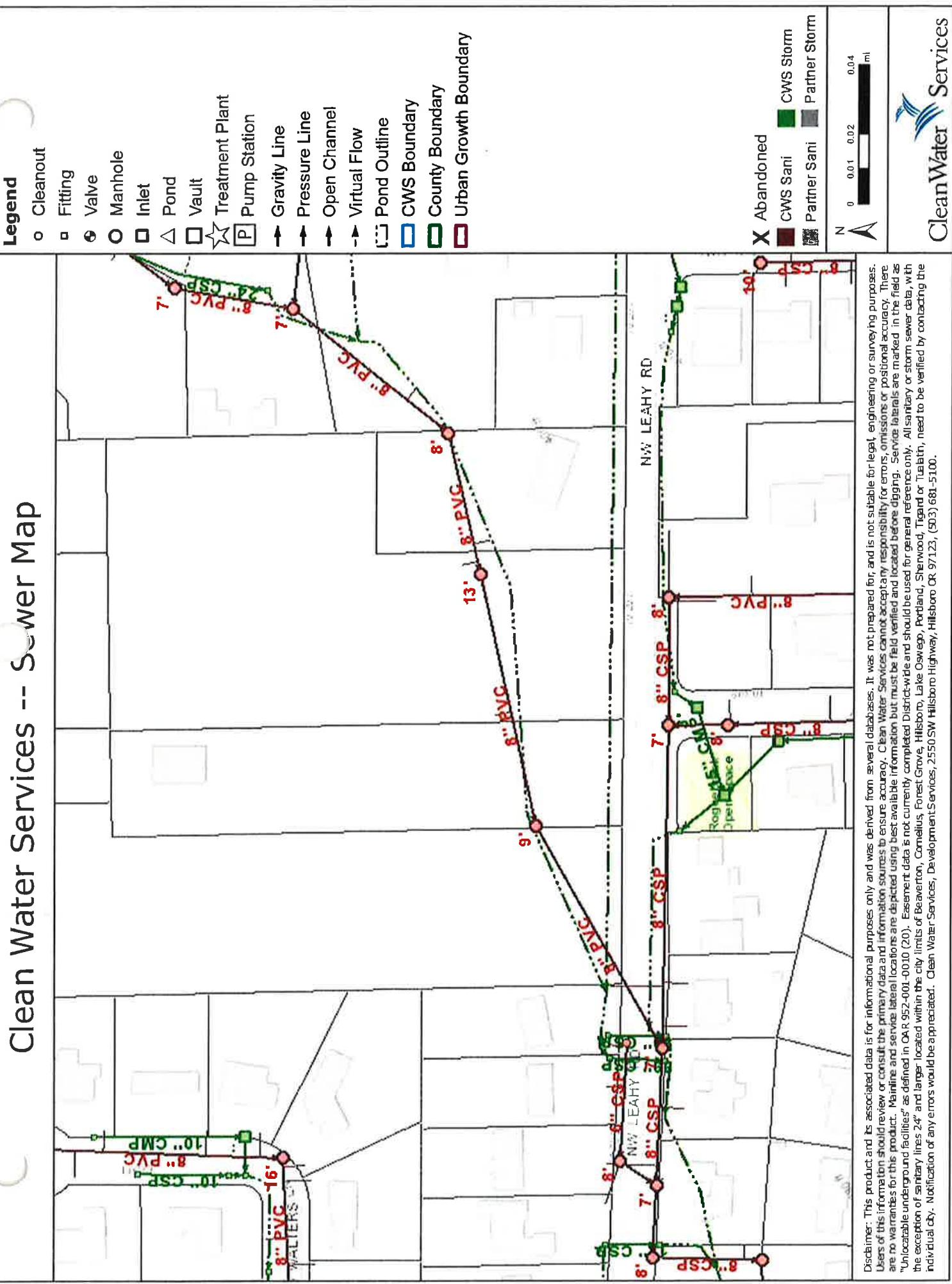
Clean Water Services -- Sewer Map



Disclaimer: This product and its associated data is for informational purposes only and was derived from several databases. It was not prepared for, and is not suitable for legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ensure accuracy. Clean Water Services cannot accept any responsibility for errors, omissions or positional accuracy. There are no warranties for this product. Mainline and service lateral locations are depicted using best available information but must be field verified and located before digging. Service laterals are marked in the field as "Unlocatable underground facilities" as defined in OAR 952-010-010 (2D). Easement data is not currently completed District-wide and should be used for general reference only. All sanitary or storm sewer data, with the exception of sanitary lines 4"

" and larger located within the city limits of Beaverton, Cornelius, Forest Grove, Hillsboro, Lake Oswego, Portland, Sherwood, Tigard or Troutdale, need to be verified by contacting the individual city. Notification of any errors would be appreciated. Clean Water Services, Development Services, 2550 SW Hillsboro Highway, Hillsboro OR 97123, (503) 681-5100.

Clean Water Services -- Sewer Map



Legend

- Approximate Study Site Tax Lot Boundary: ~3 acres
-  Wetlands: 1,941 sq. ft.
-  Stream Corridor: 1,428 sq. ft.
-  Ditch: 131 sq. ft.
- Contours: 2-ft. Interval
-  Sample Plots
-  Photo Points
-  Pipe Outlet
-  Feature Continues Offsite

Wetland 1:
444 sq. ft.

Wetland 2:
1,496 sq. ft.

Mapping Method and Precision Statement: The mapped features were based on vegetation, soils, and hydrology, as well as OHWM data gathered in the field by Schott & Associates. The sample plots and drainage boundaries were recorded utilizing a Trimble Geo XT hand-held unit and post-processed to a +/- 3 foot accuracy. The GPS data were then imported into ArcGIS software to produce maps.

NW Leahy Rd

Date: 8/16/2019

Data Source: ESRT, 2019; Washington
County Intermap, 2019

DSL WD # 2019-0503
Approval Issued 10/09/2019
Approval Expires 10/09/2024

Figure 6. Wetland Delineation Map

NW Leahy Road Project Site: S&A # 2708

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

Fully completed and signed report cover forms and applicable fees are required before report review timelines are initiated by the Department of State Lands. Make checks payable to the Oregon Department of State Lands. To pay fees by credit card, go online at: <https://apps.oregon.gov/DSL/EPS/program?key=4>.

Attach this completed and signed form to the front of an unbound report or include a hard copy with a digital version (single PDF file of the report cover form and report, minimum 300 dpi resolution) and submit to: Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279. A single PDF of the completed cover form and report may be e-mailed to: Wetland_Delineation@dsi.state.or.us. For submittal of PDF files larger than 10 MB, e-mail DSL Instructions on how to access the file from your ftp or other file sharing website.

Contact and Authorization Information

<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> Owner Name, Firm and Address: Roy M. Hayes Living Trust 10345 NW Leahy Rd Portland, OR 97228	Business phone # (808) 696-4045 Mobile phone # (optional) (808) 291-5578 E-mail: mhayes@owassociatescpas.com
--	--

<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address (if different): Todd Knudsen Benkshire Hathaway Home Services NW Real Estate 9600 SW Barnes Rd, Suite 100 Portland, OR 97228	Business phone # (503) 292-8393 Mobile phone # (optional) (503) 868-6193 E-mail: todd@theknudsens.com
---	---

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.

Typed/Printed Name: Marc A Hayes Signature: MMAG
Date: 9/16/2017 Special Instructions regarding site access:

Project and Site Information

Project Name: NW Leahy Road	Latitude: 46.524038° Longitude: -122.783329° decimal degree - centroid of site or start & end points of linear project
Proposed Use: Residential development	Tax Map # 1N135CB Tax Lot(s) 2300 Tax Map # Tax Lot(s)
Project Street Address (or other descriptive location): 10345 NW Leahy Rd	Township 1N Range 1W Section 36CB QQ NW/SW Use separate sheet for additional tax and location information
City: Portland	Waterway: Unnamed Trib #1 River Mile: 1
County: Washington	

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: Kim Blafora, Schott & Associates 21018 NE Hwy 99E Aurora, OR 97002	Phone # (503) 878-6007 Mobile phone # (if applicable) E-mail: kim@schottandassociates.com
--	---

The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge.

Consultant Signature: Kim Blafora Date: 9/16/2017

Primary Contact for report review and site access is Consultant Applicant/Owner Authorized Agent

Wetland/Waters Present? Yes No Study Area size: 3.14 Total Wetland Acreage: 0.0440

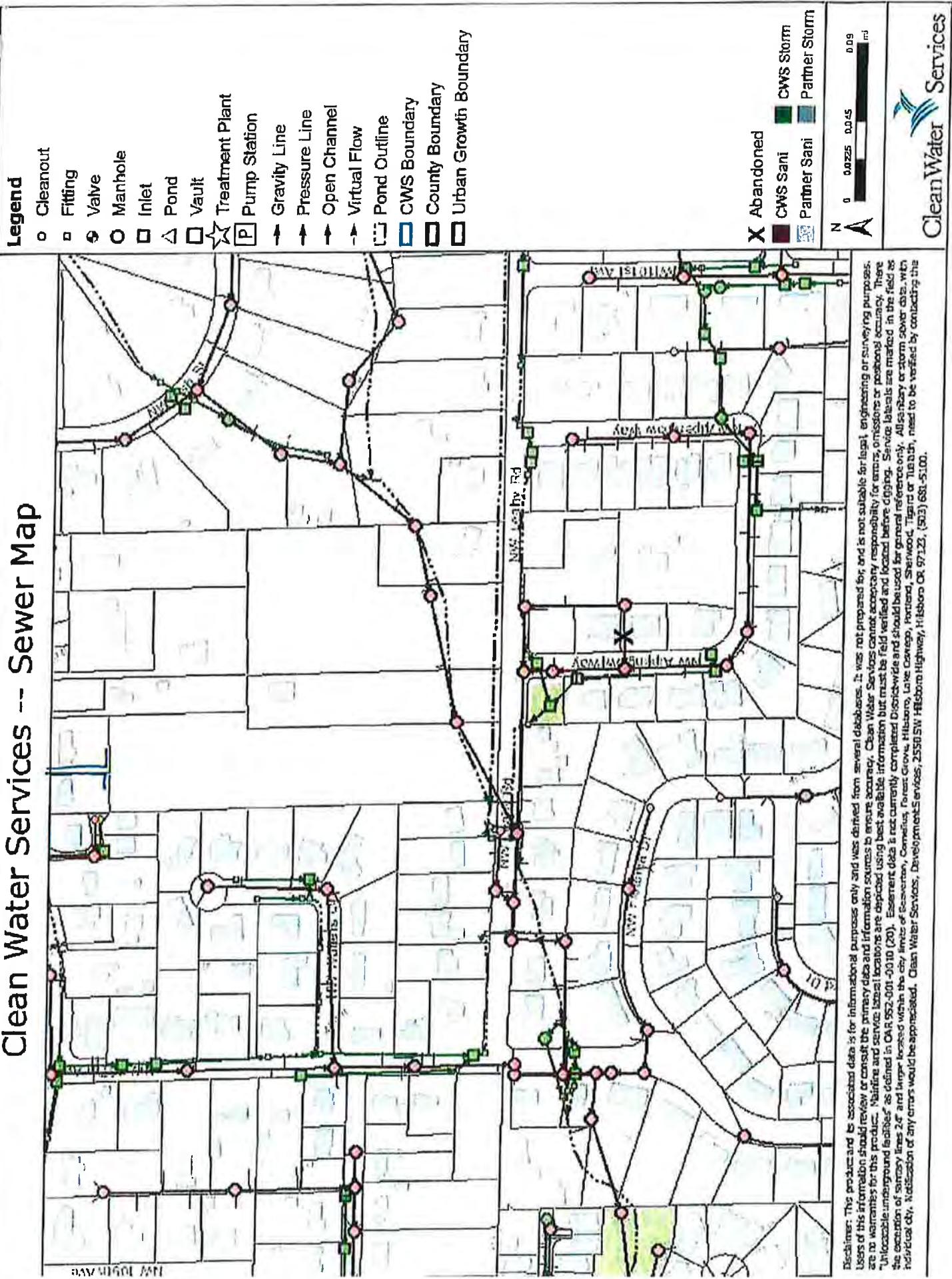
Check Applicable Boxes Below

<input type="checkbox"/> R-F permit application submitted	<input type="checkbox"/> Fee payment submitted \$ _____
<input type="checkbox"/> Mitigation bank site	<input type="checkbox"/> Fee (\$100) for resubmittal of rejected report
<input type="checkbox"/> Industrial Land Certification Program Site	<input type="checkbox"/> Request for Relissuance. See eligibility criteria. (no fee)
<input type="checkbox"/> Wetland restoration/enhancement project (not mitigation)	DSL # _____ Expiration date _____
<input type="checkbox"/> Previous delineation/application on parcel If known, previous DSL # _____	<input type="checkbox"/> LWI shows wetlands or waters on parcel Wetland ID code _____

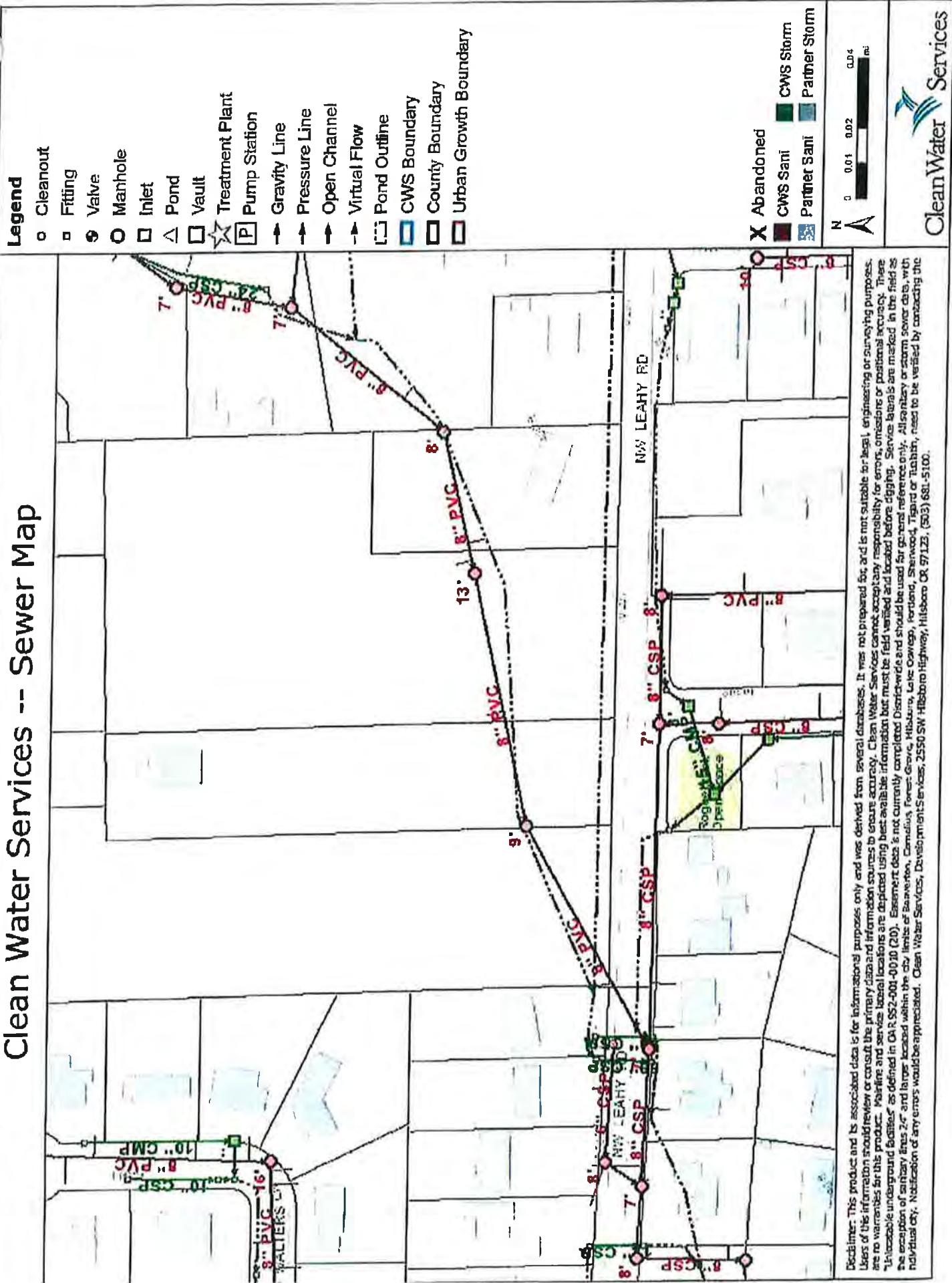
For Office Use Only

DSL Reviewer: _____	Fee Paid Date: _____ / _____ / _____	DSL WD #: _____
Date Delineation Received: _____ / _____ / _____	Scanned: <input type="checkbox"/> Electronic: <input type="checkbox"/>	DSL App.#: _____

Clean Water Services -- Sewer Map



Clean Water Services -- Sewer Map



Preliminary Storm Drainage Report

Estates at Leahy Road

Washington County, Oregon



Applicant:

Westwood Homes, LLC.
1270 NW Cornell Rd.
Portland, OR 97229
503.330.2215

Owner:

Roy M. Hayes Living Trust
10345 & 10405 SW Leahy Rd.
Portland, OR 97229
503.330.2215

Engineer:

Pioneer Design Group, Inc.
9020 SW Washington Sq. Rd.
Suite 170
Portland, Oregon 97223
503.643.8286
bfitch@pd-grp.com



VALID THROUGH 12-31-21

Date: August 31th, 2021
Prepared by: Cory Schermesser, EIT
Reviewed by: Brent Fitch, PE
PDG Job No. 285-020

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TECHNICAL APPENDIX

APPENDIX 'A' – CLEAN WATER SERVICES MAPS

APPENDIX 'B' – STORMWATER DETENTION FACILITY REPORT

APPENDIX 'C' – DRAINAGE HAZARD AREA ANALYSIS

APPENDIX 'D' – DOWNTSTREAM CULVERT ANALYSIS

1.0 INTRODUCTION

This report represents the **preliminary** storm drainage and stormwater analysis for the Leahy Road Subdivision project. The basis of this report is to comply with Washington County, Clean Water Services (CWS), and the State of Oregon's regulations and engineering standards as well as the latest edition of the Oregon Plumbing Specialty Code (OSPC). Compiled in this report are the design criteria for the site, the hydrologic methodology, and the **preliminary** drainage analysis.

2.0 SITE DESCRIPTION AND LOCATION

The proposed project is a 15-lot subdivision for single-family detached homes. The property is identified as tax lot 02300 of Tax Map 1N135CB and is approximately 4.49 acres. The site is currently addressed as 10345 NW Leahy Road and is located north of the intersection of NW Leahy Road and NW Alpenglow Way. The property is zoned R-5, single-family residential by Washington County's land use ordinance and is within the Cedar Hills – Cedar Mill Community Plan area.

3.0 EXISTING CONDITIONS

The site contains existing gravel driveway, one concrete walk, and two out-buildings. The out-buildings on site will be removed with the project.

There are various evergreen and deciduous trees throughout the site. Most of the trees on site will be removed with the development.

The site has frontage along NW Leahy Road. There are existing storm, sanitary and water systems in the existing street to serve the site.

The site is surrounded by R-5 residential zoned lots in all directions.

3.1 Site Topography

The property is sloping from the northeast to the southwest. The high point of the site is at the North side corner of the property line at an elevation of approximately 427 feet. The low point of the site is at the south west property line at an approximate elevation of 365 ft.

3.2 Soil Type

The predominant soil found on site is Cornelius and Kinton silt loam and Delena silt loam with the corresponding hydrologic soil group (HSG) designations 'C' and 'D', as shown on the attached Natural Resources Conservation Service (NRCS) soil survey for Washington County.

3.3 Runoff Curve Numbers

Predeveloped pervious areas will use a runoff curve number (RCN) of 75 as per Clean Water Services' *Design and Construction Standard's for Sanitary and Storm Water Management* (R&O 19-22) Section 4.08.6d. Developed pervious areas will use a runoff curve number (RCN) of 74 corresponding to "Open Space" cover type (HSG designation 'C') in good condition. A runoff curve number of 98 will be used for all predeveloped and developed impervious areas (refer to the *SCS Runoff Curve Numbers Exhibit*).

RUNOFF CURVE NUMBERS		
Land Description	Existing RCN	Proposed RCN
Predeveloped Pervious	--	82
Open Space, Good Condition	77	--
Impervious	98	98

4.0 PROPOSED IMPROVEMENTS

We will be constructing impervious surfaces as a result of the public and private street improvements, and private driveways along with the eventual homes and sidewalks. Public utilities will be extended throughout the site for the use of the proposed lots. This project proposes to construct a stormwater facility located in the southeast corner of the site to accommodate for water quality treatment and detention for the currently proposed subdivision.

4.1 Hydrology/Hydraulic Methodology

Using the Santa Barbara Urban Hydrograph (SBUH) method based on a Type 1A rainfall distribution, the site has been analyzed to determine the proposed peak runoff rates for the 2, 5, 10, and 25-year 24-hour storm event. The SBUH method uses runoff curve numbers in conjunction with the property's hydrologic soil group to model the site's permeability.

A predeveloped time of concentration of 24.46 minutes and a developed time of concentration of 9.33 minutes were calculated using the methodology outlined in the TR-55 technical manual (*refer to the Time of Concentration Calculations and Exhibits*).

Rainfall depths for all storm events used in the calculations and design of the proposed storm drainage system are found in latest edition of Clean Water Services (CWS) Design and Construction Standards and as shown below.

24-Hour Rainfall Depths (CWS)				
Recurrence Interval, Years	2	5	10	25
24-Hour Depths, Inches	2.50	3.10	3.45	3.90

4.2 Water Quality

As required by Clean Water Services, we will treat runoff from any new impervious surface created as a result of the proposed development and for any existing impervious areas to remain. The water quality facility will be designed to treat storm water generated by 0.36 inches of precipitation falling in 4 hours with an average storm return period of 96 hours. The water quality facility, in conjunction with the sumped catch basins, will remove a minimum of 65% of the Total Phosphorous (TP) from the storm water runoff.

Runoff for the development will be conveyed into a proposed water quality swale located in the southeast corner of the site providing treatment for all impervious surfaces relevant to the proposed development in accordance with Clean Water Services' *Design and Construction Standard's for Sanitary and Storm Water Management* (R&O 19-22) Sections 4.05 and 4.06.

The water quality facility will treat a total of 65,247 square feet of new impervious area from Basin 1. A water quality manhole upstream of the water quality pond will provide pretreatment for the stormwater removing trash, sediment, and debris from the runoff.

The following summarizes the water quality pond parameters of the development:

ESTATES AT LEAHY ROAD - WATER QUALITY POND
• <i>Min. Pond Volume = 1,957 cuft. (See WQ Pond Calculations)</i>
• <i>Water Quality Depth = 1.62 ft.</i>
• <i>Side Slopes= 3:1</i>
• <i>Design Inflow = 0.14 ft./s</i>

Due to the existing topography, 11,383 square feet of new impervious area and 6,047 square feet of modified impervious area cannot be collected and conveyed to the water

quality pond. This area is called out as developed Basin 2 (see attached Impervious Area Exhibit). The stormwater will be collected and discharged to the creek. The applicant is proposing to pay fee-in-lieu.

4.3 Detention

The property will be analyzed for water quantity control as required by R&O 19-22 for hydromodification. Per the CWS Hydromodification Map, the site lies in an area with a Hydromod Risk Level of *high*. This site is considered **Developed** and our developed area is 87,026 sf, thus greater than 80,000 sf, quantifying the site as *large*. Per Table 4-2 of CWS R&O 19-22, this categorizes the site as **Category 3**. Therefore, the site is subject to peak flow matching per CWS R&O Section 4.08.6. The post developed peak flow rates for the 2-, 5-, and 10-year storm events will be attenuated to the half the 2, the 5, the 10, and the 25-year predeveloped flow rates respectively. (See tables below and *Appendix 'B' Stormwater Detention Facility Report*). A flow control manhole will attenuate the flow rates for the facility as follows:

Table 4.3c – ESTATES AT LEAHY ROAD – DETENTION SUMMARY (R&O 19-22)					
Storm Event (yr)	Pre-Developed (cfs)	Developed (cfs)	Required Released Outflow (cfs)	Actual Released Outflow (cfs)	Water Surface Elevation In Facility (ft.)
WQ	-	0.22	0.01	0.01	381.20
2	0.96	1.22	0.48(1/2-2yr)	0.35	381.63
5	1.49	1.79	1.49	0.74	381.82
10	1.82	2.14	1.82	1.07	382.02
25	2.27	2.59	2.27	1.90	382.21

Pond Bottom = 379.00

25-year Pond Volume = 7,404 cuft

Freeboard Elevation = 383.71

In addition, there is one known downstream restriction onsite that consists of two existing side-by-side driveway culverts. The applicant is proposing to upsize these existing culverts and to a box culvert to safely convey the 25-year storm event for the entire associated basin (refer to *Appendix 'D' Downstream Culvert Analysis*).

4.4 Conveyance

Runoff from the private streets and the proposed lots will be conveyed to the proposed stormwater facility via sumped catch basins and area drains, manholes, and underground storm drain lines. Treated stormwater will be discharged from the stormwater facility and tee into the proposed culvert, which drains to the creek. Per the requirements of CWS, the drainage system has been designed to convey the 25-year storm event using a Manning's 'n' value of 0.013 without surcharging the proposed underground pipe network. The entire shed area can be safely conveyed in a 12" pipe with a 0.5% slope (refer to the *Conveyance Calculations*).

5.0 DOWNSTREAM ANALYSIS

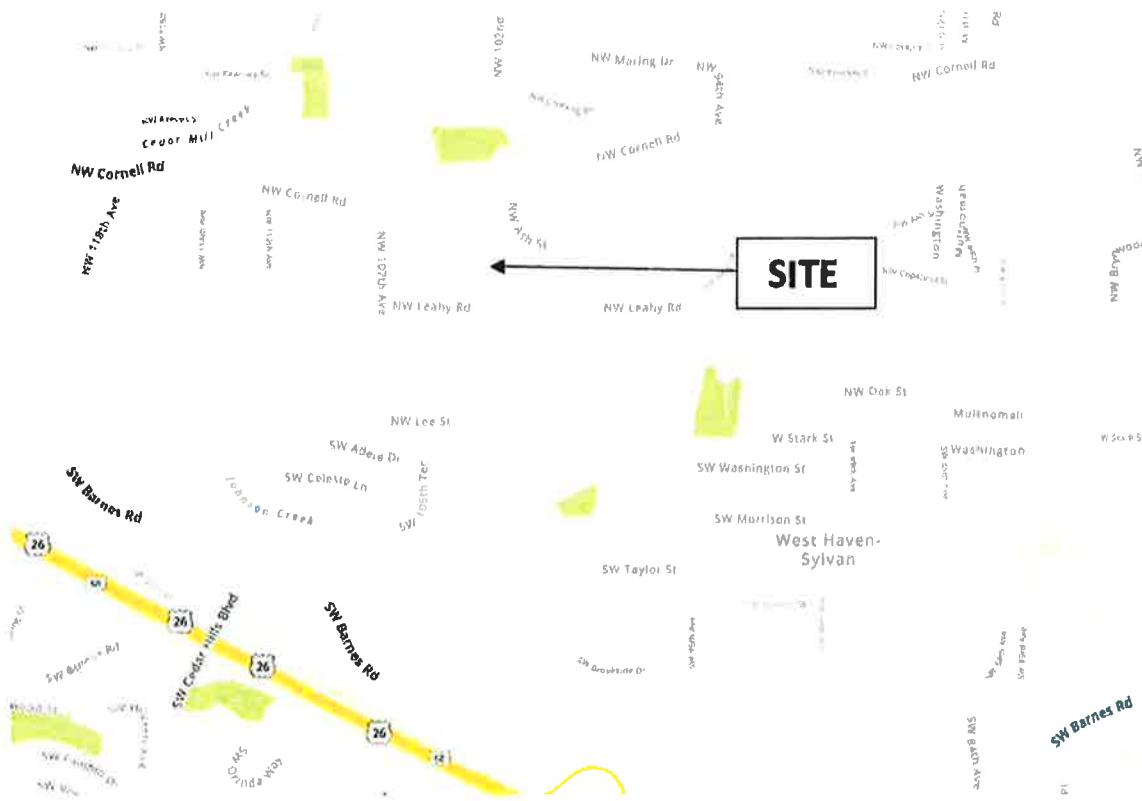
Stormwater from the project is ultimately conveyed into Johnson Creek. The existing tributary running through the site has been delineated as a Drainage Hazard Area (DHA). The 25-year flood elevations calculated through a DHA analysis are approximately 368.90 feet at the western boundary of the existing roadway, and 380.11 feet upstream at the eastern boundary. The applicant is not proposing an alteration to the existing DHA (refer to *Appendix 'D' – Drainage Hazard Area Analysis*). The 100-year flood plain has been mapped by FEMA southwest of the site, south of NW Leahy Road (refer to *Appendix 'B' – FIRM Panel*).

In addition, the existing tributary within the project boundary was also analyzed for capacity relative to the proposed development and the contributing basin. The stream parameters were based on surveyed information acquired with the project. The findings indicate the stream has adequate capacity to convey the stormwater runoff (refer to *Appendix 'D'* for stream cross sections).

6.0 CONCLUSION

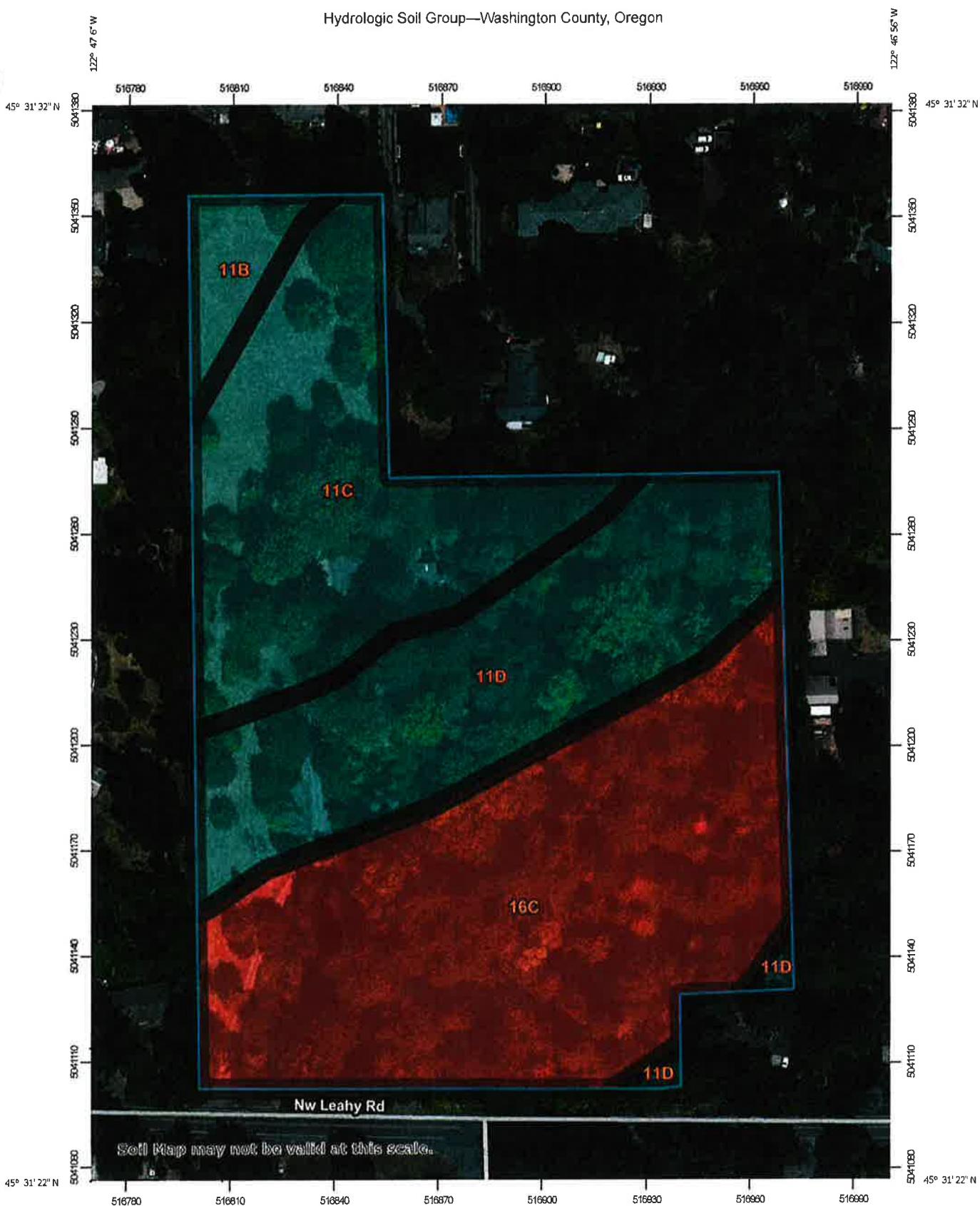
Based on the supporting stormwater calculations and attached analysis, it is the opinion of Pioneer Design Group that the development of the Estates at Leahy Park project will not adversely affect the existing downstream drainage system or adjacent property owners. Water quality treatment for all new impervious areas created by the development as well as stormwater detention will be provided by an on-site water quality pond; therefore, all the code requirements associated with the Washington County and Clean Water Services' design and construction standards have been met for this project.

7.0 VICINITY MAP



ENGINEERING CALCULATIONS AND SPREADSHEETS

Hydrologic Soil Group—Washington County, Oregon



Map Scale: 1:1,490 if printed on A portrait (8.5" x 11") sheet.
Meters
0 20 40 60 80 100 120
Feet
0 50 100 150 200 250 300
N
122° 47' 6" W 122° 46' 56" W
45° 31' 22" N 45° 31' 32" N



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

5/13/2021
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)		C
		C/D
		D
Soils		Not rated or not available
Soil Rating Polygons		A
		A/D
		B
		B/D
		C
		C/D
		D
		Not rated or not available
Water Features		
		Streams and Canals
Transportation		Rails
		Interstate Highways
		US Routes
		Major Roads
		Local Roads
Background		Aerial Photography
Soil Rating Lines		A
		A/D
		B
		B/D
		C
		C/D
		D
		Not rated or not available
Soil Rating Points		A
		A/D
		B
		B/D

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Washington County, Oregon
Survey Area Data: Version 18, Jun 11, 2020

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

Date(s) aerial images were photographed: Aug 1, 2019—Sep 12, 2019

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
11B	Cornelius and Kinton silt loams, 2 to 7 percent slopes	C	0.3	3.7%
11C	Cornelius and Kinton silt loams, 7 to 12 percent slopes	C	2.2	26.1%
11D	Cornelius and Kinton silt loams, 12 to 20 percent slopes	C	2.2	26.8%
16C	Delena silt loam, 3 to 12 percent slopes	D	3.6	43.5%
Totals for Area of Interest			8.3	100.0%



Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

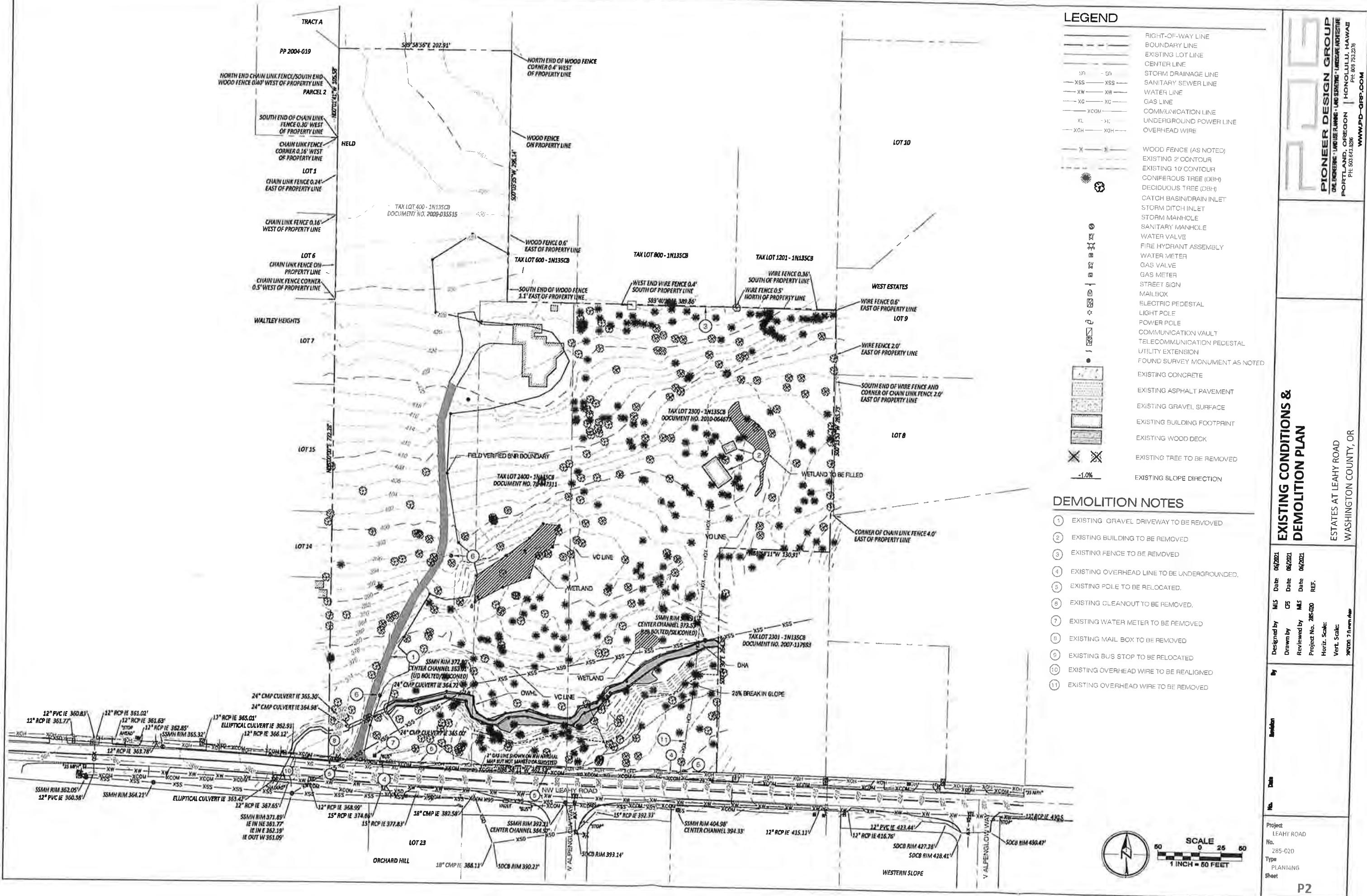
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

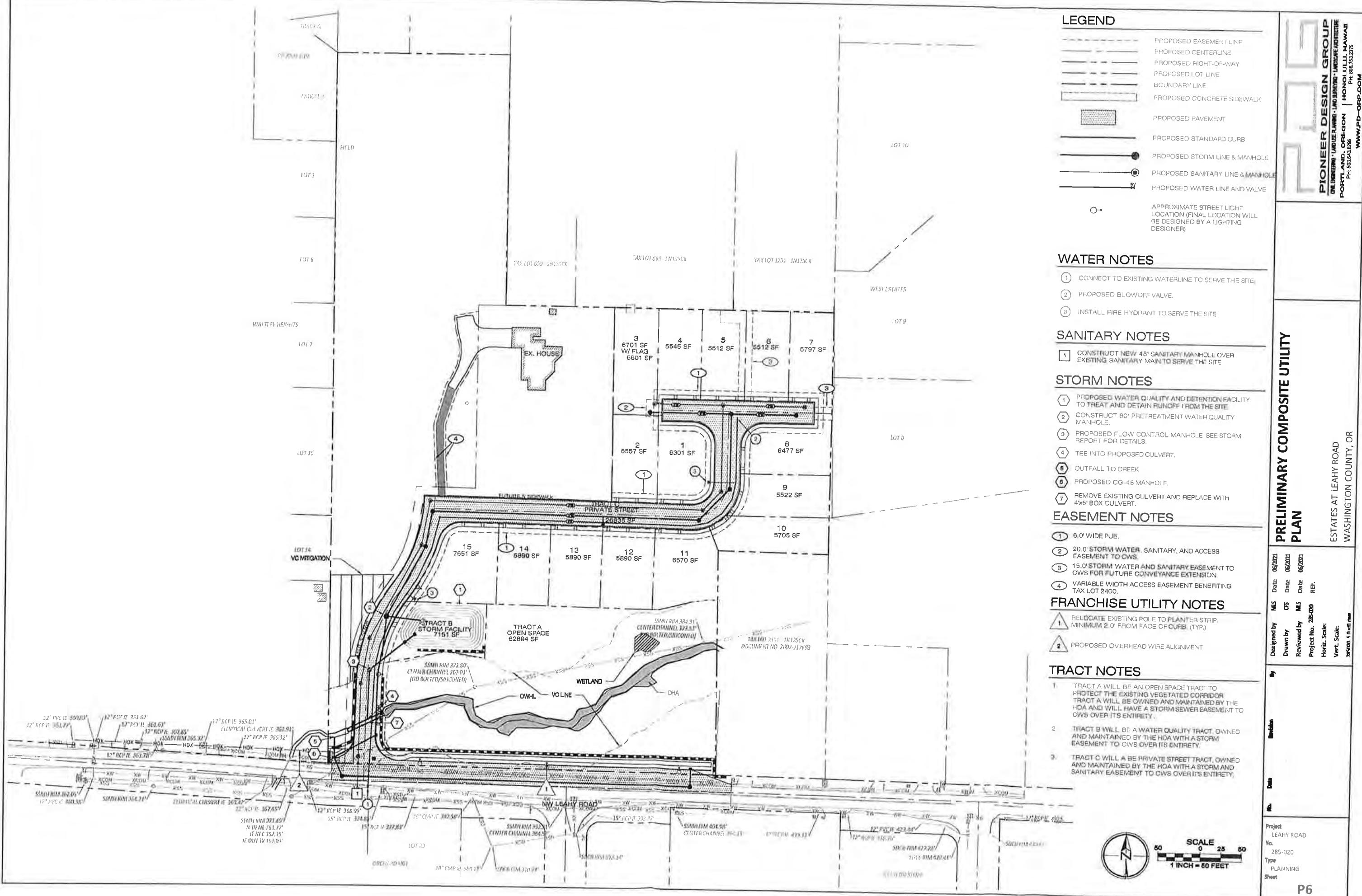
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher





SOIL FEATURES FOR WASHINGTON COUNTY

Soil name and map symbol	Hydro-logic group	Flooding		
		Frequency	Duration	Months
Aloha: 1	C	NONE	NONE	NONE
Amity: 2	C	NONE	NONE	NONE
Astoria: 3E, 3F	B	NONE	NONE	NONE
Briedwell: 4B, 5B, 5C, 5D	B	NONE	NONE	NONE
Carlton: 6B, 6C	B	NONE	NONE	NONE
Cascade: 7B, 7C, 7D, 7E, 7F	C	NONE	NONE	NONE
Chehalem: 8C	C	NONE	NONE	NONE
Chehalis: 9, 10	B	COMMON	BRIEF	NOV-MAR
Cornelius: 11B, 11C, 11D, 11E, 11F: Cornelius part	C	NONE	NONE	NONE
Kinton part	C	NONE	NONE	NONE
Cornelius Varient: 12A, 12B, 12C	C	NONE	NONE	NONE
Cove: 13, 14	D	COMMON	BRIEF	DEC-APR
Dayton: 15	D	NONE	NONE	NONE
Delena: 16C	D	NONE	NONE	NONE
Goble: 17B, 17C, 17D, 17E, 18E, 18F	C	NONE	NONE	NONE
Helvetica: 19B, 19C, 19D, 19E	C	NONE	NONE	NONE
Hembre: 20E, 20F, 20G	B	NONE	NONE	NONE
Hillsboro: 21A, 21B, 21C, 21D	B	NONE	NONE	NONE
Hubberly: 22	D	NONE	NONE	NONE
Jory: 23B, 23C, 23D, 23E, 23F	C	NONE	NONE	NONE
Kilchis: 24G				
Kilchis part	C	NONE	NONE	NONE
Klickitat part	B	NONE	NONE	NONE

RUNOFF CURVE NUMBERS (TR55)

Table 2-2a: Runoff curve numbers for urban areas¹

Cover description	Average percent impervious area ²	CN for hydrologic soil group			
		A	B	C	D
Cover type and hydrologic condition					
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ³ :					
Poor condition (grass cover <50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover >75%)		39	61	74	80
Impervious areas:					POST
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)					PRE/ POST
		98	98	98	
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
<i>Developing urban areas</i>					
Newly graded areas (pervious areas only, no vegetation) ⁵	77	86	91	94	
Idle lands (CNs are determined using cover types similar to those in table 2-2c)					

1: Average runoff condition, and $I_a = 0.2S$.

2: The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

3: CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4: Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5: Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

MANNING'S "n" VALUES

SHEET FLOW EQUATION MANNING'S VALUES		n_s
Smooth Surfaces (concrete, asphalt, gravel, or bare hand packed soil)		0.011
Fallow Fields or loose soil surface (no residue)		0.05
Cultivated soil with residue cover ($\leq 20\%$)		0.06
Cultivated soil with residue cover ($> 20\%$)		0.17
Short prairie grass and lawns		0.15
Dense grasses	0.24	
Bermuda grasses		0.41
Range (natural)		0.13
Woods or forest with light underbrush		0.40
Woods or forest with dense underbrush		0.80

SHALLOW CONCENTRATED FLOW (after initial 300 ft of sheet flow, R = 0.1)		k_s
Forrest with heavy ground litter and meadows ($n = 0.010$)		3
Brushy ground with some trees ($n = 0.060$)	5	
Fallow or minimum tillage cultivation ($n = 0.040$)		8
High grass ($n = 0.035$)		9
Short grass, pasture and lawns ($n = 0.030$)		11
Nearly bare ground ($n = 0.25$)		13
Paved and gravel areas ($n = 0.012$)		27

CHANNEL FLOW (Intermittent) (At the beginning of all visible channels, R = 0.2)		k_c
Forested swale with heavy ground cover ($n = 0.10$)		5
Forested drainage course/ravine with defined channel bed ($n = 0.050$)		10
Rock-lined waterway ($n = 0.035$)		15
Grassed waterway ($n = 0.030$)		17
Earth-lined waterway ($n = 0.025$)	20	
CMP pipe ($n = 0.024$)		21
Concrete pipe ($n = 0.012$)		42
Other waterways and pipe $0.508/n$		

CHANNEL FLOW (continuous stream, R = 0.4)		k_c
Meandering stream ($n = 0.040$)		20
Rock-lined stream ($n = 0.035$)		23
Grass-lined stream ($n = 0.030$)		27
Other streams, man-made channels and pipe ($n = 0.807/n$)		



IMPERVIOUS AREA CALCULATIONS

JOB NUMBER: 285-020

PROJECT: Estates at Leahy Park

FILE: 285-020_hydro_planning

NEW IMPERVIOUS AREA

BASIN 1

15 LOTS AT 2,640-SF IMPERVIOUS AREA / LOT	39,600.00 ft ²	
SIDEWALKS	5,986.00 ft ²	
STREET PAVEMENT (PRIVATE)	19,661.00 ft ²	
	65,247.00 ft²	1.50 ac

BASIN 2

SIDEWALKS	2,548.00 ft ²	
MODIFIED STREET PAVEMENT (PUBLIC)	6,047.00 ft ³	
STREET PAVEMENT (PUBLIC)	5,491.00 ft ²	
STREET PAVEMENT (PRIVATE)	3,344.00 ft ²	
	17,430.00 ft²	0.40 ac

EXISTING IMPERVIOUS AREA

BUILDINGS	3,575.00 ft ²	
GRAVEL AT 60% IMPERVIOUS	2,517.00 ft ²	
CONCRETE	2,376.00 ft ²	
	8,468.00 ft²	0.19 ac

Basin 1 Area

121,742.00 ft² **2.79 ac**

Basin 2 Area

22,580.00 ft² **0.52 ac**

Existing Impervious Area

8,468.00 ft² **0.19 ac**

% Impervious

7.0 %

Proposed Impervious Area (Basin 1)

65,247.00 ft² **1.50 ac**

% Impervious

53.59 %

Proposed Impervious Area (Basin 2)

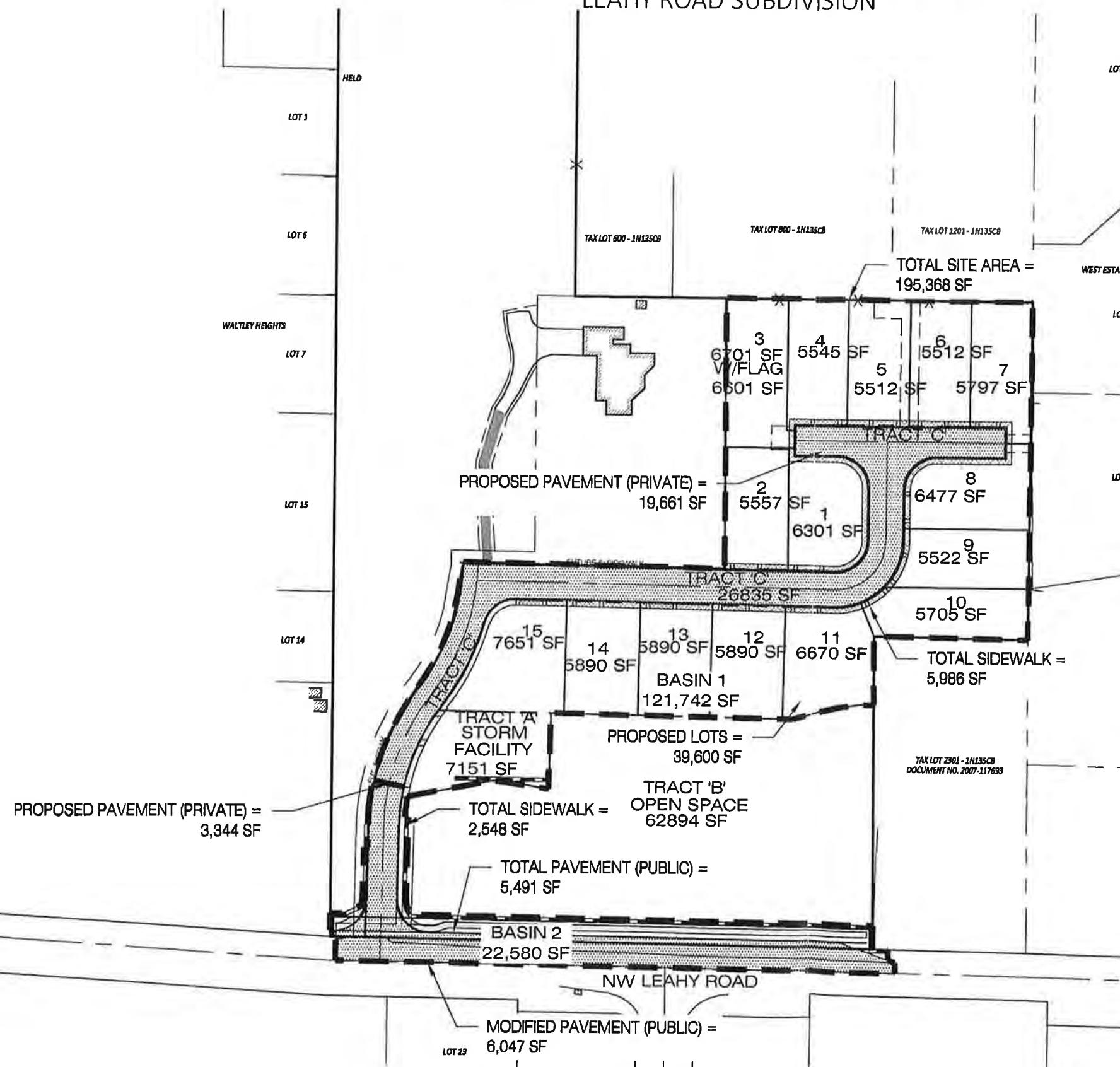
17,430.00 ft² **0.40 ac**

% Impervious

77.19 %

PROPOSED IMPERVIOUS AREA

LEAHY ROAD SUBDIVISION

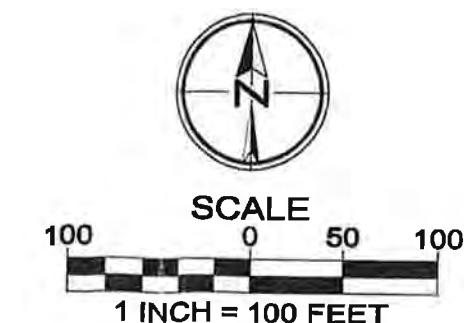


IMPERVIOUS AREA (BASIN 1)

15 LOTS :	39,600 S.F.
PAVEMENT (PRIVATE):	19,661 S.F.
SIDEWALK:	5,986 S.F.
TOTAL:	65,247 S.F.
BASIN AREA:	121,742 S.F.
SITE AREA:	195,368 S.F.

IMPERVIOUS AREA (BASIN 2)

MODIFIED PAVEMENT: (PUBLIC)	6,047 S.F.
PAVEMENT (PUBLIC):	5,491 S.F.
PAVEMENT (PRIVATE):	3,344 S.F.
SIDEWALK:	2,548 S.F.
TOTAL:	17,430 S.F.
BASIN AREA:	22,580 S.F.
SITE AREA:	195,368 S.F.



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Designed by	MLS	Date	06/2021
Drawn by	CFS	Date	06/2021
Reviewed by	BEF	Date	06/2021
Project No. 285-020	REF.		
Horiz. Scale:			
Vert. Scale:			

IMPERVIOUSAREA.DWG

Project
LEAHY ROAD

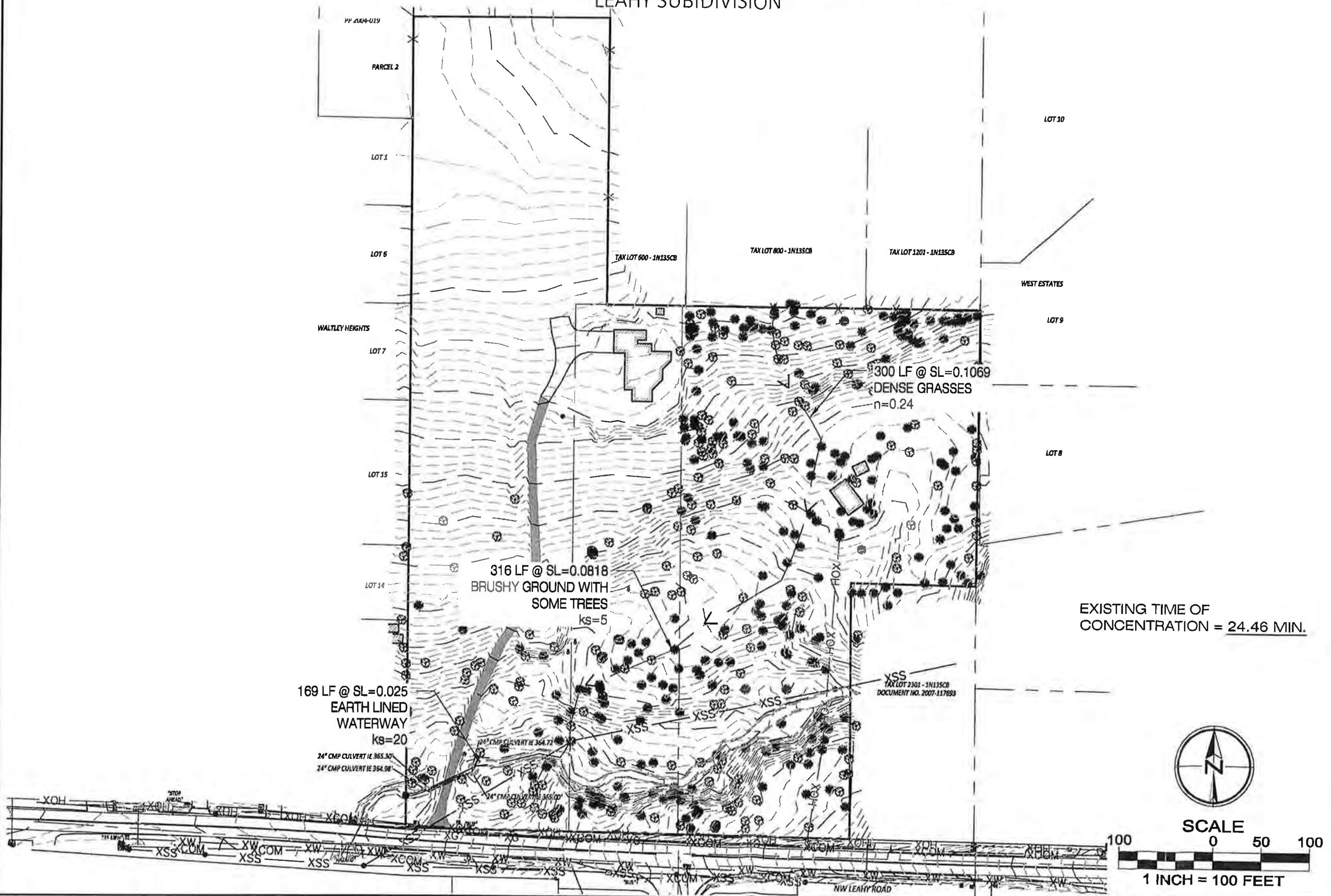
No.
285-020

Type
EXHIBIT

Sheet
1 of 1

PREDEVELOPED TIME OF CONCENTRATION

LEAHY SUBDIVISION



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Designed by	MLS	Date	05/2021
Drawn by	CFS	Date	05/2021
Reviewed by	BEF	Date	05/2021
Project No.	285-020	REF.	
Horiz. Scale:			
Vert. Scale:			
PREDEV TOC.DWG			
Project	LEAHY SUBDIVISION		
No.	285-020		
Type	PLANNING		
Sheet	1 of 1		



PREDEVELOPED TIME OF CONCENTRATION

JOB NUMBER: 285-020
 PROJECT: Estates at Leahy Park
 FILE: 285-020_hydro_planning

		Accum. Tc
LAG ONE: SHEET FLOW (FIRST 300 FEET)		
Tt = Travel time		
Manning's "n" =	0.24	
Flow Length, L =	300 ft	(300 ft. max.)
P = 2-year, 24hr storm =	2.5 in	
Slope, S _o =	0.107 ft/ft	
$T_T = \frac{(0.42)(n * L)^{0.8}}{(P)^{0.5} (S_o)^{0.4}}$	19.89 min.	19.89 min.

LAG TWO: SHALLOW CONCENTRATED FLOW (NEXT 316 FEET)		
Tc Velocity factor, k=	5	
Slope, S _o =	0.082 ft/ft	
$V = k \sqrt{S_o}$	1.43 ft/s	
Flow Length, L =	316 ft	
$T = \frac{L}{(60)(V)}$	3.68 min.	23.57 min.

LAG THREE: CHANNEL FLOW (NEXT 169 FEET)		
Tc Velocity factor, k=	20	
Slope, S _o =	0.025 ft/ft	
$V = k \sqrt{S_o}$	3.16 ft/s	
Flow Length, L =	169 ft	
$T = \frac{L}{(60)(V)}$	0.89 min.	24.46 min.

TOTAL PREDEVELOPED TIME OF CONCENTRATION (Tc) = 24.46 min.



DEVELOPED TIME OF CONCENTRATION

JOB NUMBER: 285-020
PROJECT: Estates at Leahy Park
FILE: 285-020_hydro_planning

Catchment Time	5 min.
Longest Run of Pipe	780 ft
Velocity of Flow	3 ft/s
Time in Pipe = (780 ft)/(3.00 ft/s) =	260 s

TOTAL DEVELOPED Tc = 9.33 min.



PIONEER DESIGN GROUP

EXISTING CONDITIONS - PVIOUS COMPOSITE CURVE NUMBERS

JOB NUMBER: 285-020
PROJECT: Estates at Leahy Park
FILE: 285-020_hydro_planning

TOTAL AREA= 195,368 SF

EXISTING CONDITIONS

COVER TYPE	SOIL TYPE	AREA (SF)	SOIL GRADE	CURVE NUMBER
RESIDENTIAL DISTRICT BY 1/2 ACRE LOT SIZE	11B, 11C, 11D Cornelius and Kinton silt loam	110,383	C	80
RESIDENTIAL DISTRICT BY 1/2 ACRE LOT SIZE	16C Delena silt loam	84,985	D	85

EXISTING COMPOSITE CN
(PREVIOUS)

$$\frac{(197,082 \times 80) + (151,735 \times 85)}{195,368} = 82.2$$



PIONEER DESIGN GROUP

DEVELOPED CONDITIONS - PERVERIOUS COMPOSITE CURVE NUMBERS

JOB NUMBER: 285-020
 PROJECT: Estates at Leahy Park
 FILE: 285-020_hydro_planning

TOTAL AREA= 195,368 SF

DEVELOPED CONDITIONS

COVER TYPE	SOIL TYPE	AREA (SF)	SOIL GRADE	CURVE NUMBER
OPEN SPACE "GOOD CONDITION"	11B Cornelius silt loam	110,383	C	74
	19B Helvetia silt loam			
OPEN SPACE "GOOD CONDITION"	12C Cornelius silt loam 43	84,985	D	80
	Wapato silty clay loam			

DEVELOPED COMPOSITE CN
(PERVIOUS)

$$\frac{(197,082 \times 74) + (151,735 \times 80)}{195,368} = 76.6$$



WATER QUALITY POND CALCULATIONS

JOB NUMBER: 285-020
PROJECT: Estates at Leahy Park
FILE: 285-020_hydro_planning

REFERENCES:

1. Clean Water Services R&O 07-20.
2. Discussions with Clean Water Services.

REQUIRED WATER QUALITY TREATMENT: 65% Phosphorus Removal.

PROPOSED TREATMENT METHODS:

1. Sumped Catch Basins	15%
2. Water quality Pond	50%
total	65%

DESIGN STORM

Precipitation: 0.36 inches
Storm Duration: 4 hours
Storm Return Period: 96 hours
Storm Window: 2 weeks

IMPERVIOUS AREA:

Watershed Area: 2.79 acres
Percent imp: 53.59 %
Impervious Area: 1.50 acres

$$\text{Design Inflow} = (1.4978650137741 \text{ ac}) * (43560 \text{ ft}^2/\text{ac}) * (0.36 \text{ in} / 4.0 \text{ hrs}) =$$

0.14 cfs

VOLUME CALCULATION:

$$\text{POND VOLUME} = (1.4978650137741 \text{ acres})(43560 \text{ sqft/acre})(0.36 \text{ inch})/(12 \text{ in}/\text{ft}) =$$

1,957 ft³

POND PARAMETERS:

Storage Volume (Sd)= 1,957 ft³
Storage Depth (Hd)= 3 ft (3' maximum)
Side Slopes = 3 :1

SOLVE FOR BOTTOM AREA:

$$\text{Bottom Area (Ab)} = 222 \text{ ft}^2$$

STAGE VS STORAGE CALCULATIONS:

Stage, H* ft	Storage, S(H) ft ³	Water Surface Area S.F.
0.0	0.0	222.1
0.5	135.6	320.5
1.0	329.5	436.9
1.5	595.1	571.3
2.0	945.8	723.7
2.5	1395.3	894.2
3.0	1957.0	1082.6
3.5	2644.4	1289.0
4.0	3471.0	1513.4
4.5	4450.3	1755.8
5.0	5595.8	2016.2

LOW FLOW TO POND ORIFICE CALCULATIONS:

$$Q = C_o A \sqrt{2gh}$$

$Q = 0.14$ cfs (Design Discharge from above)

A = Cross sectional area of orifice

C_o = orifice coefficient = 0.62

g = gravity (32.2 ft/sec²)

h = average hydraulic head = 6 inches below high flow

$$A = \frac{Q}{C_o \sqrt{2gh}}$$

$A = 0.04$ ft²

$A = \pi r^2$

$r = 0.11$ ft. radius

$d = 2r$

$d = 2.70$ in. diameter, use 2 13/16 " orifice

POND OUTLET ORIFICE CALCULATIONS:

$Q = (1,957 \text{ ft}^3)/(48 \text{ hrs})/(60 \text{ min}/\text{hrs})/(60 \text{ s}/\text{min}) = 0.01 \text{ cfs}$

h = average hydraulic head = 12 inches below high flow

$A = 0.00$ ft²

$A = \pi r^2$

$r = 0.03$ ft. radius

$d = 2r$

$d = 0.65$ in. diameter, use 6/8 " orifice



PIONEER DESIGN GROUP

SANTA BARBARA URBAN HYDROGRAPHS

JOB NUMBER: 285-020
PROJECT: Estates at Leahy Park
FILE: 285-020_hydro_planning

DESCRIPTION	DESIGN STORM (YR)	DURATION (HR)	PRECIP (IN)	AREA TOTAL (AC)	% IMP.	PERV. (AC)	CN	TIME (MIN)	Q (CFS)
PREDEVELOPED 2-YEAR PEAK DISCHARGE	2	24	2.5	2.79	57.29	1.19	98	1.60	77
DEVELOPED 2-YEAR PEAK DISCHARGE	2	24	2.5	2.79	57.29	1.19	98	1.60	77
PREDEVELOPED 10-YEAR PEAK DISCHARGE	10	24	3.45	2.79	57.29	1.19	98	1.60	77
DEVELOPED 10-YEAR PEAK DISCHARGE	10	24	3.45	2.79	57.29	1.19	98	1.60	77
PREDEVELOPED 25-YEAR PEAK DISCHARGE	25	24	3.9	2.79	57.29	1.19	98	1.60	77
DEVELOPED 25-YEAR PEAK DISCHARGE	25	24	3.9	2.79	57.29	1.19	98	1.60	77
PREDEVELOPED 100-YEAR PEAK DISCHARGE	100	24	4.5	2.79	57.29	1.19	98	1.60	77
DEVELOPED 100-YEAR PEAK DISCHARGE	100	24	4.5	2.79	57.29	1.19	98	1.60	77



PIONEER DESIGN GROUP

STORMWATER CONVEYANCE CALCULATIONS

JOB NUMBER: 285-020
 PROJECT: Estates at Leahy Park
 FILE: 285-020_hydro_planning
 Design Storm: 25 YR
 Storm Duration: 24 HRS
 Precipitation: 3.9 IN
 Manning's "n": 0.013

LINE	INC. AREA (AC)	AREA TOTAL (AC)	% IMP. (AC)	AREA PERV. (AC)	CN IMP. (AC)	TIME IMP. (MIN)	Q (CFS)	PIPE SIZE (IN)	SLOPE (FT/FT)	Qf (CFS)	Q/Qf (%)	Vf (FPS)	V/Vf (%)	ACTUAL V (FPS)
------	----------------------	-----------------------	-------------------	-----------------------	--------------------	-----------------------	------------	----------------------	------------------	-------------	-------------	-------------	-------------	----------------------

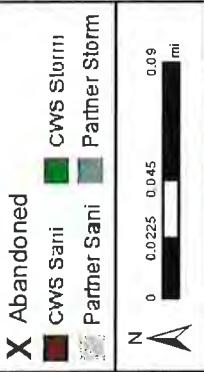
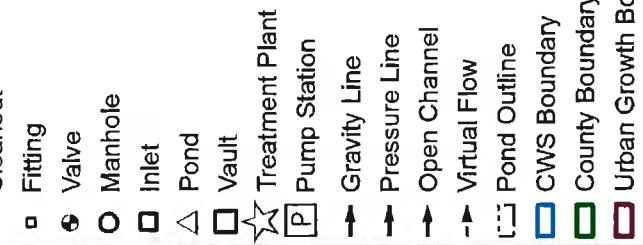
ENTIRE SITE	1.50	2.79	53.59	1.30	77	1.50	98	9.33	1.89	12	0.0050	2.53	0.75	3.22	1.13
-------------	------	------	-------	------	----	------	----	------	------	----	--------	------	------	------	------

A 12" pipe at 0.005 ft/ft can adequately convey the developed site

APPENDIX 'A' – CLEAN WATER SERVICES MAPS

Clean Water Services -- Sewer Map

Legend



Disclaimer: This product and its associated data is for informational purposes only and was derived from several databases. It was not prepared for, and is not suitable for legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ensure accuracy. Clean Water Services cannot accept any responsibility for errors, omissions or positional accuracy. There are no warranties for this product. Manhole and service lateral locations are depicted using best available information but must be field verified and located before digging. Service laterals are marked in the field as "Unlocated underground facilities" as defined in OR 952-001-0010(20). Easement data is not currently completed District wide and should be used for general reference only. All sanitary or storm sewer data, with the exception of sanitary lines 24" and larger located within the city limits of Beaverton, Cornelius, Forest Grove, Hillsboro, Lake Oswego, Portland, Sherwood, Tigard or Tualatin, need to be verified by contacting the individual city. Notification of any errors would be appreciated. Clean Water Services, Development Services, 2550 SW Hillsboro Highway, Hillsboro OR 97123, (503) 681-5100.

APPENDIX 'B' – STORMWATER DETENTION FACILITY REPORT

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2852_hydraflow POND BOTTOM=279.gpw

Hydraflow Hydrographs by Intellsolve

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Hydrograph Summary Report

	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	0.10	5	495	3,985	----	-----	-----	PreDeveloped
2	SCS Runoff	0.22	5	485	5,116	----	-----	-----	Developed
3	Reservoir	0.01	5	1455	5,056	2	381.20	4,433	Pond
2852_hydraflow POND BOTTOM=279				Return Period: 1 Year				Friday, Aug 27 2021, 1:42 PM	

Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

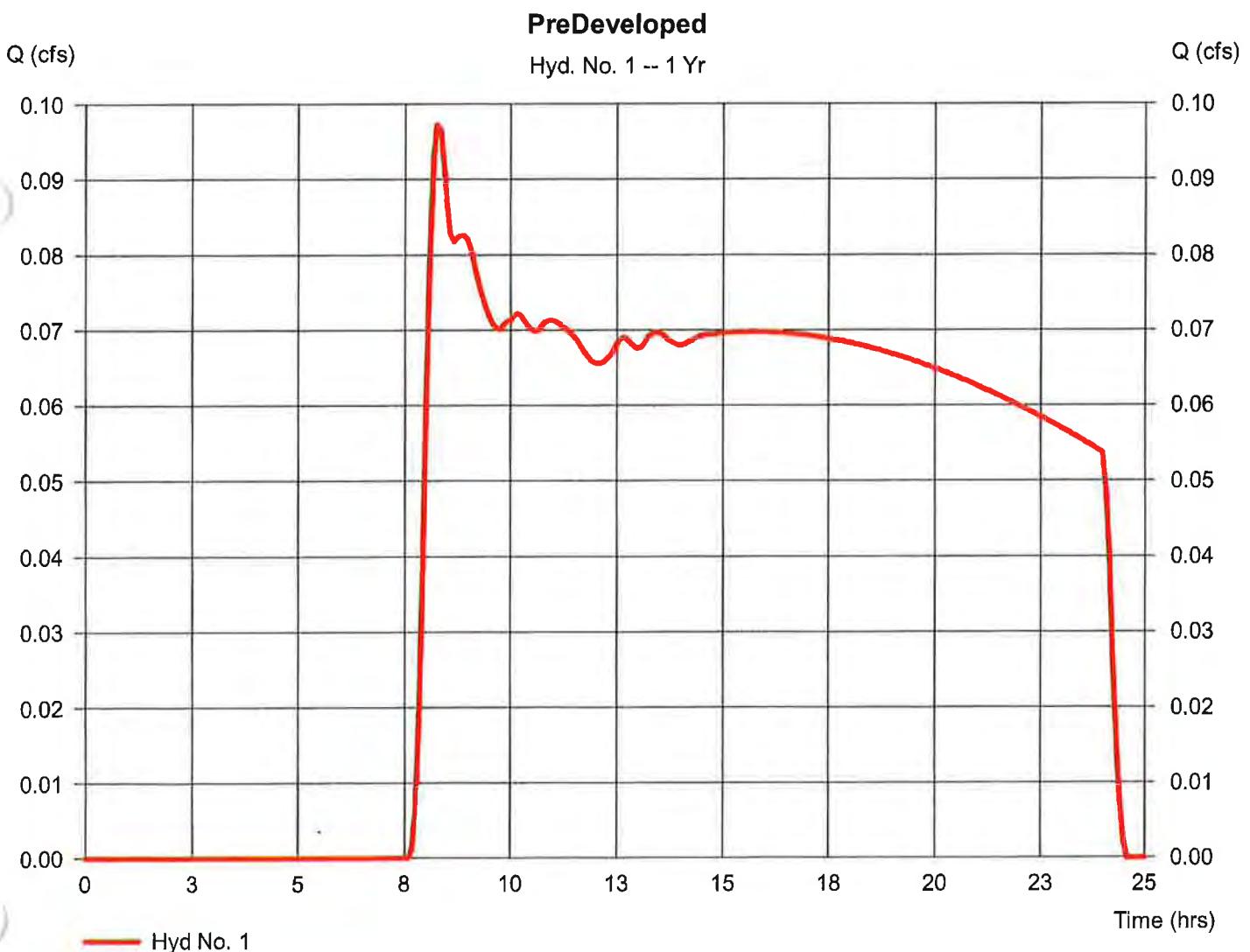
Hyd. No. 1

PreDeveloped

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 1.25 in
 Storm duration = 24 hrs

Peak discharge = 0.10 cfs
 Time interval = 5 min
 Curve number = 83
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 24.46 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 3,985 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

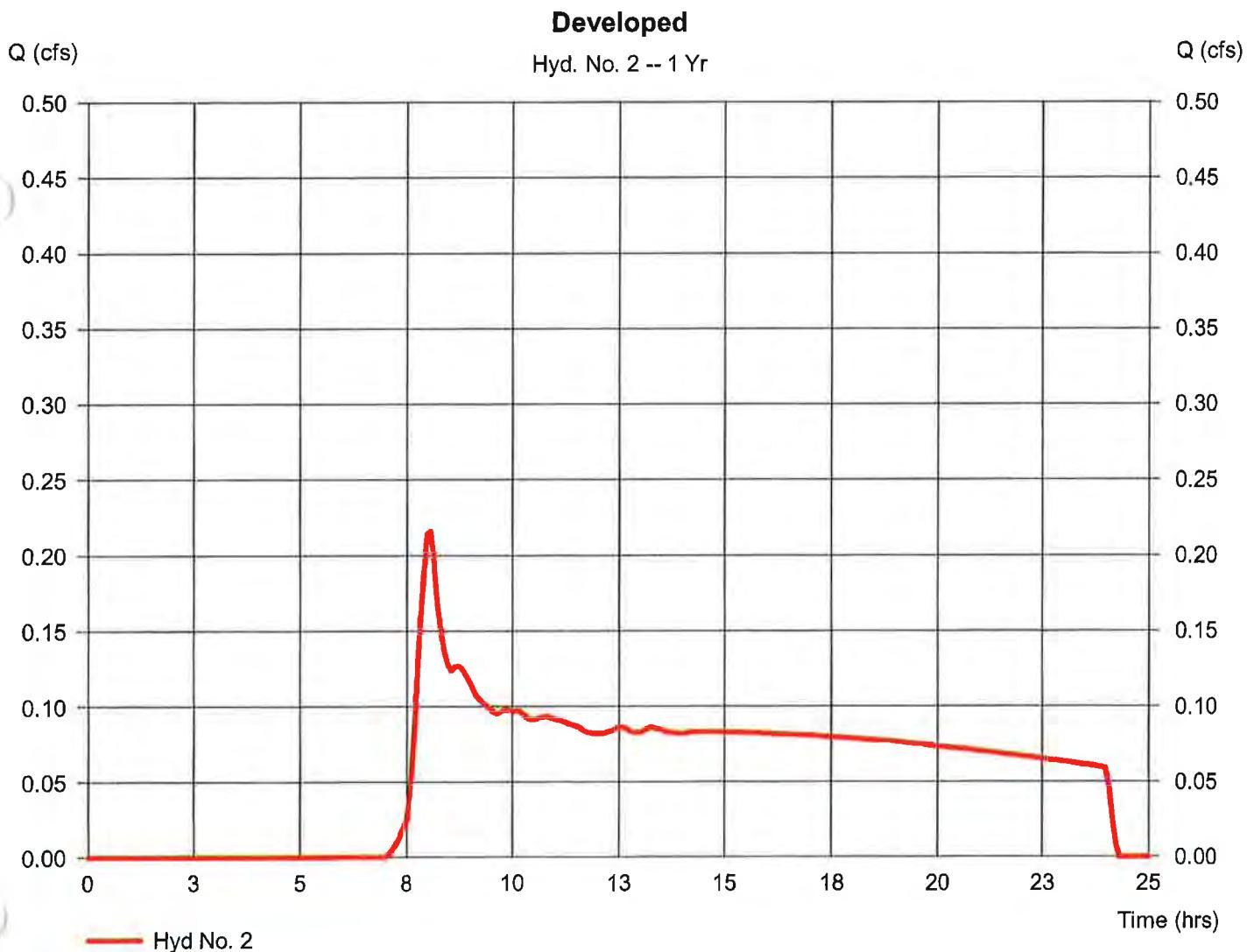
Hyd. No. 2

Developed

Hydrograph type = SCS Runoff
 Storm frequency = 1 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 1.25 in
 Storm duration = 24 hrs

Peak discharge = 0.22 cfs
 Time interval = 5 min
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 9.30 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 5,116 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Friday, Aug 27 2021, 1:42 PM

Hyd. No. 3

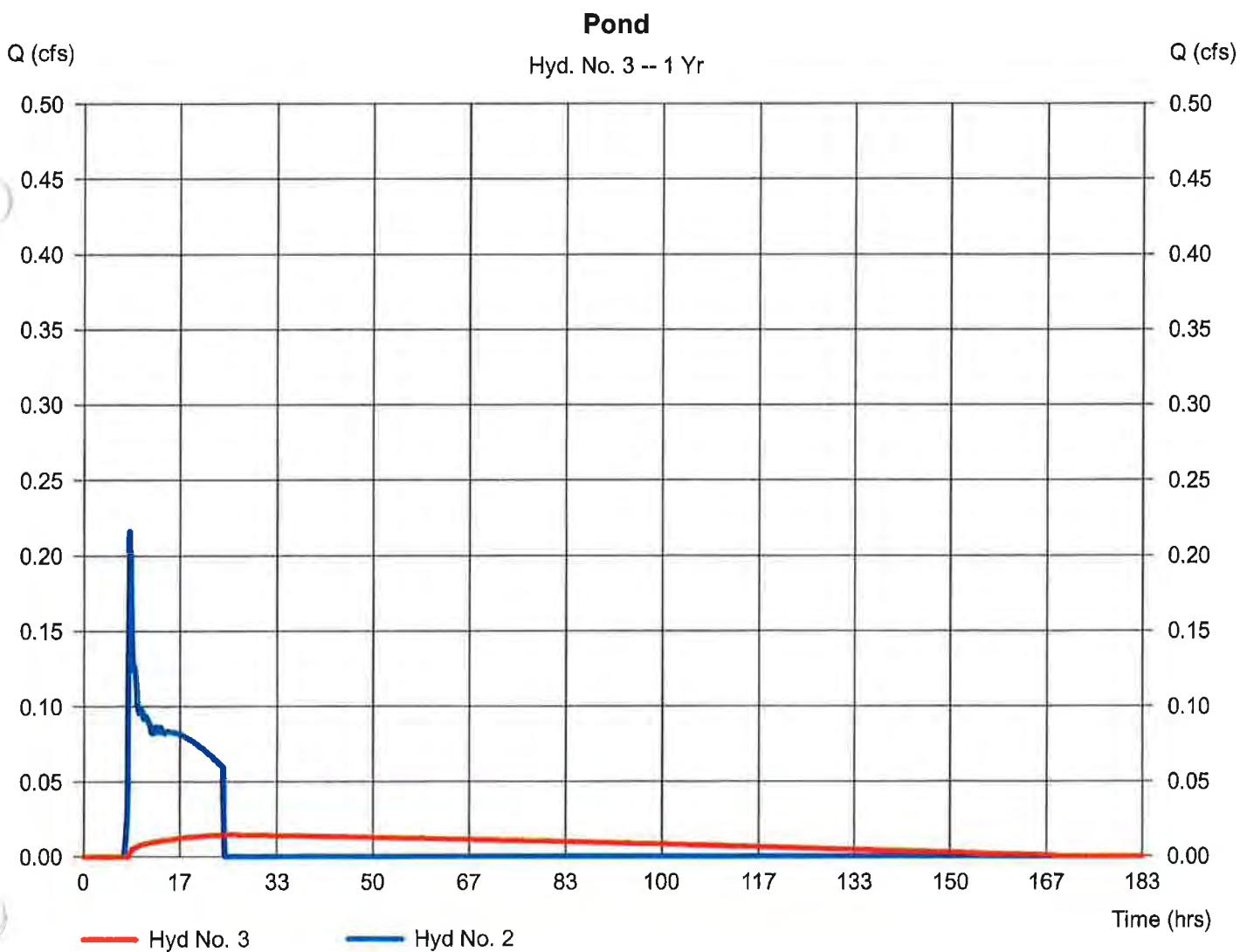
Pond

Hydrograph type = Reservoir
 Storm frequency = 1 yrs
 Inflow hyd. No. = 2
 Reservoir name = POND

Peak discharge = 0.01 cfs
 Time interval = 5 min
 Max. Elevation = 381.20 ft
 Max. Storage = 4,433 cuft

Storage Indication method used.

Hydrograph Volume = 5,056 cuft



Hydrograph Summary Report

	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	0.96	5	485	17,209	----	-----	-----	PreDeveloped
2	SCS Runoff	1.22	5	480	19,000	----	-----	-----	Developed
3	Reservoir	0.35	5	615	18,940	2	381.63	5,625	Pond

2852_hydraflow POND BOTTOM=279

Report Period: 2 Year

Friday, Aug 27 2021, 1:42 PM

Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

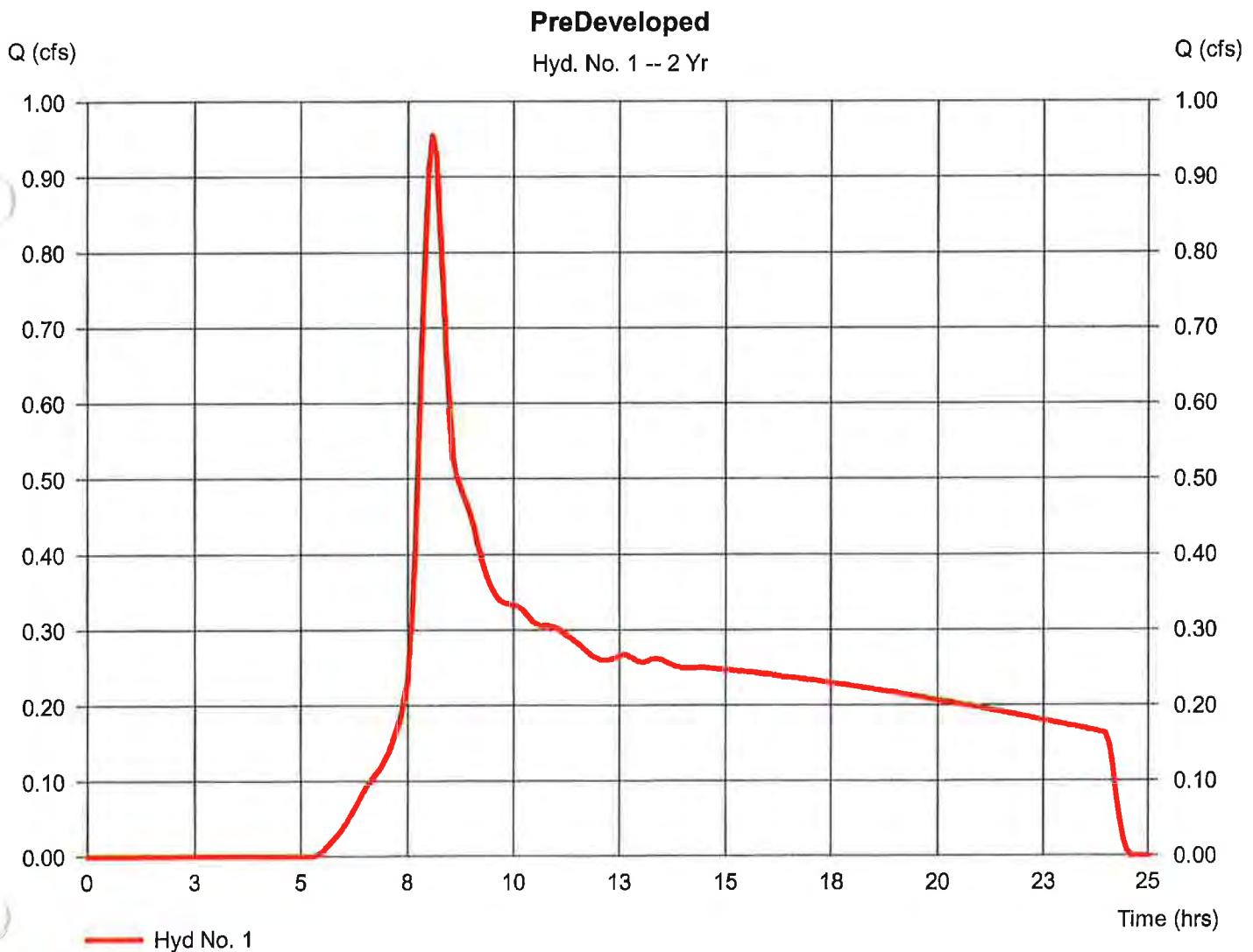
Hyd. No. 1

PreDeveloped

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 2.50 in
 Storm duration = 24 hrs

Peak discharge = 0.96 cfs
 Time interval = 5 min
 Curve number = 83
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 24.46 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 17,209 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

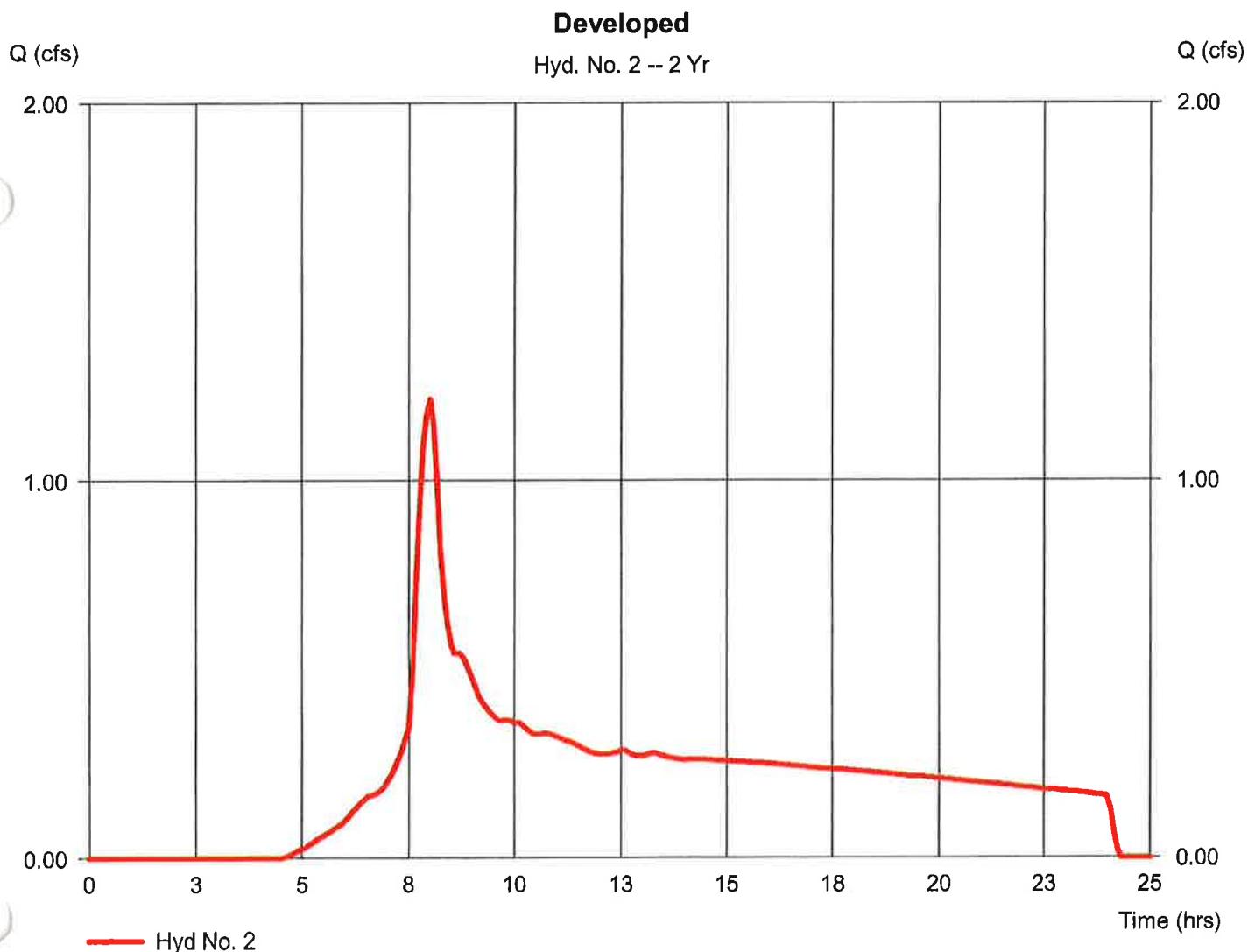
Hyd. No. 2

Developed

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 2.50 in
 Storm duration = 24 hrs

Peak discharge = 1.22 cfs
 Time interval = 5 min
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 9.30 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 19,000 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

Hyd. No. 3

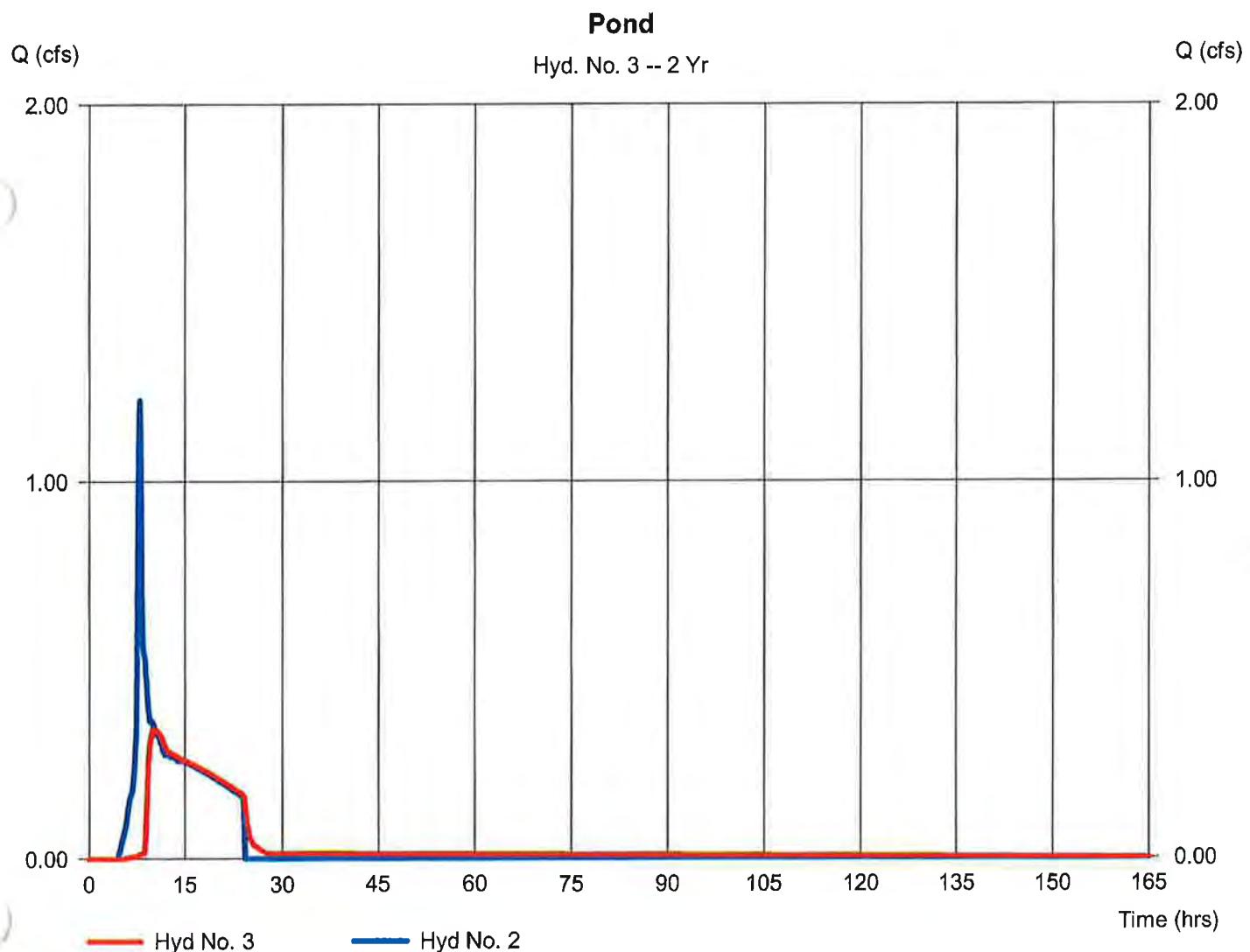
Pond

Hydrograph type = Reservoir
 Storm frequency = 2 yrs
 Inflow hyd. No. = 2
 Reservoir name = POND

Peak discharge = 0.35 cfs
 Time interval = 5 min
 Max. Elevation = 381.63 ft
 Max. Storage = 5,625 cuft

Storage Indication method used.

Hydrograph Volume = 18,940 cuft



Hydrograph Summary Report

	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	1.49	5	485	24,896	----	-----	-----	PreDeveloped
2	SCS Runoff	1.79	5	480	26,717	----	-----	-----	Developed
3	Reservoir	0.74	5	530	26,657	2	381.82	6,180	Pond
2852_hydraflow POND BOTTOM=279				Return Period: 5 Year				Friday, Aug 27 2021, 1:42 PM	

Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Friday, Aug 27 2021, 1:42 PM

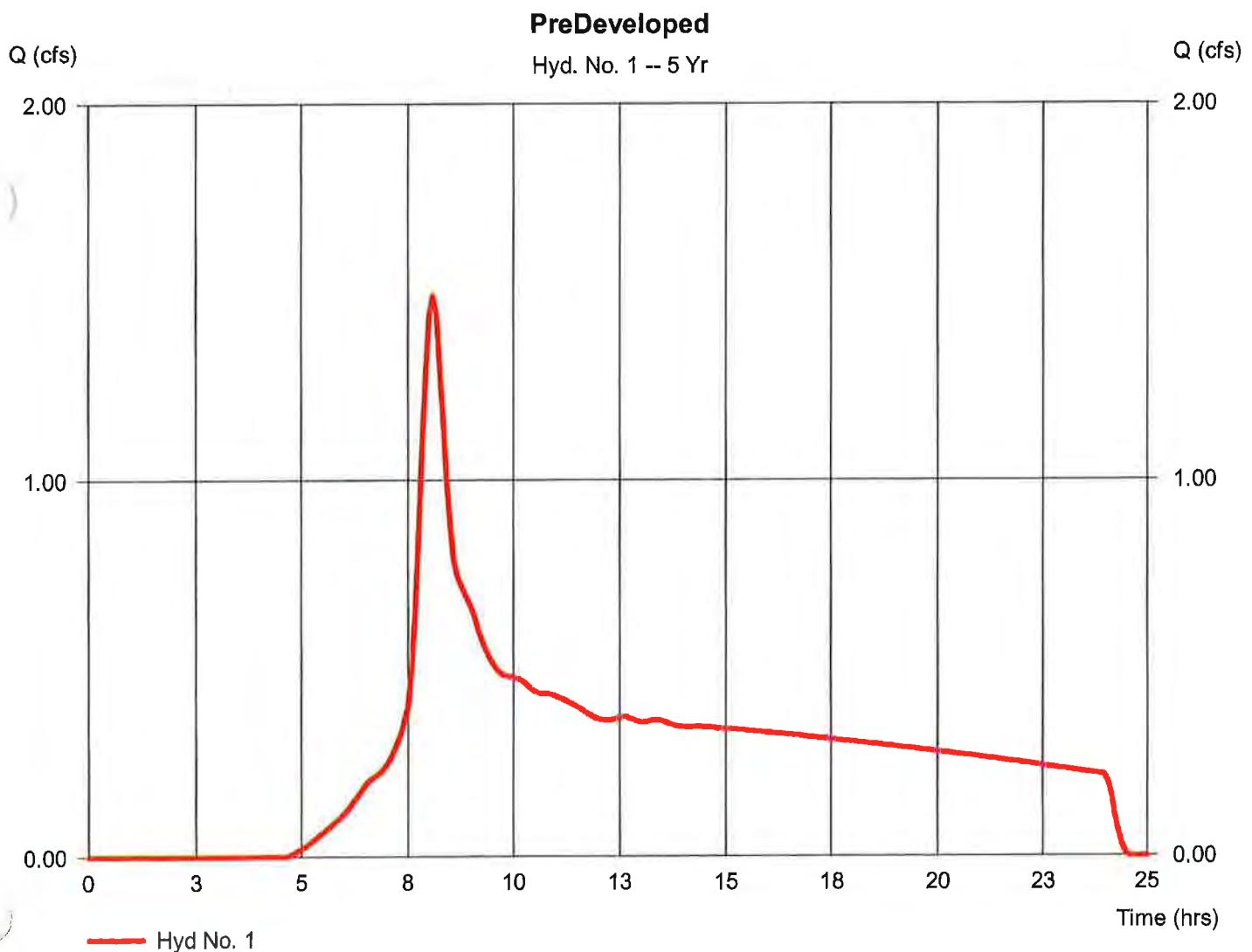
Hyd. No. 1

PreDeveloped

Hydrograph type = SCS Runoff
 Storm frequency = 5 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 1.49 cfs
 Time interval = 5 min
 Curve number = 83
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 24.46 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 24,896 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

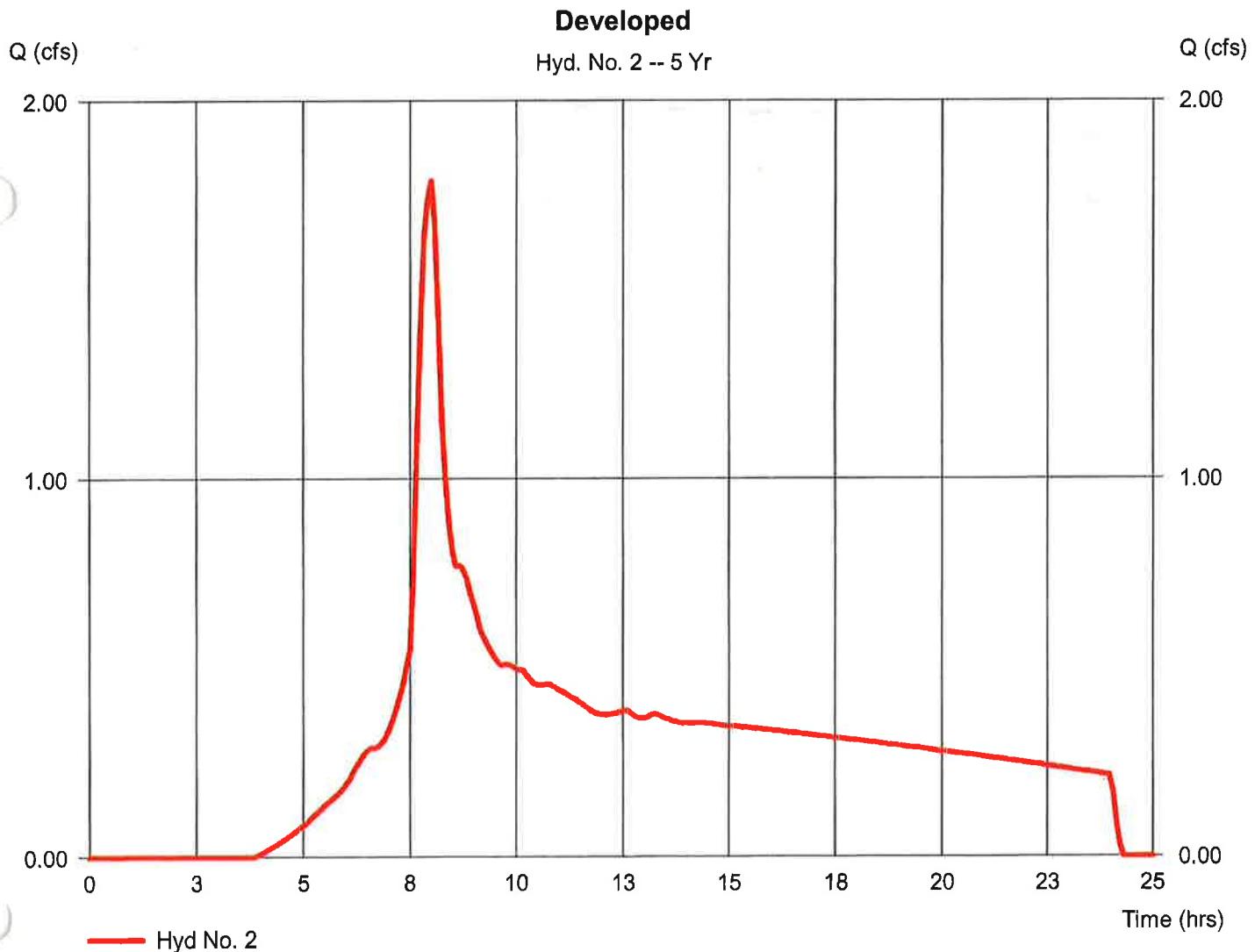
Hyd. No. 2

Developed

Hydrograph type = SCS Runoff
 Storm frequency = 5 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.10 in
 Storm duration = 24 hrs

Peak discharge = 1.79 cfs
 Time interval = 5 min
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 9.30 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 26,717 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

Hyd. No. 3

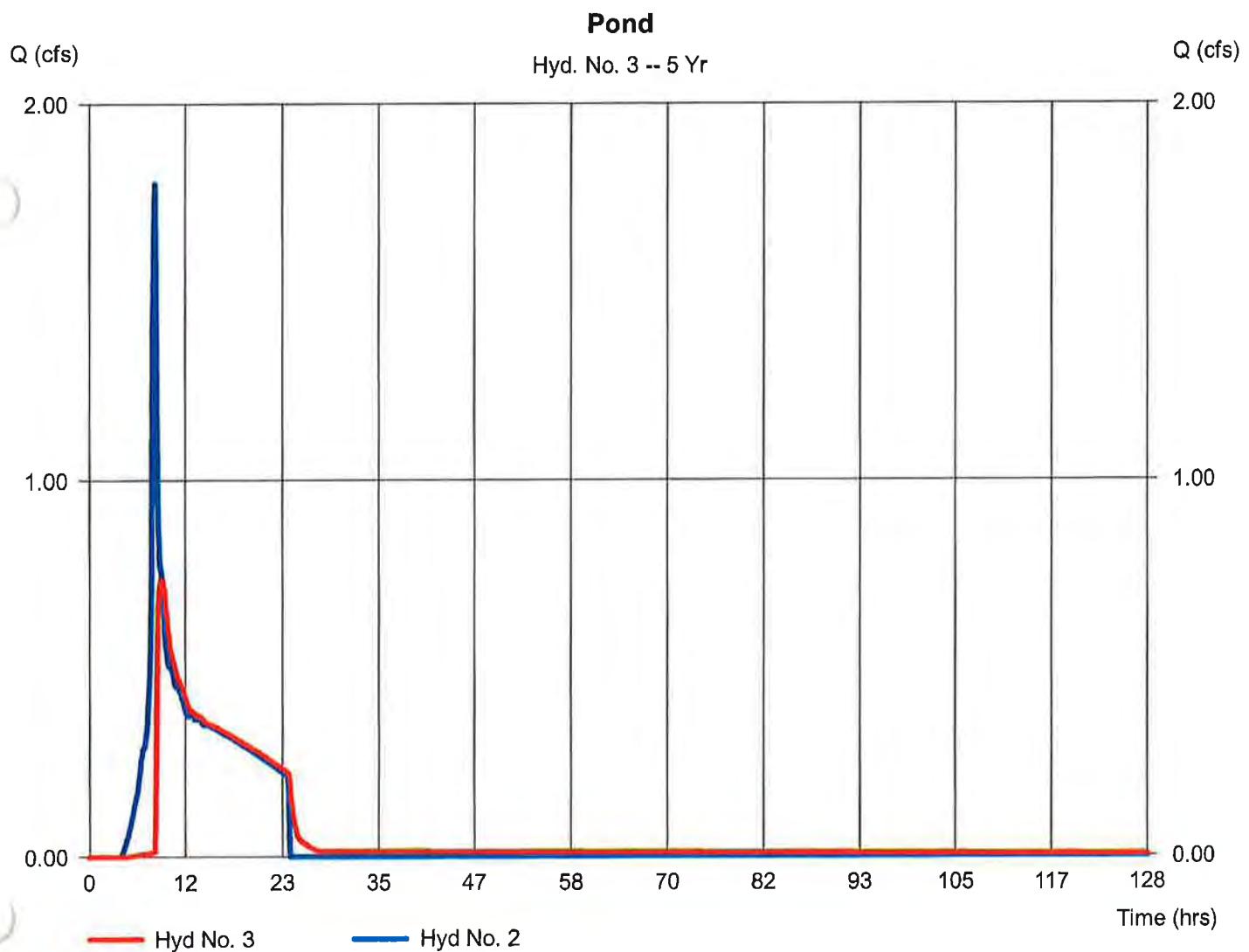
Pond

Hydrograph type = Reservoir
 Storm frequency = 5 yrs
 Inflow hyd. No. = 2
 Reservoir name = POND

Peak discharge = 0.74 cfs
 Time interval = 5 min
 Max. Elevation = 381.82 ft
 Max. Storage = 6,180 cuft

Storage Indication method used.

Hydrograph Volume = 26,657 cuft



Hydrograph Summary Report

	Hydrograph type (origin)	Peak flow (cfs)	Time Interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	1.82	5	485	29,608	----	-----	-----	PreDeveloped
2	SCS Runoff	2.14	5	480	31,387	----	-----	-----	Developed
3	Reservoir	1.07	5	505	31,327	2	382.02	6,758	Pond

2852_hydraflow POND BOTTOM=279 g Return Period: 10 Year

Friday, Aug 27 2021, 1:42 PM

Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Friday, Aug 27 2021, 1:42 PM

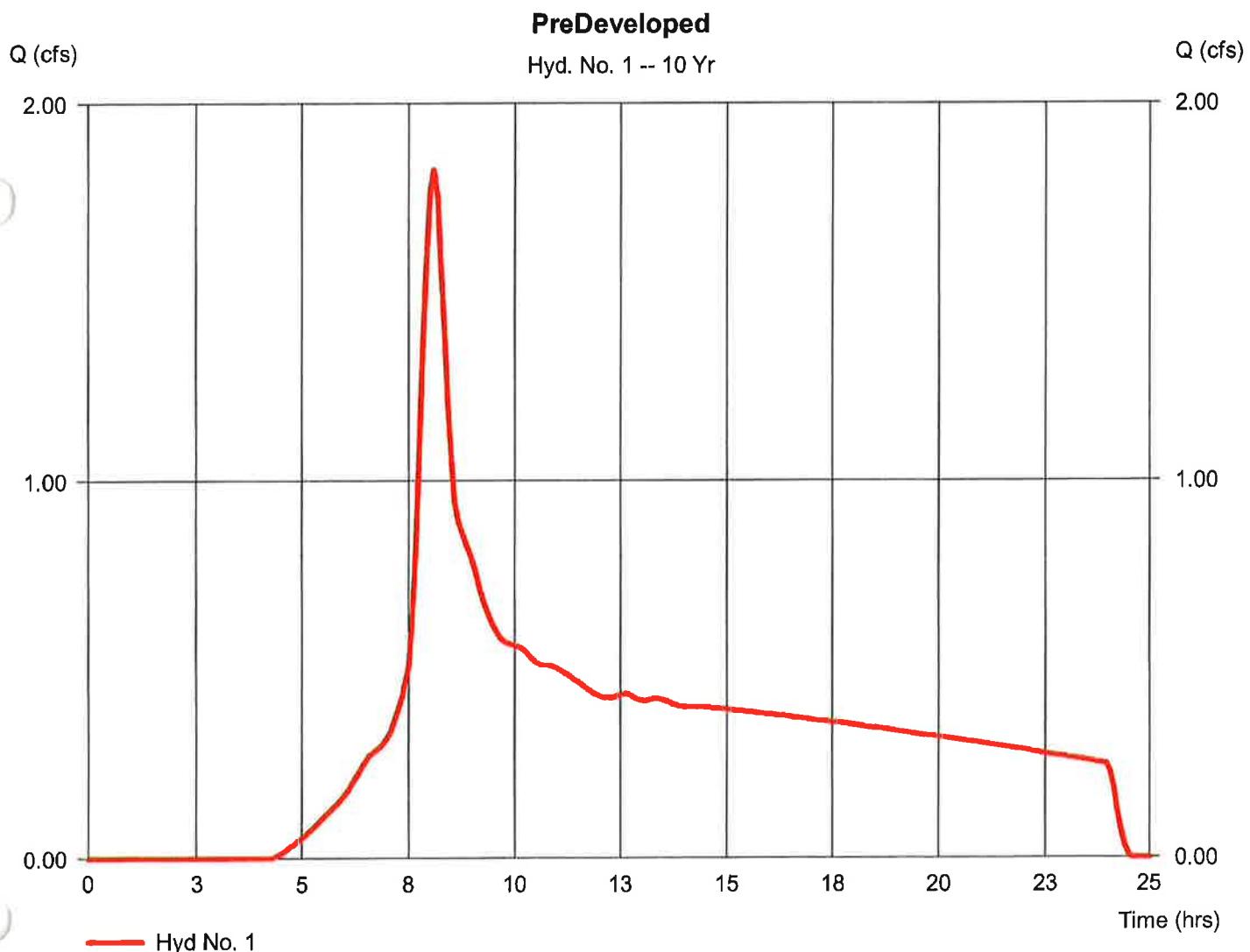
Hyd. No. 1

PreDeveloped

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.45 in
 Storm duration = 24 hrs

Peak discharge = 1.82 cfs
 Time interval = 5 min
 Curve number = 83
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 24.46 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 29,608 cuft



Hydrograph Plot

Hydraflow Hydrographs by InteliSolve

Friday, Aug 27 2021, 1:42 PM

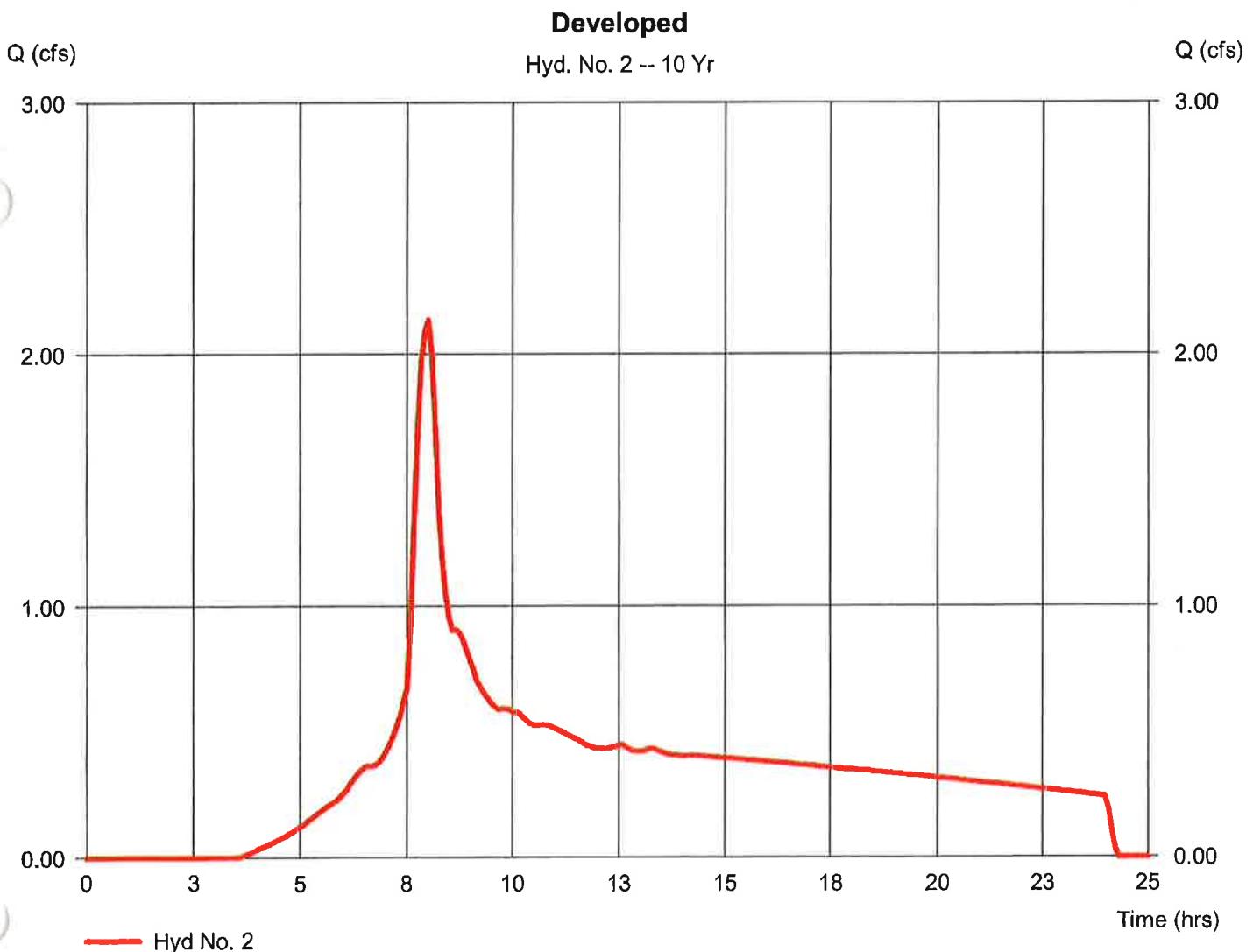
Hyd. No. 2

Developed

Hydrograph type = SCS Runoff
 Storm frequency = 10 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.45 in
 Storm duration = 24 hrs

Peak discharge = 2.14 cfs
 Time interval = 5 min
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 9.30 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 31,387 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelisolve

Friday, Aug 27 2021, 1:42 PM

Hyd. No. 3

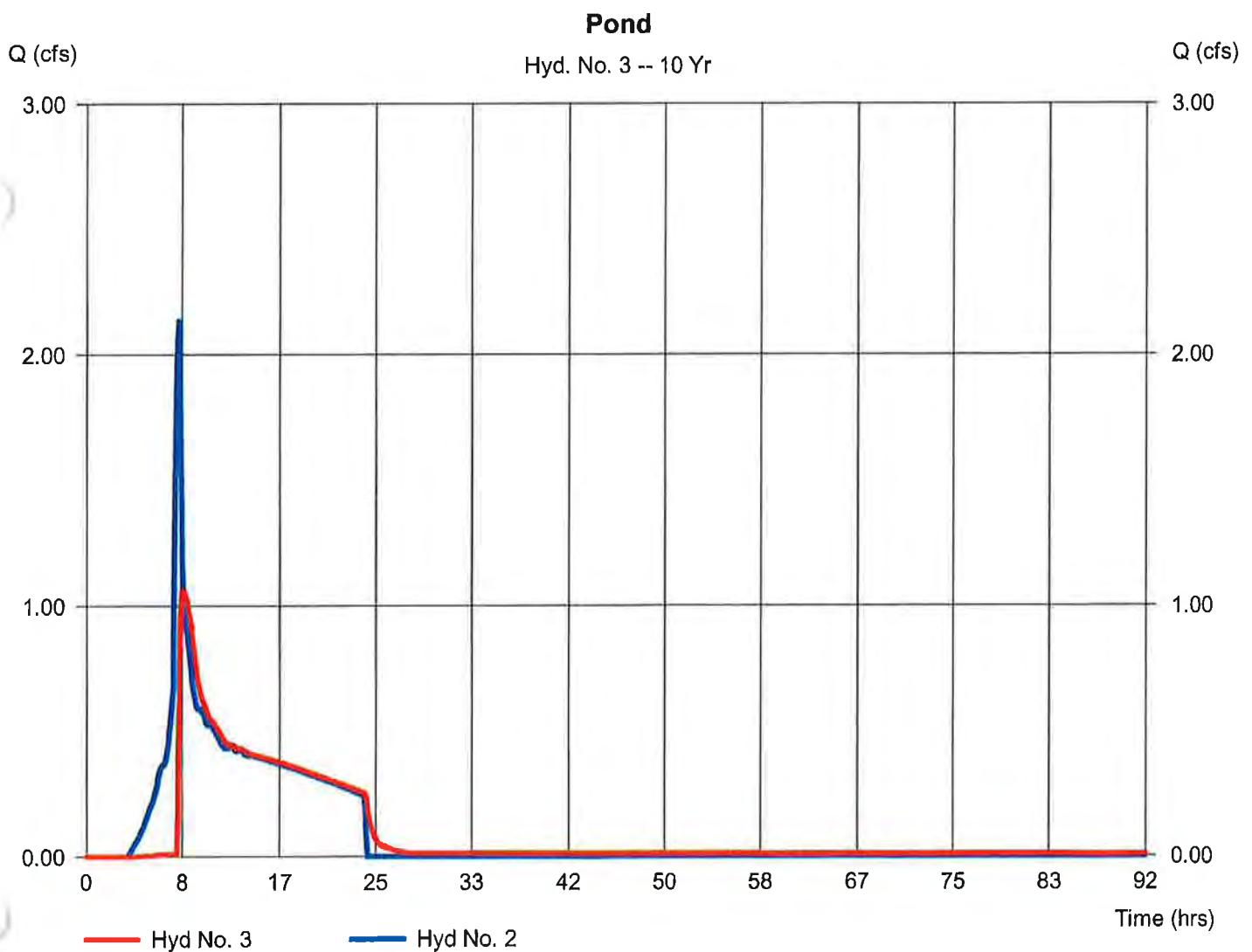
Pond

Hydrograph type = Reservoir
 Storm frequency = 10 yrs
 Inflow hyd. No. = 2
 Reservoir name = POND

Peak discharge = 1.07 cfs
 Time interval = 5 min
 Max. Elevation = 382.02 ft
 Max. Storage = 6,758 cuft

Storage Indication method used.

Hydrograph Volume = 31,327 cuft



Hydrograph Summary Report

	Hydrograph type (origin)	Peak flow (cfs)	Time Interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	2.27	5	485	35,851	----	-----	-----	PreDeveloped
2	SCS Runoff	2.59	5	480	37,526	----	-----	-----	Developed
3	Reservoir	1.90	5	490	37,466	2	382.21	7,404	Pond
2852_hydraflow POND BOTTOM=279				Return Period: 25 Year				Friday, Aug 27 2021, 1:42 PM	

Hydrograph Plot

Hydraflow Hydrographs by InteliSolve

Friday, Aug 27 2021, 1:42 PM

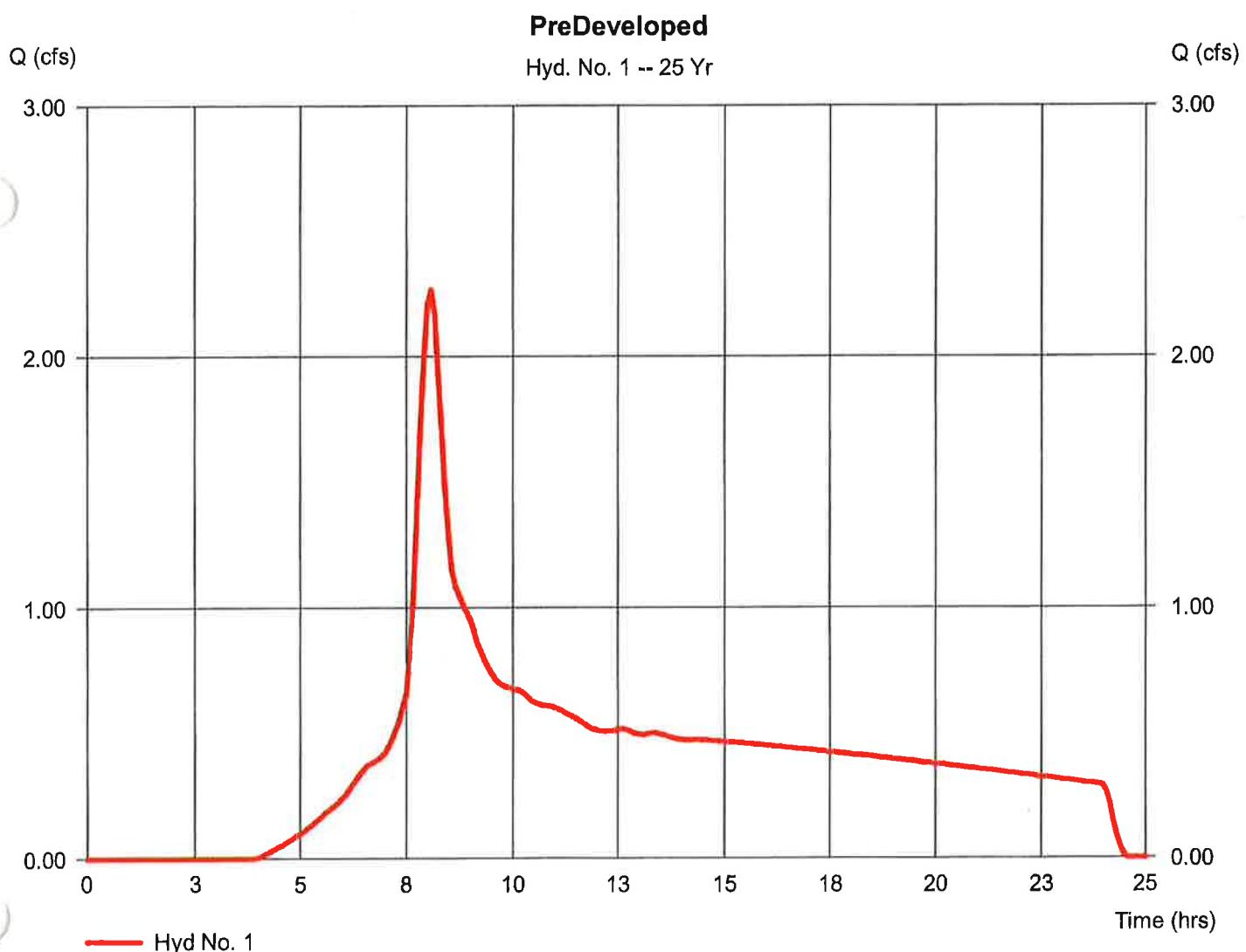
Hyd. No. 1

PreDeveloped

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.90 in
 Storm duration = 24 hrs

Peak discharge = 2.27 cfs
 Time interval = 5 min
 Curve number = 83
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 24.46 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 35,851 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

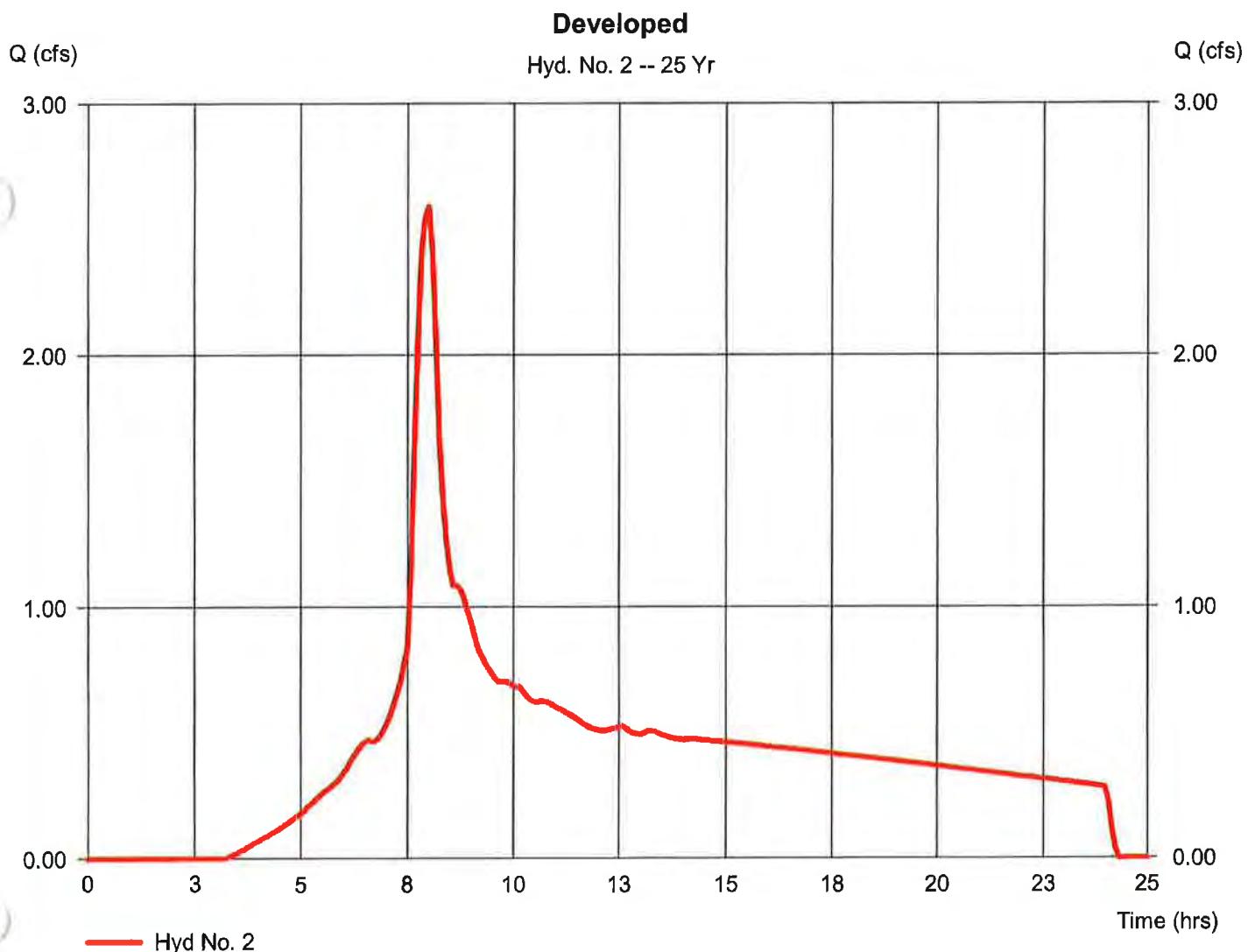
Hyd. No. 2

Developed

Hydrograph type = SCS Runoff
 Storm frequency = 25 yrs
 Drainage area = 4.490 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 3.90 in
 Storm duration = 24 hrs

Peak discharge = 2.59 cfs
 Time interval = 5 min
 Curve number = 86
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 9.30 min
 Distribution = Type IA
 Shape factor = 484

Hydrograph Volume = 37,526 cuft



Hydrograph Plot

Hydraflow Hydrographs by Intelsolve

Friday, Aug 27 2021, 1:42 PM

Hyd. No. 3

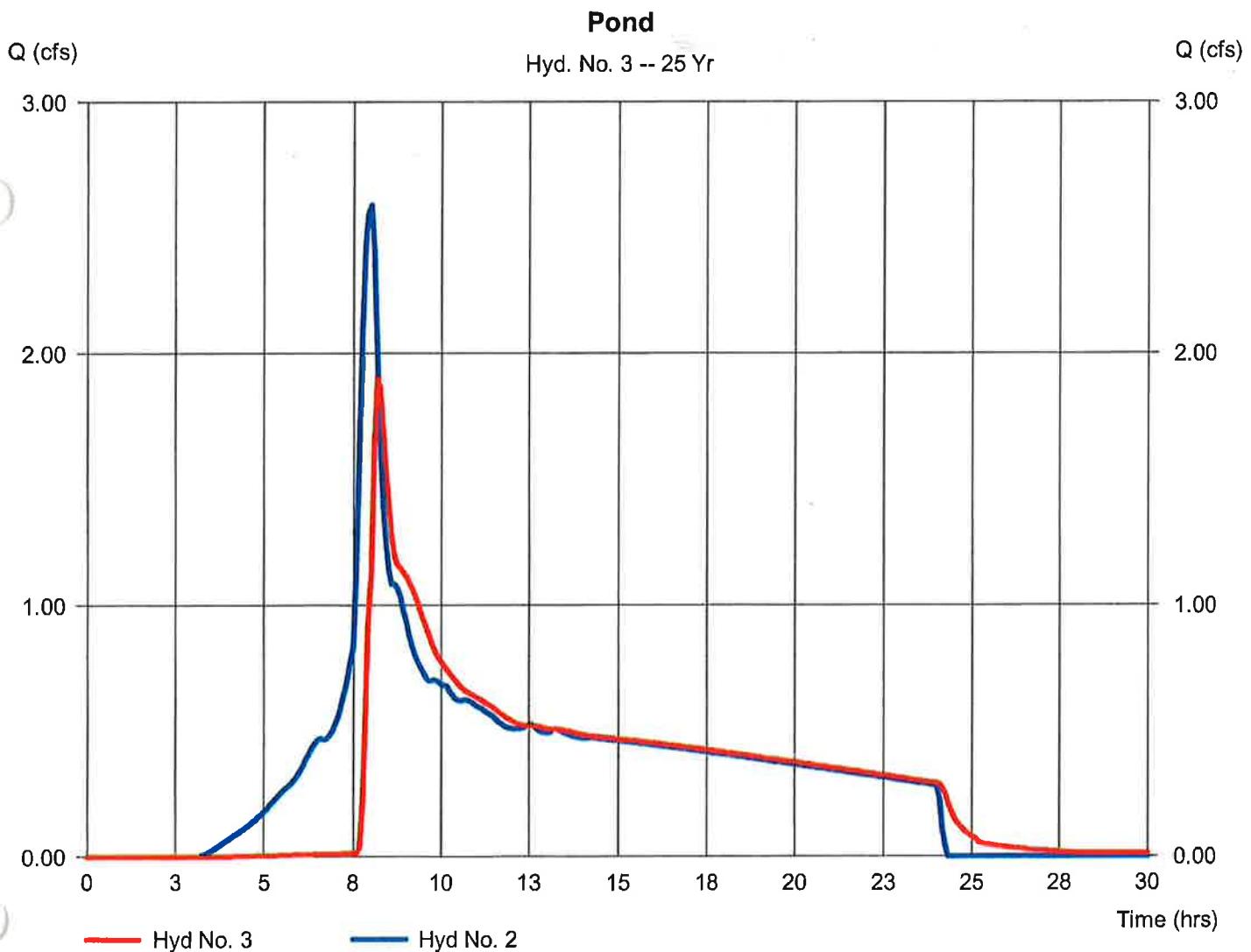
Pond

Hydrograph type = Reservoir
 Storm frequency = 25 yrs
 Inflow hyd. No. = 2
 Reservoir name = POND

Peak discharge = 1.90 cfs
 Time interval = 5 min
 Max. Elevation = 382.21 ft
 Max. Storage = 7,404 cuft

Storage Indication method used.

Hydrograph Volume = 37,466 cuft



APPENDIX 'C' – DRAINAGE HAZARD AREA ANALYSIS

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TECHNICAL APPENDIX

APPENDIX 'A' – CWS MAP

APPENDIX 'B' – DRAINAGE BASIN MAP

APPENDIX 'C' – DRAINAGE HAZARD AREA CROSS SECTION PROFILES & CALCULATIONS

APPENDIX 'D' – FIRM PANEL

INTRODUCTION

This report represents the Drainage Hazard Area analysis for the Estates at Leahy Road Subdivision development project and complies with the land use and engineering requirements of Washington County and Clean Water Services (CWS). The purpose of this report is to delineate 25-year water surface elevation of the existing creek in the southern portion of the Estates at Leahy Road Subdivision property.

EXISTING BASIN CONDITIONS

The existing basin is approximately 308 acres spanning northeast from the site towards the intersection of NW Skyline Boulevard and NW Cornell Road. There is an existing creek flowing through the basin to the southwest, where it eventually joins Johnson Creek.

The basin is comprised of various land use covers including single-family detached and attached homes, multi-family apartments, and commercial uses. There are also various open space areas within the basin comprised of woods, brush, public parks and other common green areas. Based on the existing zoning the contributing drainage basin, the impervious and pervious areas were calculated to be 171.9 acres or 55.8% and 169.9 acres or 55.1%, respectively.

The predominant soils found in the basin are Briedwell stony silt loam (5D), Cascade silt loam (7B, 7C, 7D, 7E), Cornelius silt loam (10B), Cornelius and Kinton silt loams (11B, 11C, 11D), Delena Silt Loam (14C), and Helvetia silt loam (19B, 21B) with corresponding hydrologic soil group (HSG) designations 'B', 'C', 'C', 'C', 'D', 'C', respectively, as shown on the attached Natural Resources Conservation Service (NRCS) soil survey for Washington County.

Slopes across the drainage basin are mildly sloping, ranging from 2 to 30 percent based on the NRCS Soils Map and GIS information. The average slope for the basin is approximately 9.1 percent.

RUNOFF CURVE NUMBERS

Pervious areas will use a composite RCN of 76.5 corresponding to an average lot size of $\frac{1}{4}$ acre within the basin, see Runoff Curve Numbers Chart below. A runoff curve number of 98 will be used for all impervious areas (refer to the *SCS Runoff Curve Numbers Exhibit*).

RUNOFF CURVE NUMBERS			
Land Description	Area (AC)	Soil Grade	Existing RCN
Average Lot size ¼ acre	10.27	B	75
Average Lot size ¼ acre	210.61	C	83
Average Lot size ¼ acre	54.34	D	87
Impervious	171.86	B, C, D	98

HYDROLOGY/HYDRAULIC METHODOLOGY

Using the Watershed Lag method based on a Type 1A rainfall distribution, the site has been analyzed to determine the existing and proposed peak runoff rates for the 25-year 24-hour storm event. The Watershed Lag method was developed to analyze basins no larger than 19 square miles (12,160 acres). This method utilizes the basin's average land slope (Y), the longest flow length (L) and the maximum potential retention to calculate the time of concentration. The maximum potential retention (S) is calculated from the existing composite runoff curve (CN). An existing time of concentration was calculated for each Drainage Hazard Area cross section (refer to the *Time of Concentration* exhibit).

$$T_c = \frac{(L)^{0.8} (S+I)^{0.7}}{1140 \times Y^{0.5}} \left(60 \frac{\text{min}}{\text{h}} \right)$$

$$S = \frac{1000}{CN} - 10$$

Rainfall depths for all storm events used in the calculations and design of the proposed storm drainage system are found in latest edition of Clean Water Services' *Design and Construction Standard's for Sanitary and Storm Water Management* (R&O 19-22) and as shown below.

24-HOUR RAINFALL DEPTHS (CWS)					
Recurrence Interval, years	2	5	10	25	100
24-Hour Depths, Inches	2.50	3.10	3.45	3.90	4.50

CREEK CROSS SECTIONAL ANALYSIS

A drainage hazard area (DHA) analysis was performed on the existing creek every 50 ft across the site relative to the proposed improvements and their impact on the environmental sensitive area. The upstream drainage basin was defined using available CWS maps, topographic surveys and visual inspections. From the calculated time of concentration, an existing 25-year flow of approximately 112.09 CFS was calculated for the basin adjacent to the proposed development (see *Santa Barbara Urban Hydrographs Exhibit*). Appropriate Manning's 'n' values were selected based on stream characteristics and surrounding wetland vegetation (see *Manning's 'n' Values Exhibit*).

At each cross section, the existing grades of the channel, the 25-year flow rate and the appropriate Manning's 'n' values were used to calculate the water surface elevation. The proposed project will add 2.00 acres of new impervious area to the contributing basin, which does not cause a measurable increase in the 25-year flow rate (112.09 cfs v. 112.67 cfs; see *Santa Barbara Urban Hydrographs Exhibit*). Because we are proposing a detention facility that will release stormwater meeting the hydromodification requirements of Clean Water Services, which matches the 2-year developed stormwater runoff rate to half of the existing 2-year stormwater runoff rate and matches the existing conditions of the 5, 10, and 25 year stormwater runoff rates, there will not be an increase to the water surface or water velocity due to the development (see *Santa Barbara Urban Hydrographs Exhibit*).

As shown on the attached *Drainage Hazard Area Analysis Profiles and Exhibit*, the 25-year water surface elevations through the site are 368.90 feet along the western boundary of the existing roadway and 380.11 feet along the eastern property boundary. These elevations are based on the 25-year flow rate of the existing drainage basin and the proposed development.

The water surface elevations are shown to be substantially within the vegetated corridor. An alteration to the drainage hazard area is being proposed with the development. The existing 24" culverts are to be replaced with a single 4-ft by 5-ft reinforced concrete box culvert, to be installed per Clean Water Services and Washington County standards and requirements. All other improvements from the subdivision are outside the limits of the calculated water surface elevations (see *Drainage Hazard Area Cross Sections Exhibit* for final delineation of the DHA).

CREEK CROSS SECTIONAL ANALYSIS			
Cross Section	Flow (CFS)	Channel Slope (%)	WSE (existing, ft.)
Section A-A	112.09	4.10	368.90
Section B-B	112.09	3.33	370.11
Section C-C	112.09	2.13	370.73
Section D-D	112.09	0.98	372.69
Section E-E	112.09	0.94	373.62
Section F-F	112.09	3.81	375.85
Section G-G	112.09	5.04	378.36
Section H-H	112.09	3.73	378.68
Section I-I	112.09	5.06	380.11

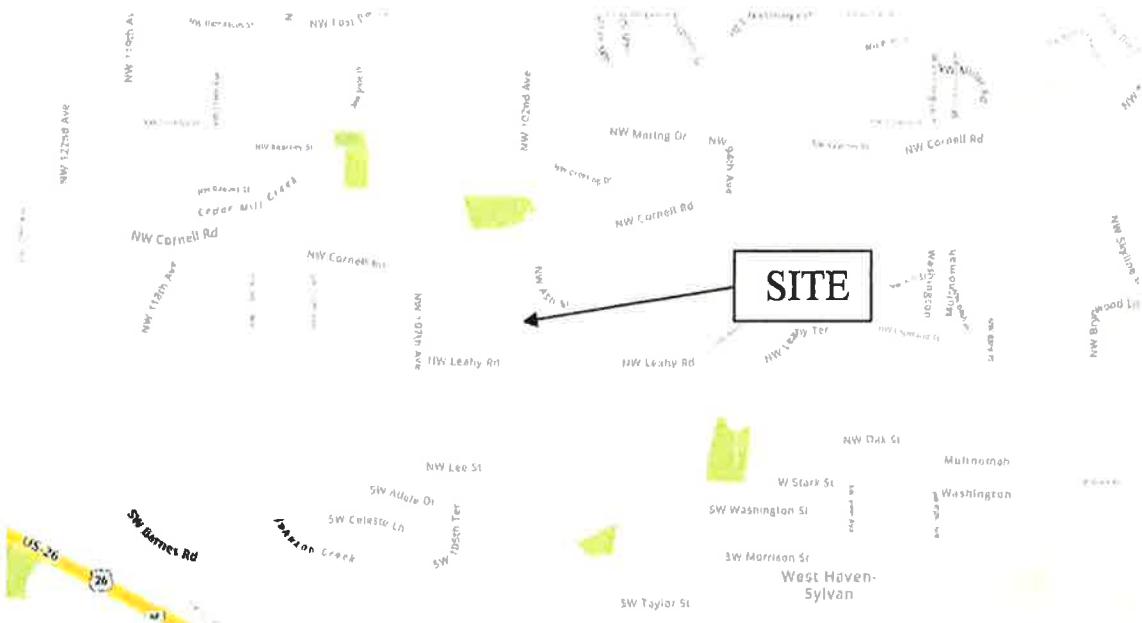
DOWNSTREAM ANALYSIS

The stormwater from the project outfalls into an existing tributary of Johnson Creek, which flows to the west. After traveling past the subject property, the stormwater ultimately flows into Johnson Creek. The 100-year floodplain is mapped downstream of the existing creek to the south of NW Leahy Road, which is southwest of the site (see Appendix 'E' for FIRM Panel).

CONCLUSION

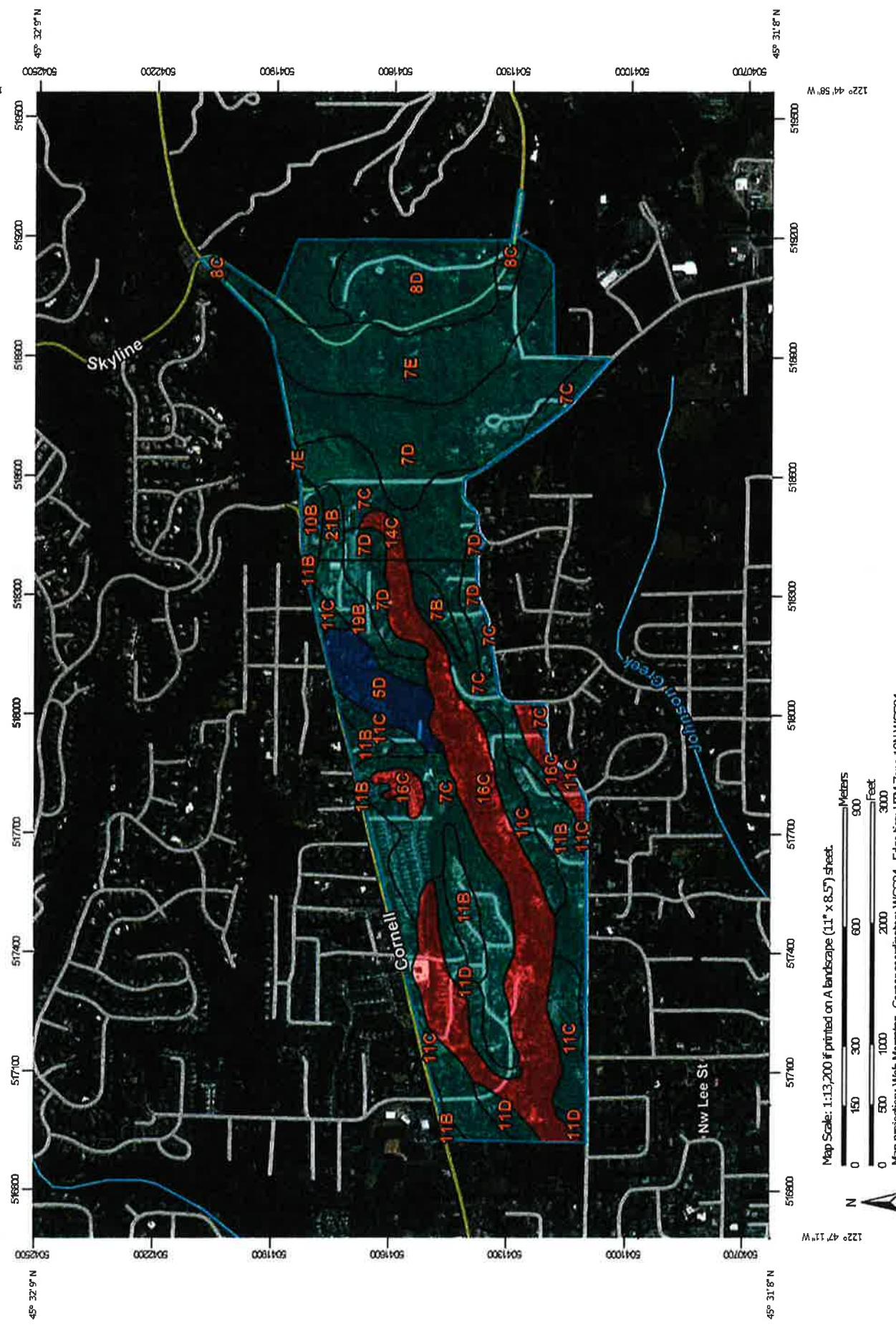
Based on the supporting DHA calculations and attached analysis, it is the opinion of Pioneer Design Group that the development of the Estates at Leahy Road Subdivision project will not adversely affect the existing downstream drainage system or the existing drainage hazard area. Therefore, all the requirements associated with Clean Water Services' design and construction standards and Washington County have been met for this project.

VICINITY MAP



ENGINEERING CALCULATIONS AND SPREADSHEETS

Hydrologic Soil Group—Multnomah County Area, Oregon, and Washington County, Oregon



Map Scale: 1:13,200 if printed on A landscape ($11^{\prime\prime} \times 8.5^{\prime\prime}$) sheet.
150 300 600 900
500 1000 2000 3000
Meters Feet
Corner coordinates: WGS84
Easting: UTM Zone 10N WGS84
Corner coordinates: Web Mercator

Natural Resources
Conservation Service

National Cooperative Soil Survey
Web Soil Survey

MAP LEGEND

Area of Interest (AOI)		C		C/D
Soils		D		Not rated or not available
Soil Rating Polygons				Water Features
				Streams and Canals
				Transportation
				Rails
				Interstate Highways
				US Routes
				Major Roads
				Local Roads
Soil Rating Lines	Background			Aerial Photography
		A		
		A/D		
		B		
		B/D		
		C		
		C/D		
		D		
		Not rated or not available		Not rated or not available
Soil Rating Points				
		A		
		A/D		
		B		
		B/D		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Multnomah County Area, Oregon
Survey Area Data: Version 18, Jun 11, 2020

Soil Survey Area: Washington County, Oregon

Survey Area Data: Version 18, Jun 11, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Aug 1, 2019—Sep 12, 2019

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres In AOI	Percent of AOI
7C	Cascade silt loam, 8 to 15 percent slopes	C	18.9	6.4%
7D	Cascade silt loam, 15 to 30 percent slopes	C	45.6	15.5%
7E	Cascade silt loam, 30 to 60 percent slopes	C	30.2	10.3%
8C	Cascade-Urban land complex, 8 to 15 percent slopes	C	3.2	1.1%
8D	Cascade-Urban land complex, 15 to 30 percent slopes	C	21.3	7.2%
10B	Cornelius silt loam, 3 to 8 percent slopes	C	2.5	0.8%
14C	Delena silt loam, 3 to 12 percent slopes	D	1.9	0.6%
21B	Helvetia silt loam, 3 to 8 percent slopes	C	2.5	0.9%
Subtotals for Soil Survey Area			126.0	42.8%
Totals for Area of Interest			294.5	100.0%

Map unit symbol	Map unit name	Rating	Acres In AOI	Percent of AOI
5D	Briedwell stony silt loam, 12 to 20 percent slopes	B	10.1	3.4%
7B	Cascade silt loam, 3 to 7 percent slopes	C	2.8	1.0%
7C	Cascade silt loam, 7 to 12 percent slopes	C	34.0	11.6%
7D	Cascade silt loam, 12 to 20 percent slopes	C	7.1	2.4%
11B	Cornelius and Kinton silt loams, 2 to 7 percent slopes	C	18.9	6.4%
11C	Cornelius and Kinton silt loams, 7 to 12 percent slopes	C	30.1	10.2%
11D	Cornelius and Kinton silt loams, 12 to 20 percent slopes	C	8.0	2.7%
16C	Delena silt loam, 3 to 12 percent slopes	D	51.4	17.4%



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
19B	Helvetia silt loam, 2 to 7 percent slopes	C	6.1	2.1%
Subtotals for Soil Survey Area			168.4	57.2%
Totals for Area of Interest			294.5	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

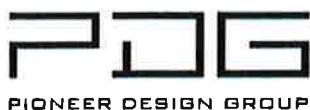
Component Percent Cutoff: None Specified

Tie-break Rule: Higher



SOIL FEATURES FOR WASHINGTON COUNTY

Soil name and map symbol	Hydro-logic group	Flooding		
		Frequency	Duration	Months
Aloha: 1	C	NONE	NONE	NONE
Amity: 2	C	NONE	NONE	NONE
Astoria: 3E, 3F	B	NONE	NONE	NONE
Briedwell: 4B, 5B, 5C, 5D	B	NONE	NONE	NONE
Carlton: 6B, 6C	B	NONE	NONE	NONE
Cascade: 7B, 7C, 7D, 7E, 7F	C	NONE	NONE	NONE
Chehalem: 8C	C	NONE	NONE	NONE
Chehalis: 9, 10	B	COMMON	BRIEF	NOV-MAR
Cornelius: 11B, 11C, 11D, 11E, 11F: Cornelius part	C	NONE	NONE	NONE
Kinton part	C	NONE	NONE	NONE
Cornelius Varient: 12A, 12B, 12C	C	NONE	NONE	NONE
Cove: 13, 14	D	COMMON	BRIEF	DEC-APR
Dayton: 15	D	NONE	NONE	NONE
Delena: 16C	D	NONE	NONE	NONE
Goble: 17B, 17C, 17D, 17E, 18E, 18F	C	NONE	NONE	NONE
Helvetia: 19B, 19C, 19D, 19E	C	NONE	NONE	NONE
Hembre: 20E, 20F, 20G	B	NONE	NONE	NONE
Hillsboro: 21A, 21B, 21C, 21D	B	NONE	NONE	NONE
Hubberly: 22	D	NONE	NONE	NONE
Jory: 23B, 23C, 23D, 23E, 23F	C	NONE	NONE	NONE
Kilchis: 24G Kilchis part	C	NONE	NONE	NONE
Klickitat part	B	NONE	NONE	NONE



IMPERVIOUS AREA CALCULATIONS (Upstream Basin)

JOB NUMBER: 285-020

PROJECT: Estates at Leahy Park

FILE: 285-020_hydro_planning

ENTIRE BASIN

NEW IMPERVIOUS AREA

# LOTS AT 2,640-SF IMPERVIOUS AREA / LOT	39,600.00 ft ²	
SIDEWALKS	8,976.00 ft ²	
STREET PAVEMENT (PUBLIC)	12,410.00 ft ²	
STREET PAVEMENT (PRIVATE)	26,040.00 ft ²	
	<hr/>	
	87,026.00 ft ²	2.00 ac

EXISTING IMPERVIOUS AREA - ONSITE

BUILDINGS	3,575.00 ft ²	
GRAVEL AT 60% IMPERVIOUS	2,517.00 ft ²	
CONCRETE	2,376.00 ft ²	
	<hr/>	
	8,468.00 ft ²	0.19 ac

EXISTING IMPERVIOUS AREA - BASIN

R-1 TO R-5	2147379.935	
R-6 TO R-10	5240706.252	
CM1	4496.126	
Total Impervious	<hr/>	
	7,392,582.31 ft ²	169.71 ac

Total Shed Area	13,425,002.01 ft ²	308.20 ac
Existing Impervious Area	7,401,050.31 ft ²	169.90 ac
% Impervious		55.1 %
Developed Impervious Area	7,479,608.31 ft ²	171.71 ac
% Impervious		55.7 %

NOTE:

AVERAGE IMPERVIOUS % USED FOR RESIDENTIAL ZONING FOR BUILT-OUT ASSUMPTION

PARK	10%
R-1 TO R-5	50%
R-6 TO R-10	60%
R-11 TO R-15	70%
R-16 TO R-20	80%
CM1	85%

RUNOFF CURVE NUMBERS (TR55)

Table 2-2a: Runoff curve numbers for urban areas¹

Cover description	Average percent impervious area ²	CN for hydrologic soil group			
		A	B	C	D
Cover type and hydrologic condition					
<i>Fully developed urban areas (vegetation established)</i>					
Open space (lawns, parks, golf courses, cemeteries, etc.) ³ :					
Poor condition (grass cover <50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover >75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					PRE/ POST
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) ⁴		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre		38	61	75	83
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					PRE/ POST
Newly graded areas (pervious areas only, no vegetation) ⁵	77	86	91	94	
Idle lands (CNs are determined using cover types similar to those in table 2-2c)					

1: Average runoff condition, and $I_a = 0.2S$.

2: The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

3: CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

4: Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

5: Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.



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DEVELOPED CONDITIONS - PERVERIOUS COMPOSITE CURVE NUMBERS

JOB NUMBER: 285-020
PROJECT: Estates at Leahy Park
FILE: 285-020_hydro_planning

TOTAL AREA= 13,078,321 SF

DEVELOPED CONDITIONS

COVER TYPE	SOIL TYPE	AREA (SF)	SOIL GRADE	CURVE NUMBER
AVERAGE LOT SIZE 1/4 ACRE	5D Briedwell stony silt loam	447,279	B	75
AVERAGE LOT SIZE 1/4 ACRE	7B Cascade silt loam 7C Cascade silt loam 7D Cascade silt loam 7E Cascade silt loam	6,150,734	C	83
AVERAGE LOT SIZE 1/4 ACRE	10B Cornelius silt loam	111,166	C	83

AVERAGE LOT SIZE 1/4 ACRE	11B Cornelius and Kinton silt loams 11C Cornelius and Kinton silt loams 11D Cornelius and Kinton silt loams	2,530,655	C	83
AVERAGE LOT SIZE 1/4 ACRE	14C Delena Silt loam 16C Cornelius silt loam	2,367,176	D	87
AVERAGE LOT SIZE 1/4 ACRE	19B Helvetia silt loam 21B Helvetia silt loam	381,887	C	83

$$\text{DEVELOPED COMPOSITE CN} = \frac{(447,279 \times 75) + (9,174,442 \times 83) + (2,367,176 \times 87)}{13,078,321} = 76.5$$



TIME OF CONCENTRATION WATERSHED LAG METHOD

JOB NUMBER: 285-020
PROJECT: Estates at Leahy Park
FILE: 285-020_hydro_planning

$$T_c = \frac{(L)^{0.8} (S+1)^{0.7}}{1140 \times Y^{0.5}} \left(60 \frac{\text{min}}{\text{h}} \right)$$

$$S = \frac{1000}{CN} - 10$$

Where:

Tc = Time of Concentration, min
L = Flow Length, ft
Y = Average watershed land slope, %
S = Maximum potential retention, in
CN = Composite curve number

Constants:

CN = 83.9 (see Composite CN Calculation exhibit)

Y = 10%

S = 1.92 (Calculated with Composite CN)

Basin #	Area (AC)	Flow Length (ft)	Time of Concentration (min)
Sub-Basin 1	308.20	8746	62.43



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SANTA BARBARA URBAN HYDROGRAPHS
(EXISTING BASIN)

JOB NUMBER: 285-020
PROJECT: Estates at Leahy Park
FILE: 285-020_hydro_planning

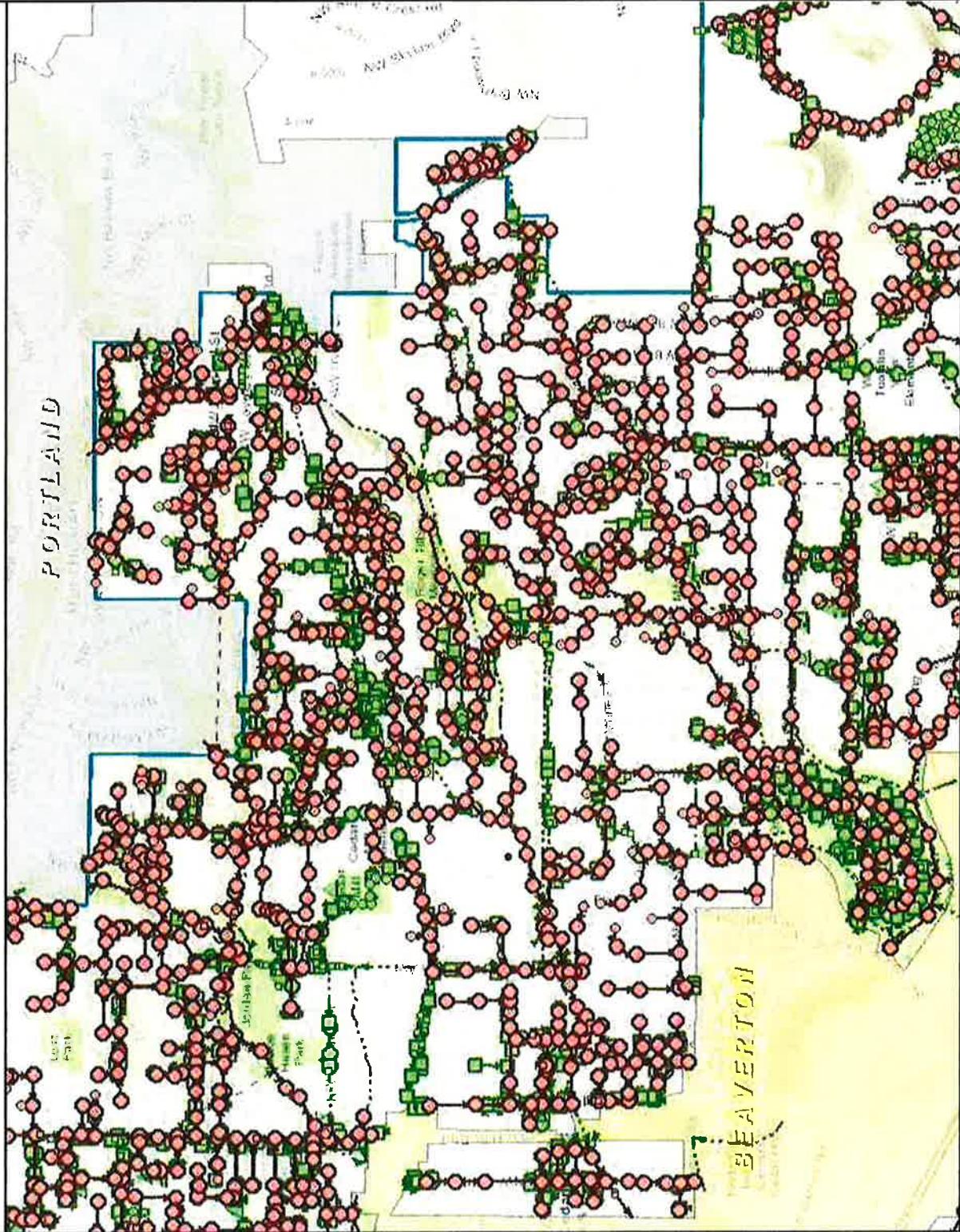
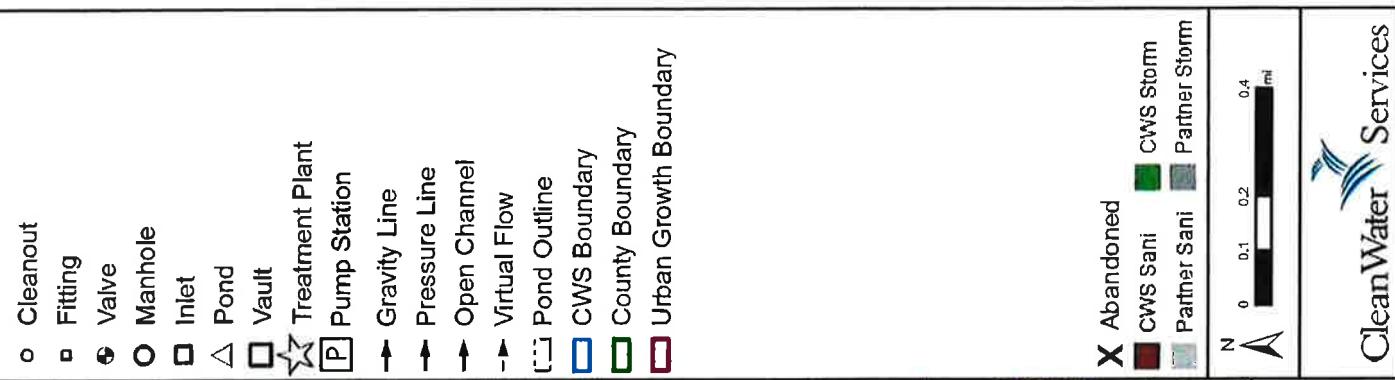
DESCRIPTION	STORM (YR)	DURATION (HR)	PRECIP. (IN)	AREA TOTAL (AC)	% IMP.	PERV. (AC)	AREA CN PER. (AC)	CN IMP. (MIN)	TIME (MIN)	Q (CFS)
EXISTING 25-YEAR PEAK DISCHARGE	25	24	3.9	308.20	55.1	138.29	77	169.90	98	62.43
DEVELOPED 25-YEAR PEAK DISCHARGE	25	24	3.9	308.20	55.7	136.49	77	171.71	98	62.43

APPENDIX 'A' – CLEAN WATER SERVICES MAPS



Clean Water Services -- Sewer Map

Legend



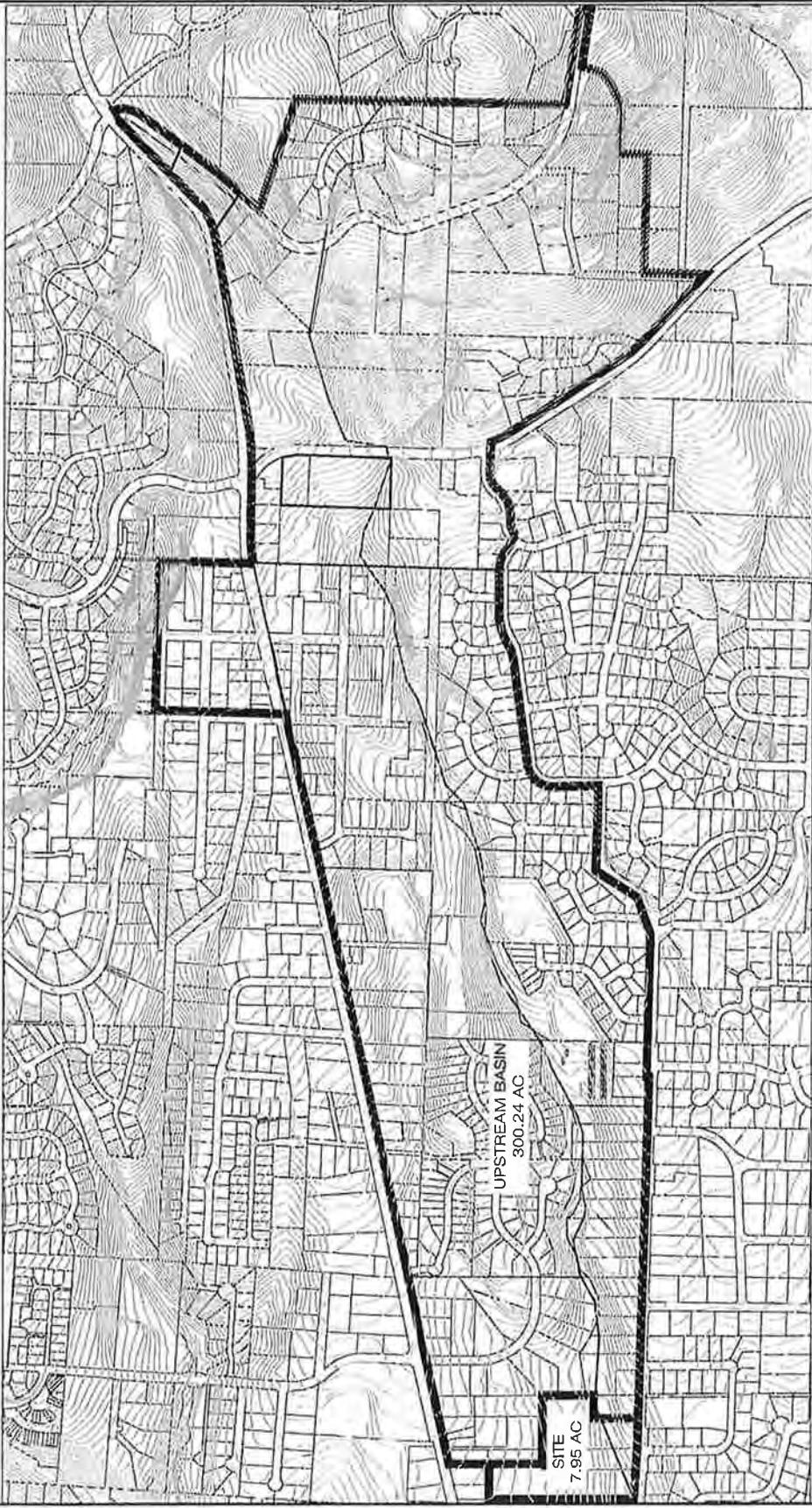
Disclaimer: This product and its associated data is for informational purposes only and was derived from several databases. It was not prepared for, and is not suitable for legal engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ensure accuracy. Clean Water Services cannot accept any responsibility for errors, omissions or positional accuracy. There are no warranties for this product. Manholes and service lateral locations are depicted using best available information but must be field verified and located before digging. Service laterals are marked in the field as "Unlocatable underground facilities" as defined in ORS 952-001-0010 (20). Easement data is not currently completed District-wide and should be used for general reference only. All sanitary or storm sewer data, with the exception of sanitary lines 4" and larger, located within the city limits of Beaverton, Cornelius, Forest Grove, Hillsboro, Lake Oswego, Portland, Sherwood, Tigard or Tualatin, need to be verified by contacting the individual city. Notification of any errors would be appreciated. Clean Water Services, Development Services, 2550 SW Hillsboro Highway, Hillsboro OR 97123, (503) 681-5100.

CleanWater Services

APPENDIX 'B' – DRAINAGE BASIN MAP

UPSTREAM ANALYSIS - BASIN MAP

ESTATES AT LEAHY PARK



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Project LEAHY ROAD				Area: 7.95 AC				Vert. Scale: N/A			
Design by	CFS	Date	08/2021	Reviewed by	BEP	Date	08/2021	Project No.	285-020	REF.	N/A
Drawn by	CFS	Date	08/2021	Horiz. Scale: 1"=500'							
BASINMAP.DWG				Project No. 285-020				Type PLANNING			
1 of 1				Sheet							

APPENDIX 'C' – DRAINAGE HAZARD AREA CROSS SECTION PROFILES AND CALCULATIONS

DHA CROSS SECTION EXHIBIT

ESTATES AT LEAHY ROAD



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www.pdg.com			
Design by CFS Date 08/2021	Drawn by CFS Date 08/2021	Reviewed by BEF Date 08/2021	Horiz. Scale: 285-020 REF.
Project No. 285-020	Date 08/2021	Vert. Scale:	
Project LEAHY ROAD	No. 285-020	Type PLANNING	Sheet 1 of 1

SECTION A-A: EXISTING BASIN

ESTATES AT LEAHY ROAD

Natural Channels

CIV OLS PRO

English Units

08-26-2021 14:45:35

Data Entered

Flow Rate = 112.09 cfs

Channel Slope = 0.0410 V:H

Distance (ft)	Elevation (ft)	Manning's N
0.00	375.00	0.100
24.16	371.10	0.100
43.83	369.57	0.100
48.00	365.01	0.100
57.82	369.23	0.100
70.51	371.41	0.100
100.00	377.24	0.100

Results

Flow Depth = 4.02 ft

Flow Rate = 112.09 cfs

Channel Slope = 0.0410 V:H

Wetted Area = 26.14 sq ft

Perimeter = 15.61 ft

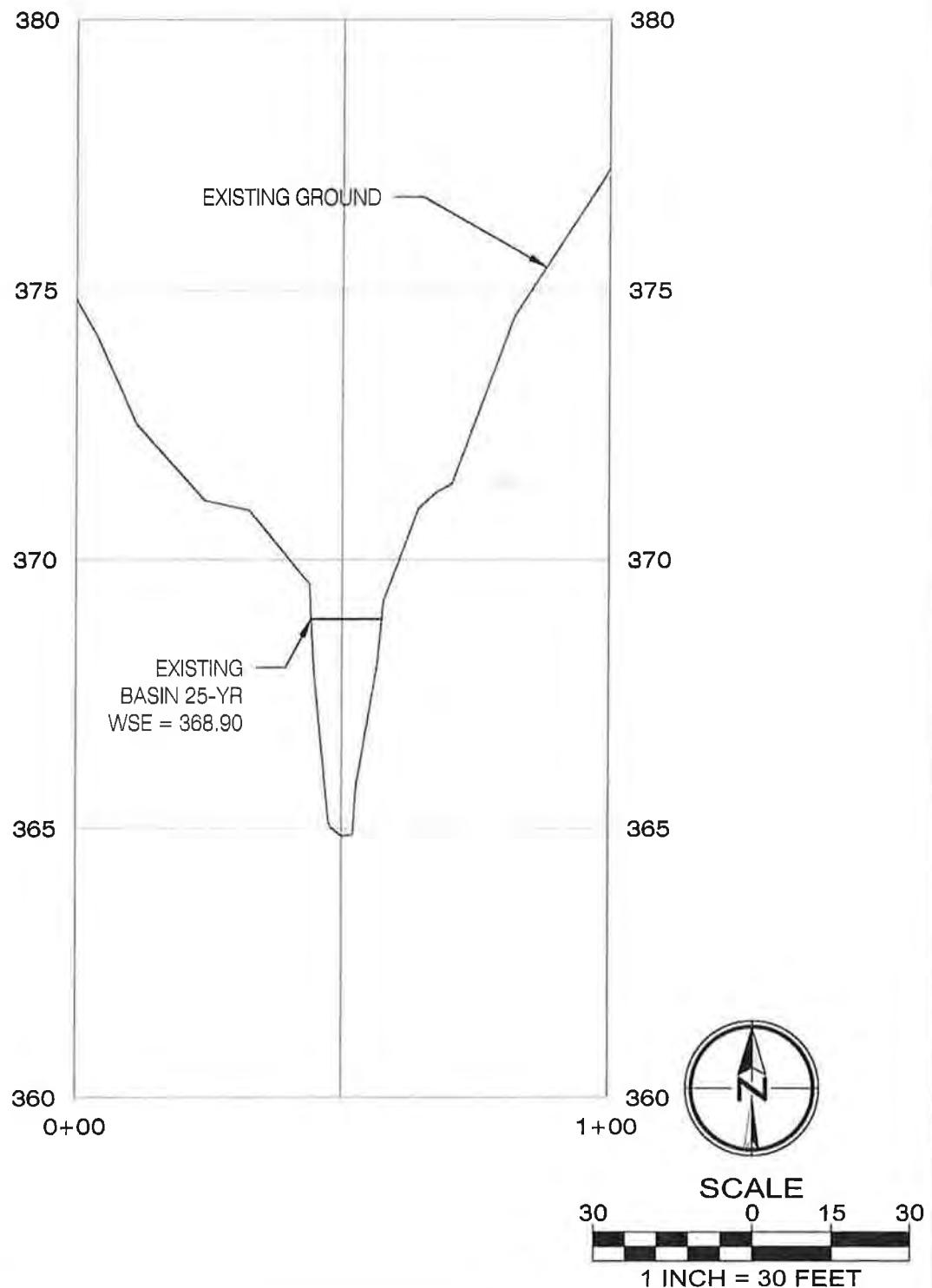
Velocity = 4.29 ft/s

Froude's Number = 0.53

Flow Regime = sub-critical flow

DHA SECTION A-A

ESTATES AT LEAHY ROAD



Project LEAHY ROAD No. 285-020	Designed by Drawn by Horiz. Scale:	CFS CFS	Date Date Vert. Scale: Type	08/2021 08/2021 PLANNING
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SECTION B-B: EXISTING BASIN ESTATES AT LEAHY ROAD

Natural Channels

CIV DOLS PRO

English Units

08-26-2021 14:52:46

Data Entered

Flow Rate = 112.09 cfs

Channel Slope = 0.0333 V:H

Distance (ft)	Elevation (ft)	Manning's N
0.00	375.01	0.100
15.00	373.20	0.100
38.55	372.70	0.100
48.18	367.04	0.100
52.21	366.83	0.100
55.17	370.55	0.100
100.00	377.94	0.100

Results

Flow Depth = 3.27 ft

Flow Rate = 112.09 cfs

Channel Slope = 0.0333 V:H

Wetted Area = 24.96 sq ft

Wetted Perimeter = 14.25 ft

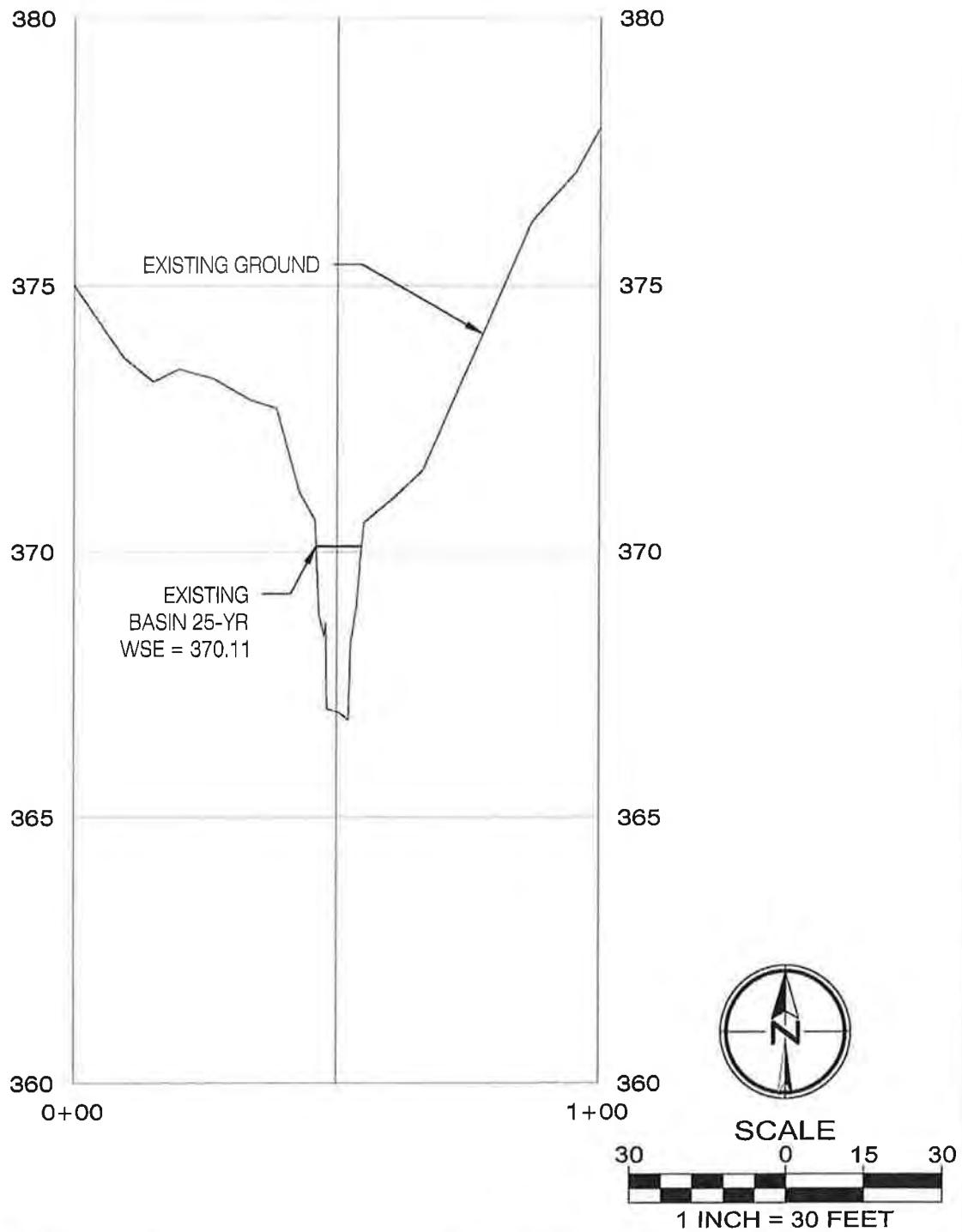
Flow Velocity = 4.49 ft/s

Froude's Number = 0.55

Flow Regime = sub-critical flow

DHA SECTION B-B

ESTATES AT LEAHY ROAD



Project
LEAHY ROAD
No.
285-020

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SECTION C-C: EXISTING BASIN ESTATES AT LEAHY ROAD

Natural Channels

CIV. JOLS PRO

English Units

08-26-2021 14:50:31

Data Entered

Flow Rate = 112.09 cfs

Channel Slope = 0.0213 V:H

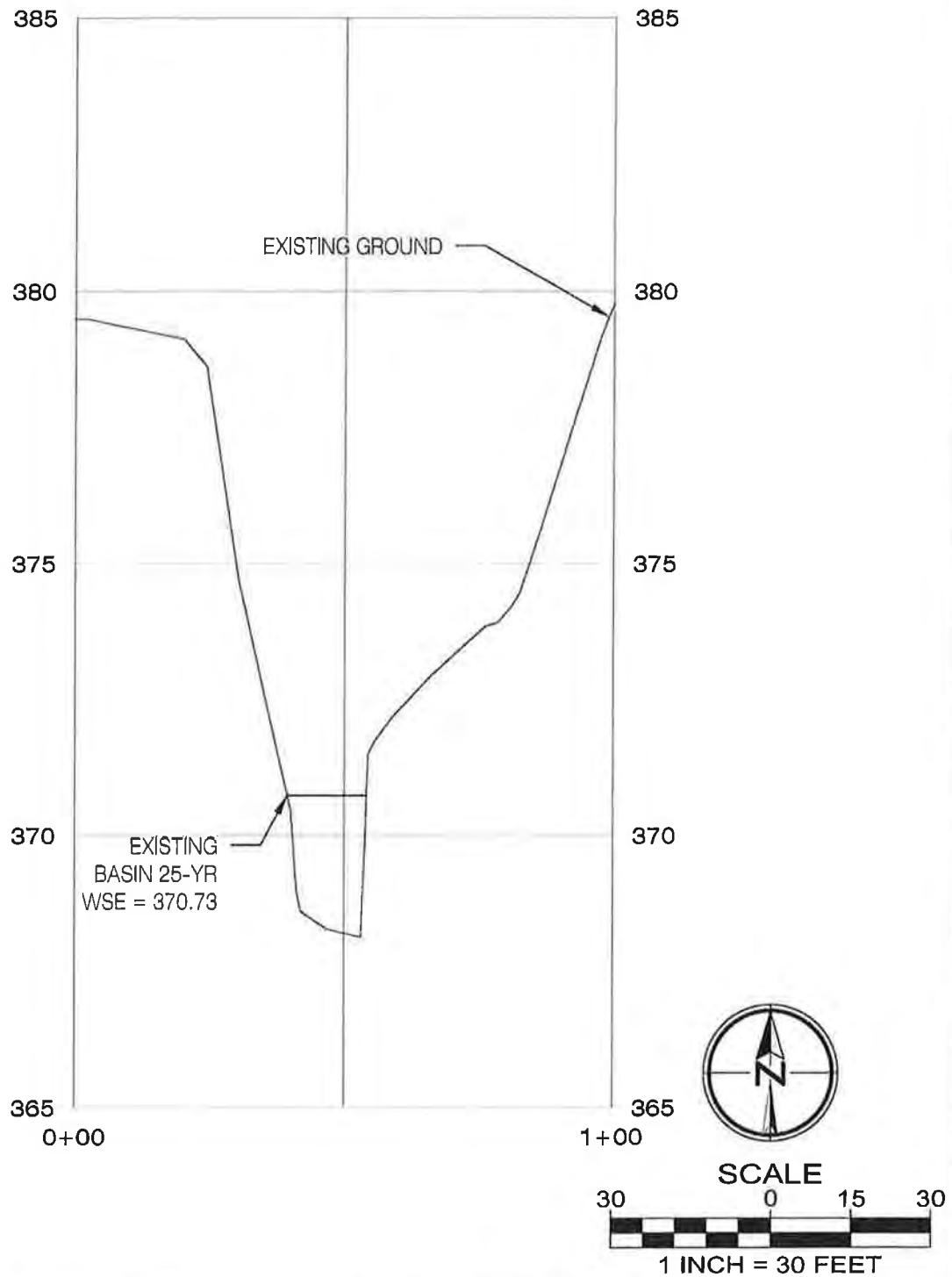
Distance (ft)	Elevation (ft)	Manning's N
0.00	379.50	0.100
24.48	378.63	0.100
41.95	368.60	0.100
53.19	368.13	0.100
54.46	371.49	0.100
81.22	374.22	0.100
100.00	379.77	0.100

Results

Flow Depth	=	2.60 ft
Flow Rate	=	112.09 cfs
Channel Slope	=	0.0213 V:H
Wetted Area	=	31.81 sq ft
Wetted Perimeter	=	18.31 ft
Flow Velocity	=	3.52 ft/s
Froude's Number	=	0.44
Flow Regime	=	sub-critical flow

DHA SECTION C-C

ESTATES AT LEAHY ROAD



Project
LEAHY ROAD
No.
285-020

Designed by CFS Date 08/2021
Drawn by CFS Date 08/2021
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Vert. Scale:
Type PLANNING



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SECTION D-D: EXISTING BASIN ESTATES AT LEAHY ROAD

National Channel

CLRS PRO

English Units

08-26-2021 14:57:00

Data Entered

Flow Rate = 112.09 cfs
Channel Slope = 0.0098 V:H

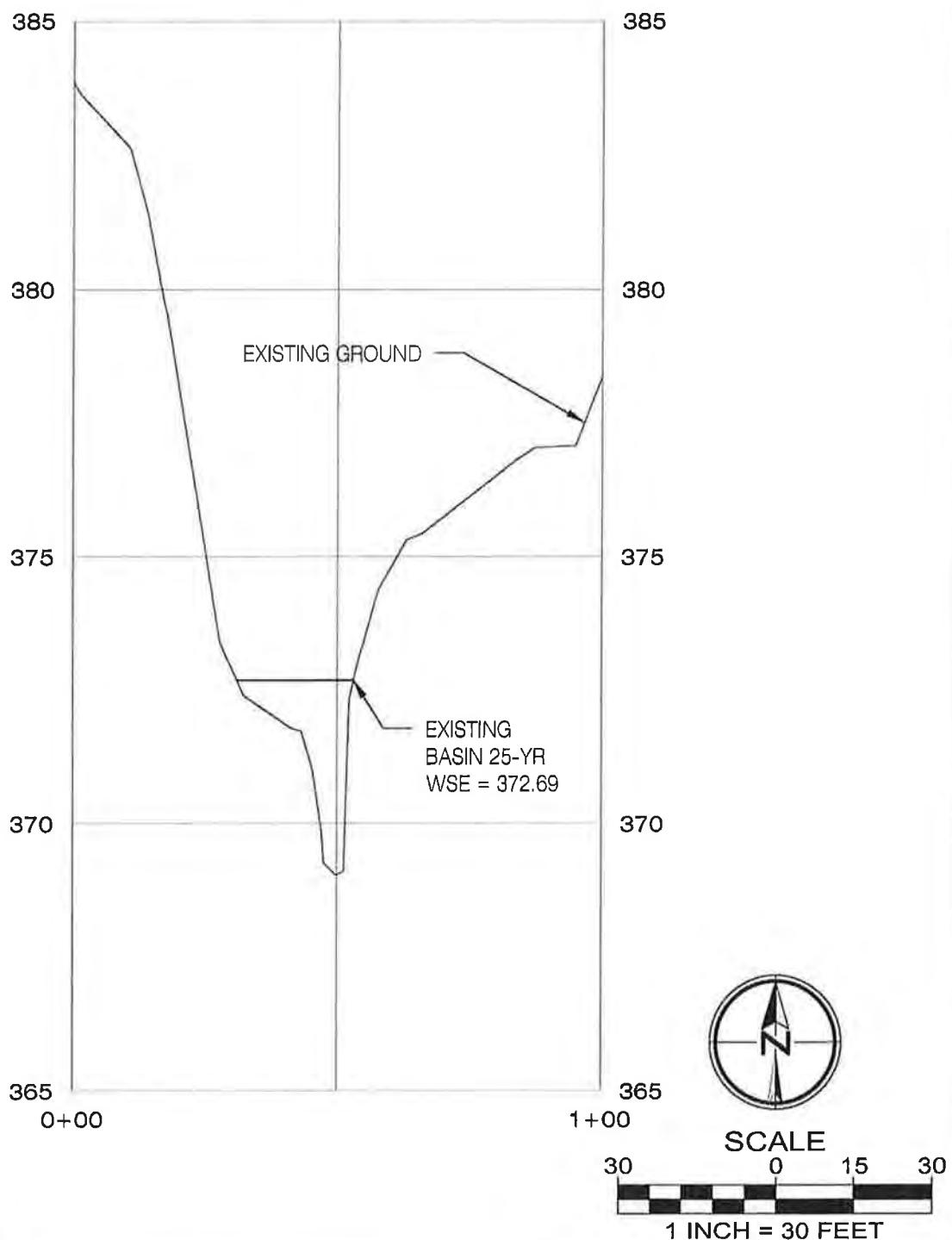
Distance (ft)	Elevation (ft)	Manning's N
0.00	383.84	0.100
32.42	372.40	0.100
41.24	371.80	0.100
47.50	369.27	0.100
51.34	369.11	0.100
63.00	375.32	0.100
100.00	378.35	0.100

Results

Flow Depth = 3.65 ft
Flow Rate = 112.09 cfs
Channel Slope = 0.0098 V:H
Wetted Area = 46.15 sq ft
Wetted Perimeter = 28.28 ft
Flow Velocity = 2.43 ft/s
Froude's Number = 0.33
Flow Regime = sub-critical flow

DHA SECTION D-D

ESTATES AT LEAHY ROAD



Project
LEAHY ROAD
No.
285-020

Designed by CFS Date 08/2021
Drawn by CFS Date 08/2021
Horiz. Scale:
Vert. Scale:
Type PLANNING



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SECTION E-E: EXISTING BASIN

ESTATES AT LEAHY ROAD

Natural Channels

Cl. OLS PRO

English Units

08-26-2021 15:00:36

Data Entered

Flow Rate = 112.09 cfs

Channel Slope = 0.0094 V:H

Distance (ft)	Elevation (ft)	Manning's N
11.33	387.65	0.100
47.50	369.83	0.100
50.89	369.86	0.100
67.48	376.36	0.100
99.86	379.21	0.100

Results

Flow Depth = 3.79 ft

Flow Rate = 112.09 cfs

Channel Slope = 0.0094 V:H

Wetted Area = 45.36 sq ft

Wetted Perimeter = 22.26 ft

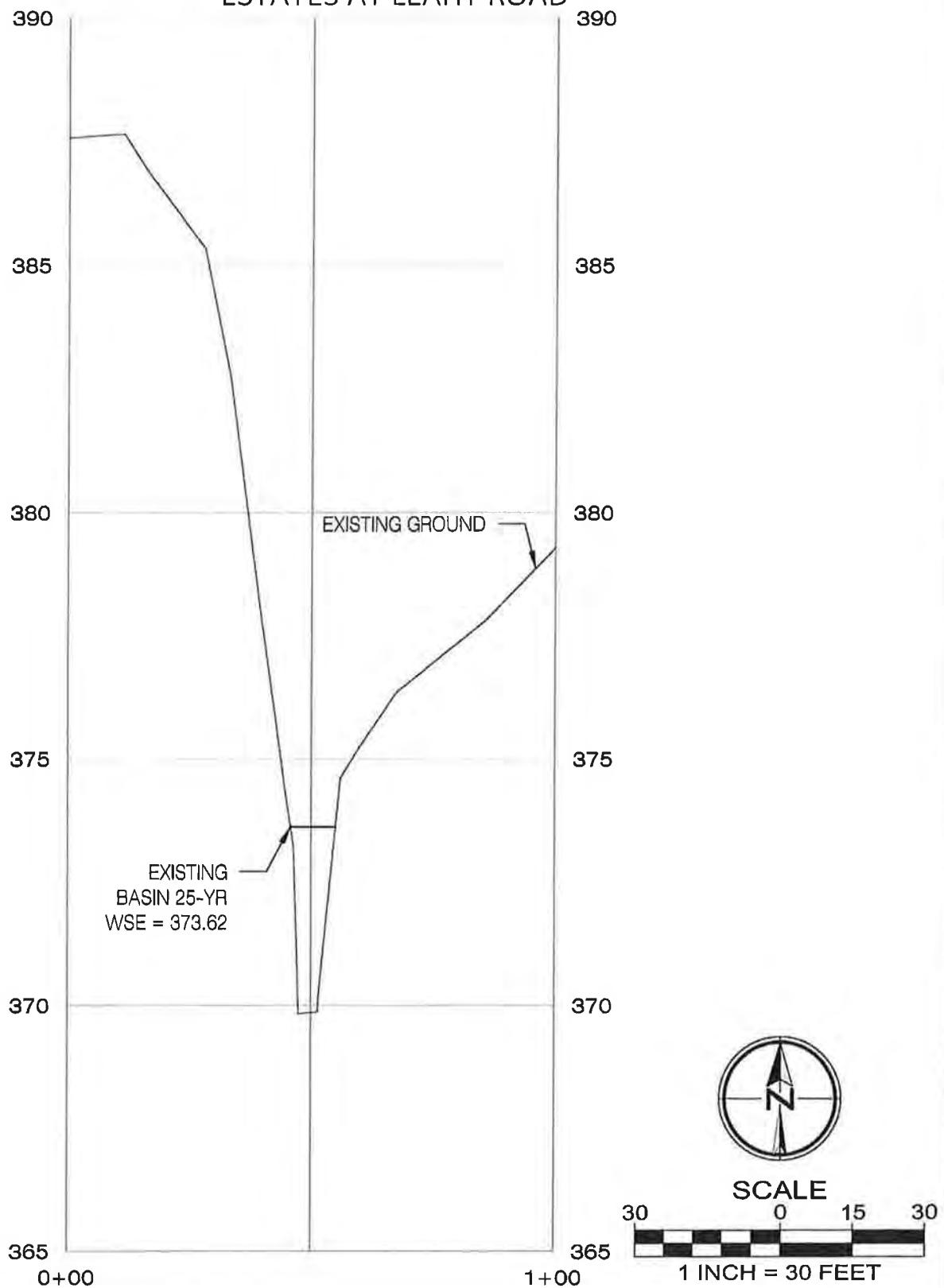
Flow Velocity = 2.47 ft/s

Froude Number = 0.29

Flow Regime = sub-critical flow

DHA SECTION E-E

ESTATES AT LEAHY ROAD



Project
LEAHY ROAD
No.
285-020

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Drawn by CFS Date 08/2021
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SECTION F-F: EXISTING BASIN ESTATES AT LEAHY ROAD

National Channels

CH 2DLS PRO

English Units

08-26-2021 15:03:17

Data Entered

Flow Rate = 112.09 cfs

Channel Slope = 0.0381 V:H

Distance (ft)	Elevation (ft)	Manning's N
0.00	392.09	0.100
26.45	377.13	0.100
42.28	375.75	0.100
47.53	371.57	0.100
55.73	377.01	0.100
100.00	381.12	0.100

Results

Flow Depth = 4.35 ft

Flow Rate = 112.09 cfs

Channel Slope = 0.0381 V:H

Wetted Area = 26.32 sq ft

Wetted Perimeter = 16.56 ft

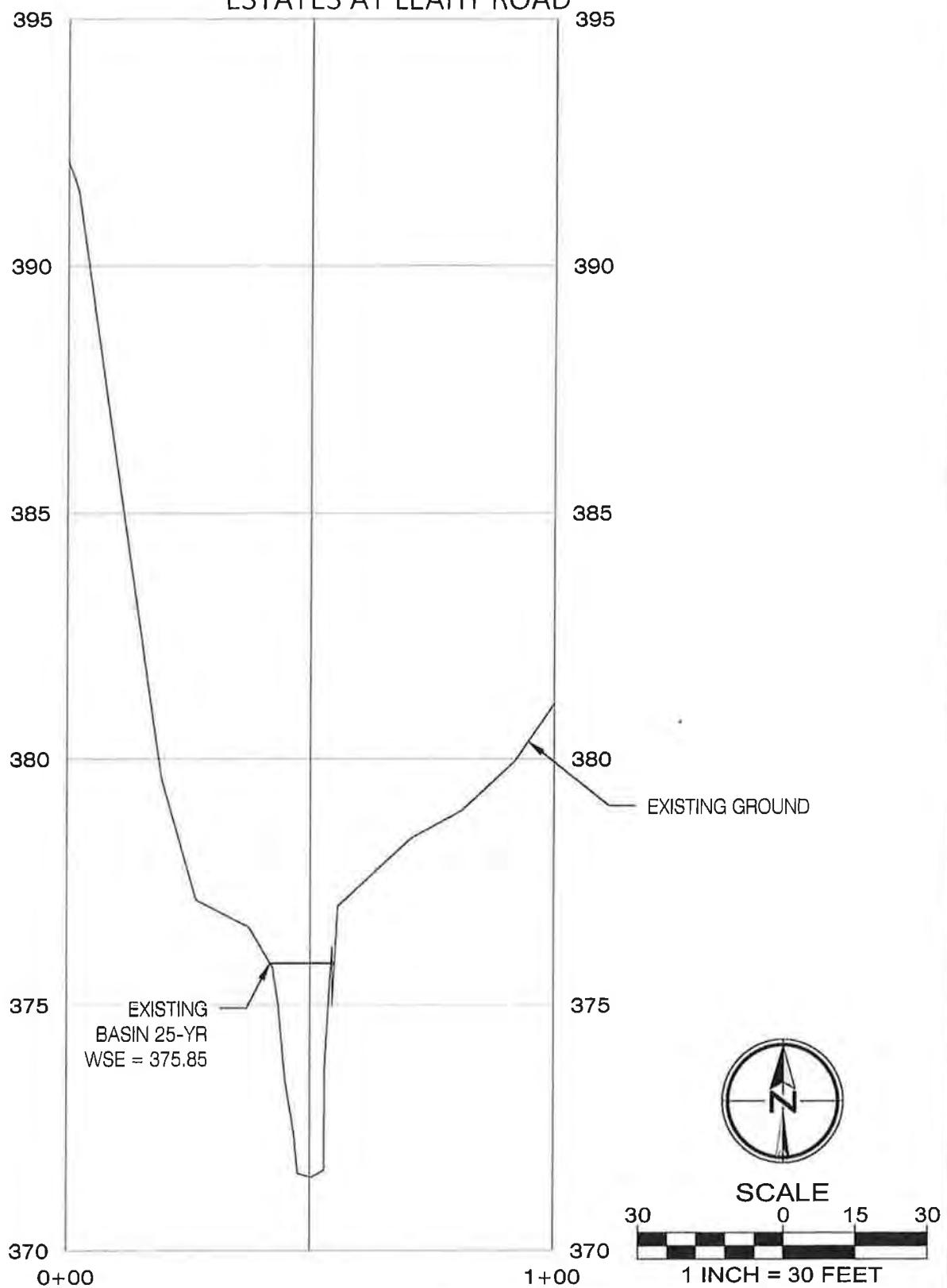
Flow Velocity = 4.26 ft/s

Froude's Number = 0.54

Flow Regime = sub-critical flow

DHA SECTION F-F

ESTATES AT LEAHY ROAD



Project
LEAHY ROAD
No.
285-020

Designed by
Drawn by
Horiz. Scale:

CFS
CFS

Date 08/2021
Date 08/2021
Vert. Scale:
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SECTION G-G: EXISTING BASIN ESTATES AT LEAHY ROAD

National Channels

CIV DOLS PRO

English Units

08-26-2021 15:05:51

Data Entered

Flow Rate = 112.09 cfs

Channel Slope = 0.0504 V:H

Distance (ft)	Elevation (ft)	Manning's N
0.00	395.19	0.100
14.59	393.92	0.100
47.98	373.66	0.100
54.55	374.43	0.100
55.88	377.40	0.100
100.00	382.90	0.100

Results

Flow Depth = 2.70 ft

Flow Rate = 112.09 cfs

Channel Slope = 0.0504 V:H

Wetted Area = 22.06 sq ft

Wetted Perimeter = 13.94 ft

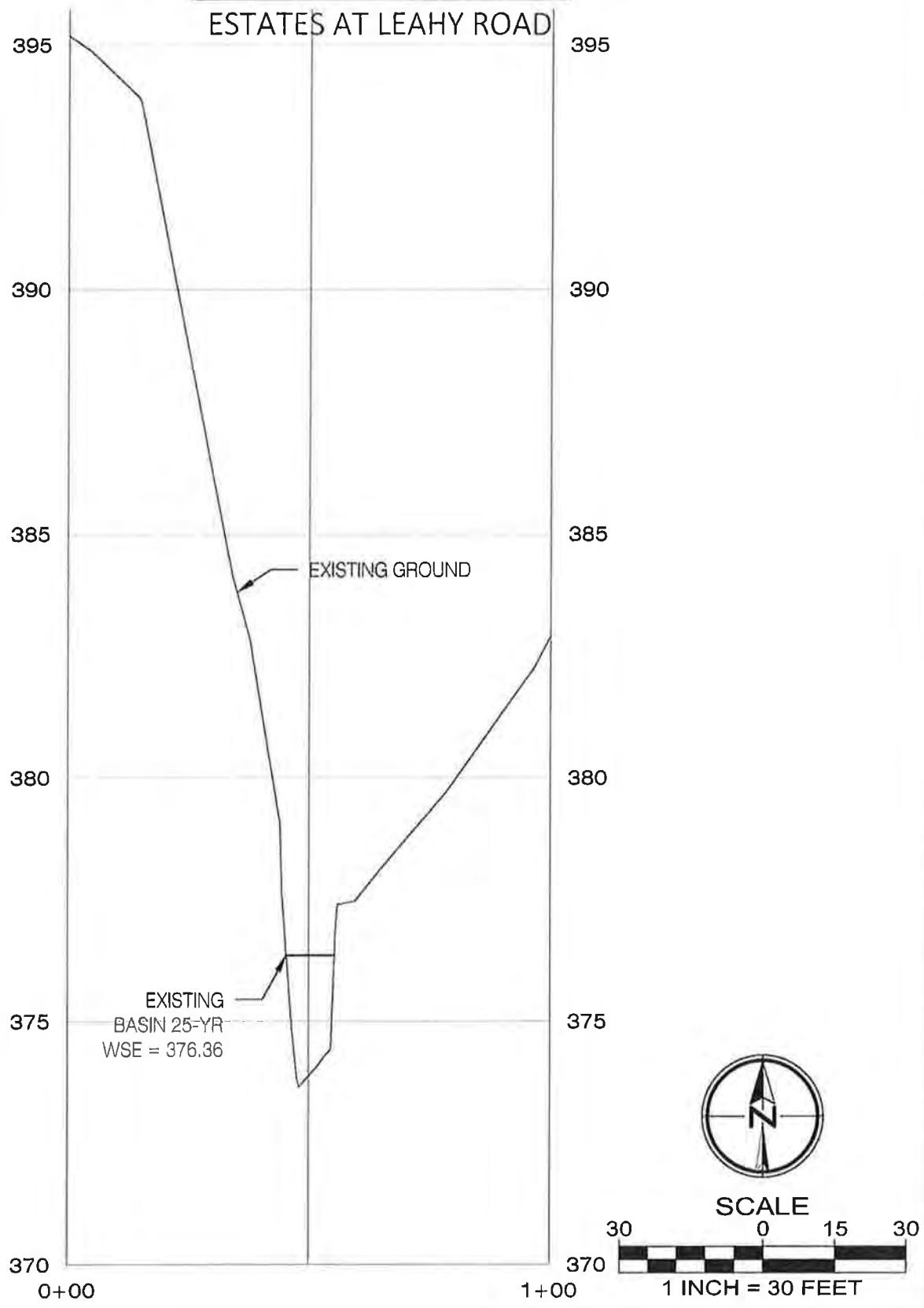
Flow Velocity = 5.08 ft/s

Froude's Number = 0.66

Flow Regime = sub-critical flow

DHA SECTION G-G

ESTATES AT LEAHY ROAD



Project LEAHY ROAD No. 285-020	Designed by Drawn by Horiz. Scale:	CFS CFS	Date Date Vert. Scale: Type	08/2021 08/2021 PLANNING
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SECTION H-H: EXISTING BASIN ESTATES AT LEAHY ROAD

National Channels

CIV OLS PRO

English Units

08-26-2021 15:08:35

Data Entered

Flow Rate = 112.09 cfs

Channel Slope = 0.0373 V:H

Distance (ft)	Elevation (ft)	Manning's N
0.00	395.83	0.100
28.79	379.24	0.100
47.50	376.65	0.100
54.32	376.46	59.260
59.26	381.81	100.000
100.00	383.80	0.100

Results

Flow Depth = 2.22 ft

Flow Rate = 112.09 cfs

Channel Slope = 0.0373 V:H

Wetted Area = 31.76 sq ft

Wetted Perimeter = 24.69 ft

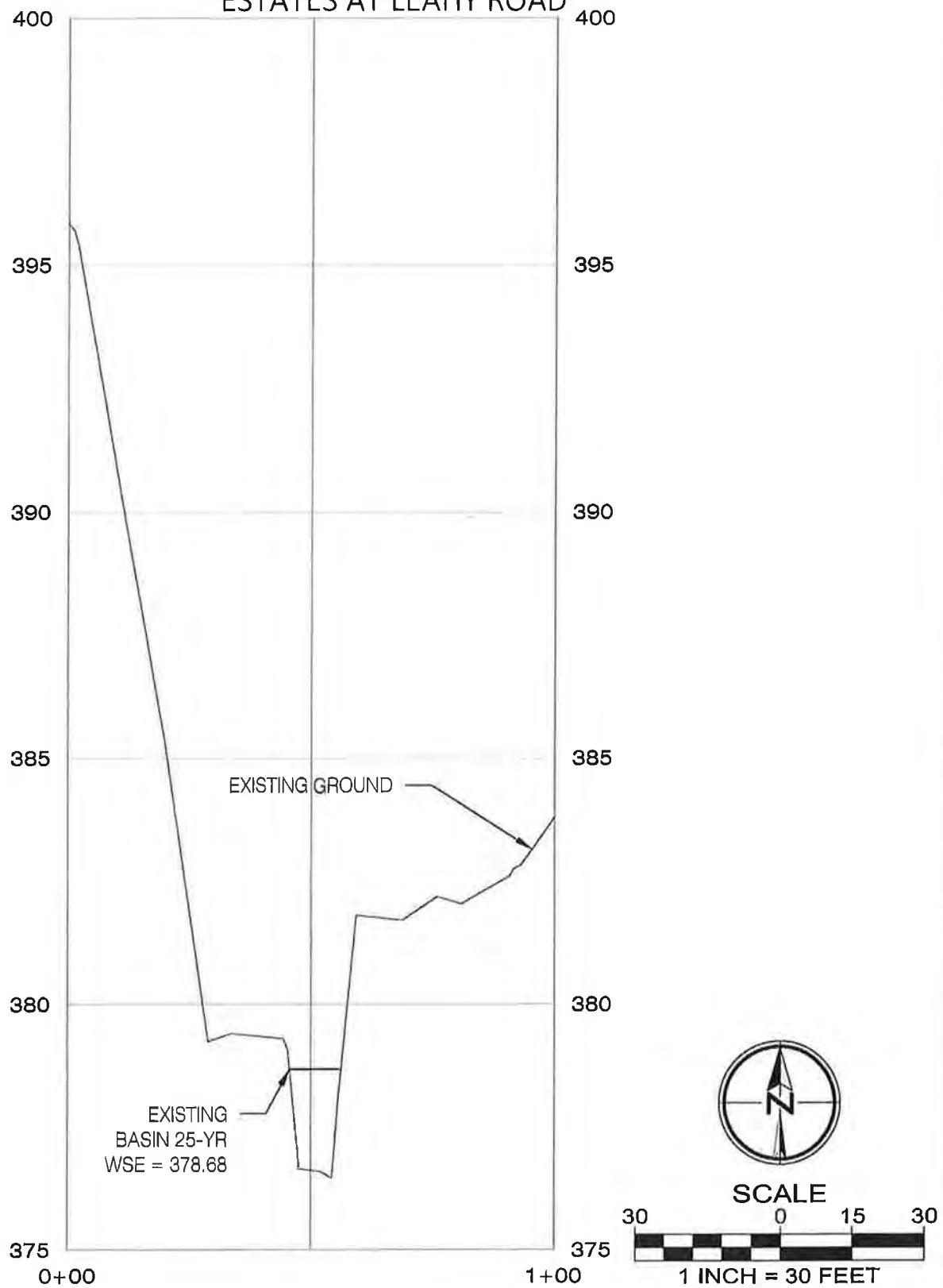
Flow Velocity = 3.53 ft/s

Froude's Number = 0.54

Flow Regime = sub-critical flow

DHA SECTION H-H

ESTATES AT LEAHY ROAD



SECTION I-I: EXISTING BASIN ESTATES AT LEAHY ROAD

National Channels

CIV JOLS PRO

English Units

08-26-2021 15:11:27

Data Entered

Flow Rate = 112.09 cfs
Channel Slope = 0.0506 V:H

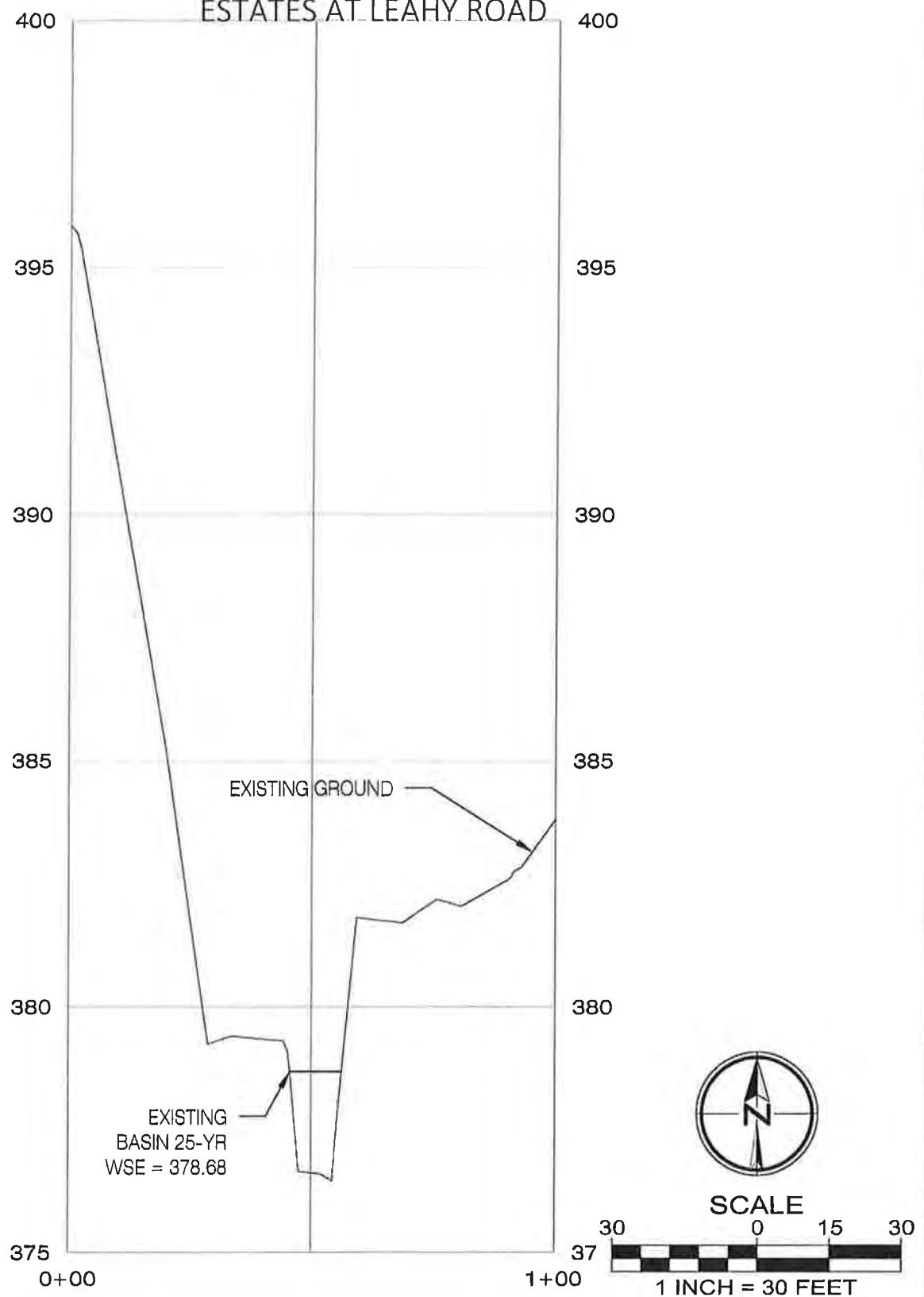
Distance (ft)	Elevation (ft)	Manning's N
0.00	395.00	0.100
36.24	383.73	0.100
43.37	385.80	0.100
47.50	377.49	0.100
54.80	377.88	0.100
56.33	383.10	0.100
76.60	384.07	0.100
100.00	389.31	0.100

Results

Flow Depth = 2.62 ft
Flow Rate = 112.09 cfs
Channel Slope = 0.0506 V:H
Wetted Area = 20.18 sq ft
Wetted Perimeter = 12.57 ft
Flow Velocity = 5.55 ft/s
Froude's Number = 0.66
Flow Regime = sub-critical flow

DHA SECTION I-I

ESTATES AT LEAHY ROAD



Project
LEAHY ROAD
No.
285-020

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APPENDIX 'D' – FIRM PANEL

APPENDIX 'D' – DOWNSTREAM CULVERT ANALYSIS



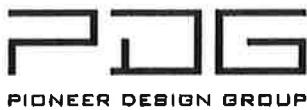
PIONEER DESIGN GROUP

STORMWATER CONVEYANCE CALCULATIONS

JOB NUMBER: 285-020
 PROJECT: Estates at Leahy Park
 FILE: 285-020_hydro_planning
 Design Storm: 25 YR
 Storm Duration: 24 HRS
 Precipitation: 3.9 IN
 Manning's "n": 0.013
 Manning's "n": 0.020

LINE	INC.	AREA (AC)	% IMP.	AREA (AC)	CN PER.	AREA (AC)	IMP. (AC)	TIME (MIN)	Q (CFS)	PIPE SIZE (IN)	SLOPE (FT/FT)	Qf (CFS)	Q/Qf (%)	Vf (FPS)	V/Vf (%)	ACTUAL V (FPS)
*EXISTING CULVERT	0.00	308.20	55.13	138.29	77	169.90	98	62.43	112.09	41	0.0116	100.57	111%	11.08	1.31	14.56
PROPOSED CULVERT	2.00	308.20	55.71	136.49	77	171.71	98	62.43	112.67	48	0.0100	119.20	95%	9.49	1.15	10.86

* DUE TO MULTIPLE SIDE BY SIDE CULVERTS, AN EQUIVALENT DIAMETER HAS BEEN USED TO ACCOUNT FOR A 15% REDUCTION IN CAPACITY FROM ENTRANCE LOSSES



PIPE CULVERTS WITH ENTRANCE CONTROL HEADWATER DEPTH

JOB: 285-020
PROJECT: Estates at Leahy Road
FILE: 285-020_downstream culverts

CIRCULAR PIPE:

$$H/D = K_1(Q/D^{5/2})^2 + K_2$$

WHERE:

H - Depth of Headwater, ft.

D - Pipe Diameter, ft.

Q - Quantity of Flow, cfs

K₁ & K₂ - coefficients which depend upon the type of entrance and the kind of pipe.

PIPE ARCH:

$$H/D = K_1(Q/BD^{5/2})^2 + K_2$$

WHERE:

H - Depth of Headwater, ft.

D - Rise of Pipe-Arch, ft.

B - Span of Pipe Arch, ft.

Q - Quantity of Flow, cfs

K₁ & K₂ - coefficients which depend upon the type of entrance and the kind of pipe.

PIPE TYPE	K1	K2
Square Headwall		
Circular Pipe	0.0549	0.697
Pipe-Arch	0.6000	0.695
Headwall with 45 degree Wingwalls		
Circular Pipe	0.0515	0.716
Projecting Pipe		
Concrete (groove end)	0.0573	0.661
Corrugated Metal	0.0890	0.545
Pipe-Arch	0.0849	0.590

Reference: National Bureau of Standards, Report 4444



PIPE CULVERTS WITH ENTRANCE CONTROL HEADWATER DEPTH (BASIN CULVERT)

JOB: 285-020
PROJECT: Estates at Leahy Road
FILE: 285-020 downstream culverts

Existing Condition - 2-24" CMP Culvert

CIRCULAR PIPE:

$$H/D = K_1(Q/D^{5/2})^{2+K_2}$$

WHERE:

H - Depth of Headwater, ft.

D - Pipe Diameter, ft.

Q - Quantity of Flow, cfs

K₁ & K₂ - coefficients which depend upon the type of entrance and the kind of pipe.

Q= 112.09 cfs
*D= 3.40 ft
K1= 0.0890
K2= 0.545

ACTUAL H= 3.28 ft

IF YOU HAVE:

ALLOWABLE H=	5.10 ft	Max H of 1.5 times the pipe diameter per CWS R&O 17-5, 5.07.6.b.2 Headwater
ALLOWABLE Q=	69.82 cfs	

* DUE TO MULTIPLE SIDE BY SIDE CULVERTS, AN
EQUIVALENT DIAMETER HAS BEEN USED TO
ACCOUNT FOR A 15% REDUCTION IN CAPACITY FROM
ENTRANCE LOSSES



PIPE CULVERTS WITH ENTRANCE CONTROL HEADWATER DEPTH (BASIN CULVERT)

JOB: 285-020
PROJECT: Estates at Leahy Road
FILE: 285-020_downstream culverts

Developed Condition - 4' x 5' Box Culvert

Mannings:

$$Q=VA=(1.49/n)A(A/P)^{(2/3)}S^{(1/2)}$$

WHERE:

Q - Quantity of Flow, cfs
V - Velocity, ft/s
A - Area of Flow, sf
n - manning's coefficient
P - Wetted perimeter, ft
S - slope, ft/ft

Q= 112.67 cfs
A= 16.00 ft
P= 16.00 ft
n= 0.0200
S= 0.034

ACTUAL H= 4.02 ft

IF YOU HAVE:

ACTUAL H= 4.02 ft

ALLOWABLE Q= 219.79 cfs



CIVIL • PLANNING • SURVEY • LANDSCAPE
P 503 643.8286 www.pd-grp.com
9020 SW Washington Square Rd Suite 170
Portland, Oregon 97223

**PRELIMINARY INTERSECTION
SIGHT DISTANCE CERTIFICATION**

August 27, 2021

WASHINGTON COUNTY, OREGON
Department of Land Use and Transportation
Planning and Development Services Division
Current Planning
155 North First Avenue, Suite 350 – MS13,
Hillsboro, Oregon 97124-3072



VALID THROUGH 12-31-21

ATTN: ASSURANCES
RE: Estates at Leahy Road
PRELIMINARY Sight Distance Certification
NW Leahy Road and Street 'A'

The intersection of NW Leahy Road and Street 'A' for this project is located 43 feet east of the site's west property line onto NW Leahy Road

Speed used for sight distance	35 M.P.H.	Source: posted
Sight Distance Requirement	350	Source: Washington County Code Section 501-8.5, AASHTO
Height used for measurement	Object Height: 4.25' Driver Eye Height: 3.5'	Source: Washington County, AASHTO
Setback Measurement	15 feet	From: curb line
Sight Distance Measurement	398 feet	Direction: looking <i>East</i> from the access
Sight Distance Measurement	570 feet	Direction: looking <i>West</i> from the access

The existing sight distance to the west is inhibited by existing vegetation that is to be removed with the proposed development. With the removal of existing vegetation there will be clear sight distance to the end of the road. In conclusion, I hereby certify that the intersection sight distance at the location described above conforms to the requirements for sight distance as set forth in the Washington County Community Development.

Sight Distance requires a Design Exception: No

Sight distance requires an easement: No

Brent Fitch, P.E.



Site Entrance onto NW Leahy Road
(Looking East)



Site Entrance onto NW Leahy Road
(Looking West)

WASHINGTON COUNTY
LAND USE AND TRANSPORTATION
SURVEYOR'S OFFICE

SUBDIVISION PLAT NAMING

I request that the Washington County Surveyor's Office reserve the following subdivision name:

PROPOSED NAME OF SUBDIVISION:	" The Estates at Leahy Park "
MAP AND TAX LOT NUMBER:	IN 135CB - 400/2400/2300
CITY JURISDICTION (Which City?) or COUNTY JURISDICTION:	Washington County
SURVEYOR'S NAME: PLS NUMBER: COMPANY NAME:	Michael H Harris 57863 Pioneer Design Group
OWNER'S NAME:	Westwood Homes

I understand that if the name is not used within five years, it will be automatically canceled.

Name of person reserving name: Michael Harris

Company name: Pioneer Design Group

Address: 9020 SW Washington Sq. Rd. Ste. 170 Portland, OR 97223

Telephone number: 503-643-8286

E-Mail: miharris@pdtgrp.com

P. Smetow

12-24-2020

Name added to SID



Name approved

Date

Washington County Surveyor's Office

155 North First Avenue, Suite 350, MS 15, Hillsboro, OR 97124 Phone: 503-846-8723



PROPERTY INFORMATION REPORT

Date: July 13, 2021

File No.: 21-233477
Property: 10345 NW Leahy Road, Portland, OR 97229

Attn:

Your Reference:

REPORT FEE:

The information contained in this report is furnished by WFG National Title Insurance Company (the "Company") as an information service based on the records and the indices maintained by the Company for the county identified below. This report does not constitute title insurance and is not to be construed or used as a commitment for title insurance. The Company assumes and shall have no liability whatsoever for any errors or inaccuracies in this report. In the event any such liability is ever asserted or enforced, such liability shall in no event exceed the paid herein. No examination has been made of the Company's records, other than as specifically set forth in this report.

The effective date of this report is July 7, 2021

REPORT FINDINGS

- A. The land referred to in this report is located in the county of Washington State of Oregon, and is described as follows:

See Attached Exhibit "A"

- B. As of the Effective Date and according to the last deed of record, we find the title to the land to be vested as follows:

Roy M. Hayes, Trustee, or his successors in trust, under the Roy M. Hayes Living Trust dated August 3, 2010, as to Parcel I;

Gregory B. Lorts and Janelle C. Lorts, husband and wife, as to Parcel II

- C. As of the Effective Date and according to the Public Records, the Land is subject to the following liens and encumbrances, which are not necessarily shown in the order of priority:

1. 2021-2022 taxes, a lien not yet due and payable.
2. As disclosed by the tax roll the premises herein described have been zoned or classified for Urban Tract use. At any time that said land is disqualified for such use, the property may be subject to additional taxes or penalties and interest.
3. Any adverse claim based upon the assertion that:
 - a) Said land or portion thereof is now or at any time has been below the high water mark of Unnamed Creek.
4. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.

5. Easement, including the terms and provisions thereof:
- | | |
|-----------------|--|
| For | : Sewer |
| Granted to | : Unified Sewerage Agency of Washington County, its successors and assigns |
| Recorded | : November 20, 1981 |
| Recording No(s) | : <u>81039095</u> |
| Affects | : Parcel II |
6. Easement, including the terms and provisions thereof:
- | |
|--------------------------------------|
| For : Sewer |
| Granted to : Unified Sewerage Agency |
| Recorded : March 30, 1982 |
| Recording No(s) : <u>82-007852</u> |
| Affects : Parcel I |
7. Prior to the issuance of the insurance on any encumbrance or conveyance executed by the Trustee of the Trust referred to herein, a Certification of Trust must be completed and executed by the Trustees. For title insurance purposes, we will require a Certification of Trust to be completed at the time of closing for any documents which require the Trustee(s)' signature(s).
8. Any unrecorded leases or rights of tenants in possession.

END OF EXCEPTIONS

NOTE: Please be advised that we have searched the records and do not find any open Deeds of Trust. If you should have knowledge of an outstanding obligation, please contact the Title Department for further review.

NOTE: Taxes paid in full for 2020 -2021

Levied Amount	: \$4,612.16
Property ID No.	: R647250
Levy Code	: 051.50
<u>Map</u> Tax Lot No.	: 1N135CB02300

Affects Parcel I

NOTE: Taxes paid in full for 2020 -2021

Levied Amount	: \$9,679.94
Property ID No.	: R647287
Levy Code	: 051.50
<u>Map</u> Tax Lot No.	: 1N135CB02400

Affects Parcel II

NOTE: In no event shall WFG National Title Insurance Company have any liability for the tax assessor's imposition of any additional assessments for omitted taxes unless such taxes have been added to the tax roll and constitute liens on the property as of the date of closing. Otherwise, such omitted taxes shall be the sole responsibility of the vestee(s), herein.

NOTE: We find NO judgments or Federal Tax Liens against the name(s) of Roy Hayes Living Trust and Gregory Lorts and Janelle Lorts.

NOTE: The following is incorporated herein for information purposes only and is not part of the exception from coverage (Schedule B-II of the prelim and Schedule B of the policy):The following instrument(s), affecting said property, is (are) the last instrument(s) conveying subject property filed for record within 24 months of the effective date of this preliminary title report:

None of Record

Note: Links for additional supporting documents:

Vesting Deed - Parcel I

Vesting Deed - Parcel II

Adjoiners

Aerial

END OF REPORT

Joel M. Winchester
WFG National Title Insurance Company
12909 SW 68th Parkway, Suite 350
Portland, OR 97223

Phone: (503) 941-2827

Fax:

Email: jwinchester@wfgnationaltitle.com

EXHIBIT A
LEGAL DESCRIPTION

Parcel I:

Beginning at a point 182.51 feet South of an iron pipe set 311.45 feet West of an iron pipe set South 87° 47' East 662 feet and South 737.71 feet from the quarter corner on the West line of Section 35, Township 1 North, Range 1 West, Willamette Meridian, Washington County, Oregon; thence South 385 feet to a point; thence South 88° 53' East 150.72 feet to a point; thence North 385 feet to a point; thence North 88° 53' West to the point of beginning.

TOGETHER with a permanent easement upon 30 feet of land abutting upon the East side of the hereinabove described tract, which said 30-foot strip is to be used for road purposes, it being understood that the grantees herein take said easement subject to paying one-half of the cost of construction and maintenance of said roadway;

ALSO, beginning at an iron pipe set South 87° 47' East 662 feet and South 737.71 feet from the quarter corner on the West line of Section 35, Township 1 North, Range 1 West, Willamette Meridian, Washington County, Oregon; thence South 573.59 feet to an iron pipe; thence North 88° 53' West 390.63 feet and set an iron pipe; thence North 565.87 feet and set to an iron pipe; thence East 390.45 feet to the point of beginning,

EXCEPTING THEREFROM the following described tract: Beginning at the Southwest corner of a tract described in deed to Klaas Ellerbroek, et ux, recorded in Book 351, Page 539, Deed Records, Washington County, Oregon; thence North along the West line thereof 285 feet; thence North 88° 53' West 130.91 feet to a point; thence South and parallel with the West line of said Ellerbroek tract 285 feet to a point in the center, of Leahy Road; thence South 88° 53' East 130.91 feet to the point of beginning;

ALSO EXCEPTING the West 79 feet therefrom.

Parcel II:

A tract of land situated in the S.W. 1/4 of Section 35, TIN, RIW, WM, Washington County, Oregon described as follows: Beginning at an iron pipe found at the southwest corner of that tract described in Book 261, Page 35, Deed Records of said county; thence east along the south line of aforesaid 79 feet; thence south parallel to and 79 feet east of the west line of that tract described in Book 959, Page 901 of said Deed Records, 566.15 feet, more or less, to the center line of Leahy Road; thence west in the center of said road 115.02 feet to the southwest corner of this tract described; thence north parallel to and 36 feet west of the west line of aforesaid tract described in Book 959, Page 901 564.67 feet, more or less; thence east 36 feet to the point of beginning.



WFG National Title Insurance Company

a Williston Financial Group company

2430 NE John Olsen Avenue, Suite 125
Beaverton, OR 97006
Phone (503) 533-9510 Fax (503) 533-0908

WFG National Title Insurance Company
Krista Thorne
2430 NE John Olsen Avenue, Suite 125
Beaverton, OR 97006

Date Prepared: May 11, 2021

FIRST SUPPLEMENTAL PRELIMINARY TITLE REPORT

Order Number: **20-127606**
Escrow Officer: Krista Thorne
Phone: (503) 533-9510
Fax: (503) 214-8725
Email: TeamKrista@wfgnationaltitle.com

Seller(s): Roy M. Hayes Living Trust
Buyer(s): Westwood Homes, LLC, an Oregon limited liability company

Property: 10345 NW Leahy Road, Portland, OR 97229

The following items have been amended:
Updated date

WFG National Title Insurance Company, is prepared to issue a title insurance policy, as of the effective date and in the form and amount shown on Schedule A, subject to the conditions, stipulations and exclusions from coverage appearing in the policy form and subject to the exceptions shown on Schedule B. This Report (and any Amendments) is preliminary to and issued solely for the purpose of facilitating the issuance of a policy of title insurance at the time the real estate transaction in question is closed and no liability is assumed in the Report. The Report shall become null and void unless a policy is issued and the full premium paid.

This report is for the exclusive use of the person to whom it is addressed. Title insurance is conditioned on recordation of satisfactory instruments that establish the interests of the parties to be insured; until such recordation, the Company may cancel or revise this report for any reason.

SCHEDULE A

1. The effective date of this preliminary title report is **8:00 A.M. on 6th day of May, 2020**
2. The policies and endorsements to be insured and the related charges are:

<u>Policy/Endorsement Description</u>	<u>Liability</u>	<u>Charge</u>
ALTA 2006 Owners Policy	\$779,000.00	\$1,769.00
Basic Owner's Rate		\$1,769.00

Proposed Insured: Westwood Homes, LLC, an Oregon limited liability company

<u>Policy/Endorsement Description</u>	<u>Liability</u>	<u>Charge</u>
ALTA 2006 Ext. Loan Policy	\$783,200.00	\$740.00
Basic Loan Rate		\$640.00
OTIRO 208.1-06 (enviro), 209.10-06 (Restric) and 222-06 (loc)		\$100.00

Proposed Insured: To Follow

Government Service Fee: \$25.00

This is a preliminary billing only, a consolidated statement of charges, credits and advances, if any, in connection with this order will be provided at closing.

3. Title to the land described herein is vested in:

Roy M. Hayes, Trustee, or his successors in trust, under the Roy M. Hayes Living Trust dated August 3, 2010

4. The estate or interest in land is:

Fee Simple

5. The land referred to in this report is described as follows:

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

EXHIBIT "A"
LEGAL DESCRIPTION

Beginning at a point 182.51 feet South of an iron pipe set 311.45 feet West of an iron pipe set South 87° 47' East 662 feet and South 737.71 feet from the quarter corner on the West line of Section 35, Township 1 North, Range 1 West, Willamette Meridian, Washington County, Oregon; thence South 385 feet to a point; thence South 88° 53' East 150.72 feet to a point; thence North 385 feet to a point; thence North 88° 53' West to the point of beginning.

TOGETHER with a permanent easement upon 30 feet of land abutting upon the East side of the hereinabove described tract, which said 30-foot strip is to be used for road purposes, it being understood that the grantees herein take said easement subject to paying one-half of the cost of construction and maintenance of said roadway;

ALSO, beginning at an iron pipe set South 87° 47' East 662 feet and South 737.71 feet from the quarter corner on the West line of Section 35, Township 1 North, Range 1 West, Willamette Meridian, Washington County, Oregon; thence South 573.59 feet to an iron pipe; thence North 88° 53' West 390.63 feet and set an iron pipe; thence North 565.87 feet and set to an iron pipe; thence East 390.45 feet to the point of beginning,

EXCEPTING THEREFROM the following described tract: Beginning at the Southwest corner of a tract described in deed to Klaas Ellerbroek, et ux, recorded in Book 351, Page 539, Deed Records, Washington County, Oregon; thence North along the West line thereof 285 feet; thence North 88° 53' West 130.91 feet to a point; thence South and parallel with the West line of said Ellerbroek tract 285 feet to a point in the center, of Leahy Road; thence South 88° 53' East 130.91 feet to the point of beginning;

ALSO EXCEPTING the West 79 feet therefrom.

SCHEDULE B

GENERAL EXCEPTIONS

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.
5. Any lien, or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

SPECIAL EXCEPTIONS

6. Any adverse claim based upon the assertion that:
 - a) Said land or portion thereof is now or at any time has been below the high water mark of Unnamed creek.
 - b) Said land has been removed from or brought within the boundaries of the premises by the process of erosion or an avulsive movement of Unnamed creek or has been formed by a process of accretion or reliction or has been created by artificial fill.
 - c) Rights of the public and governmental bodies in and to any portion of the premises herein described lying below the high water mark of Unnamed creek, including any ownership rights which may be claimed by the State of Oregon below the high water mark.
7. Rights of the public in and to any portion of the herein described premises lying within the boundaries of streets, roads or highways.
8. Easement, including the terms and provisions thereof:

For	:	Sewer
Granted to	:	Unified Sewerage Agency
Recorded	:	March 30, 1982
Recording No(s)	:	<u>82-007852</u>
Affects	:	a portion of the premises herein
9. Prior to the issuance of the insurance on any encumbrance or conveyance executed by the Trustee of the Hayes Living Trust referred to herein, a Certification of Trust must be completed and executed by the Trustees. For title insurance purposes, we will require a Certification of Trust to be completed at the time of closing for any documents which require the Trustee(s)' signature(s).
10. Any unrecorded leases or rights of tenants in possession.
11. Parties in possession, or claiming to be in possession, other than the vestees shown herein. For the purposes of ALTA Extended coverage, we will require an Affidavit of Possession be completed and returned to us. Exception may be taken to such matters as may be shown thereby.
12. Statutory liens for labor or materials, including liens for contributions due to the State of Oregon for unemployment compensation and for workmen's compensation, which have now gained or hereafter may gain priority over the lien of the insured mortgage where no notice of such liens appear of record.

END OF EXCEPTIONS

NOTE: Taxes paid in full for 2019-2020

Levied Amount : \$4,461.53
Property ID No. : R647250
Levy Code : 051.50
MapTax Lot No.: 1N135CB-02300

NOTE: In no event shall WFG National Title Insurance Company have any liability for the tax assessor's imposition of any additional assessments for omitted taxes unless such taxes have been added to the tax roll and constitute liens on the property as of the date of closing. Otherwise, such omitted taxes shall be the sole, joint and several responsibility of seller(s) and buyer(s), as they may determine between themselves.

NOTE: Please be advised that we have searched the records and do not find any open Deeds of Trust. If you should have knowledge of an outstanding obligation, please contact the Title Department for further review.

NOTE: The following is incorporated herein for information purposes only and is not part of the exception from coverage (Schedule B-II of the prelim and Schedule B of the policy): The following instrument(s), affecting said property, is (are) the last instrument(s) conveying subject property filed for record within 24 months of the effective date of this preliminary title report:

None of Record

NOTE: We find NO judgments or Federal Tax Liens against the name(s) of Westwood Homes, LLC, an Oregon limited liability company.

NOTE: Link for additional supporting documents:

Vesting Deed

NOTE: Due to current conflicts or potential conflicts between state and federal law, which conflicts may extend to local law, regarding marijuana, if the transaction to be insured involves property which is currently used or is to be used in connection with a marijuana enterprise, including but not limited to the cultivation, storage, distribution, transport, manufacture, or sale of marijuana and/or products containing marijuana, the Company declines to close or insure the transaction, and this Preliminary Title Report shall automatically be considered null and void and of no force and effect.

NOTE: The following applicable recording fees will be charged by the county:

Multnomah County-First Page	\$82.00
Washington County-First Page	\$81.00
Clackamas County-First Page	\$93.00
Each Additional Page	\$ 5.00
Non-standard Document Fee	\$20.00
E-recording Fee	\$ 3.00

Washington County Ordinance No. 193, recorded May 13, 1977 in Washington County, Oregon imposes a tax of \$1.00 per \$1,000.00 or fraction thereof on the transfer of real property located within Washington County.

NOTE: IMPORTANT INFORMATION REGARDING PROPERTY TAX PAYMENTS

Fiscal Year:	July 1 st through June 30 th
Taxes become a lien on real property, but are not yet payable.	July 1 st
Taxes become certified and payable (approximately on this date)	October 15 th
First one third payment of taxes are due	November 15 th
Second one third payment of taxes are due	February 15 th
Final payment of taxes are due	May 15 th

Discounts: If two thirds are paid by November 15th, a 2% discount will apply.

If the full amount of the taxes are paid by November 15th, a 3% discount will apply.

Interest: Interest accrues as of the 15th of each month based on any amount that is unpaid by the due date. No interest is charged if the minimum amount is paid according to the above mentioned payment schedule.

NOTE: THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THESE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, CONTACT THE ESCROW AGENT.

End of Report

Your Escrow Officer

Krista Thorne
WFG National Title Insurance Company
2430 NE John Olsen Avenue, Suite 125
Beaverton, OR 97006
Phone: (503) 533-9510
Fax: (503) 214-8725
Email: TeamKrista@wfgnationaltitle.com

Your Title Officer

Michelle Laine Johnson
WFG National Title Insurance Company
12909 SW 68th Parkway, Suite 350
Portland, OR 97223
Phone: (503) 431-8502
Fax:
Email: mjohnson@wfgnationaltitle.com



WFG National Title Insurance Company is prepared to issue, as of the date specified in the attached Preliminary Title Report (the Report), a policy or policies of title insurance as listed in the Report and describing the land and the estate or interest set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as a General or Specific Exception or not excluded from coverage pursuant to the printed Exclusions and Conditions of the policy form(s).

The printed General Exceptions and Exclusions from the coverage of the policy or policies are listed in Exhibit One to the Report. In addition, the forms of the policy or policies to be issued may contain certain contract clauses, including an arbitration clause, which could affect the party's rights. Copies of the policy forms should be read. They are available from the office which issued the Report.

The Report (and any amendments) is preliminary to and issued solely for the purpose of facilitating the issuance of a policy of title insurance at the time the real estate transaction in question is closed and no liability is assumed in the Report.

The policy(s) of title insurance to be issued will be policy(s) of WFG National Title Insurance Company.

Please read the Specific Exceptions shown in the Report and the General Exceptions and Exclusions listed in Exhibit One carefully. The list of Specific and General Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy to be issued and should be read and carefully considered.

It is important to note that the Report is not an abstract of title, a written representation as to the complete condition of the title of the property in question, and may not list all liens, defects and encumbrances affecting title to the land.

The Report is for the exclusive use of the parties to this transaction, and the Company does not have any liability to any third parties or any liability under the terms of the policy(s) to be issued until the full premium is paid. Until all necessary documents are recorded in the public record, the Company reserves the right to amend the Report.

Countersigned

A handwritten signature in black ink that reads "C. Sucker".

Exhibit One
2006 American Land Title Association Loan Policy 6-17-06
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any Improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
 - (a) a fraudulent conveyance or fraudulent transfer, or
 - (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

THE ABOVE POLICY FORM MAY BE ISSUED TO AFFORD EITHER Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.
5. Any lien, or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY 6-17-06
EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
 - (i) the occupancy, use, or enjoyment of the Land;
 - (ii) the character, dimensions, or location of any Improvement erected on the Land;
 - (iii) the subdivision of land; or
 - (iv) environmental protection;or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
(b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
 - (a) created, suffered, assumed, or agreed to by the Insured Claimant;
 - (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
 - (c) resulting in no loss or damage to the Insured Claimant;
 - (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
 - (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
 - (a) a fraudulent conveyance or fraudulent transfer; or
 - (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, not shown by the public records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the subject land onto adjoining land or of existing improvements located on adjoining land onto the subject land), encumbrance, violation, variation, or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject land.

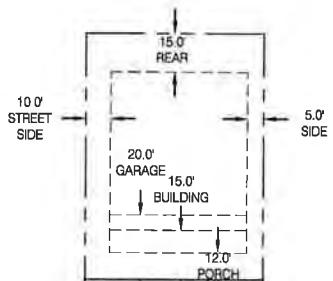
Any lien, or right to a lien, for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

ESTATES AT LEAHY PARK

A 15 LOT SUBDIVISION ON TAX LOT 400, 2300 & 2400 TAX MAP 1N1 35CB
10345 & 10405 NW LEAHY ROAD, PORTLAND, OREGON

SETBACK REQUIREMENTS

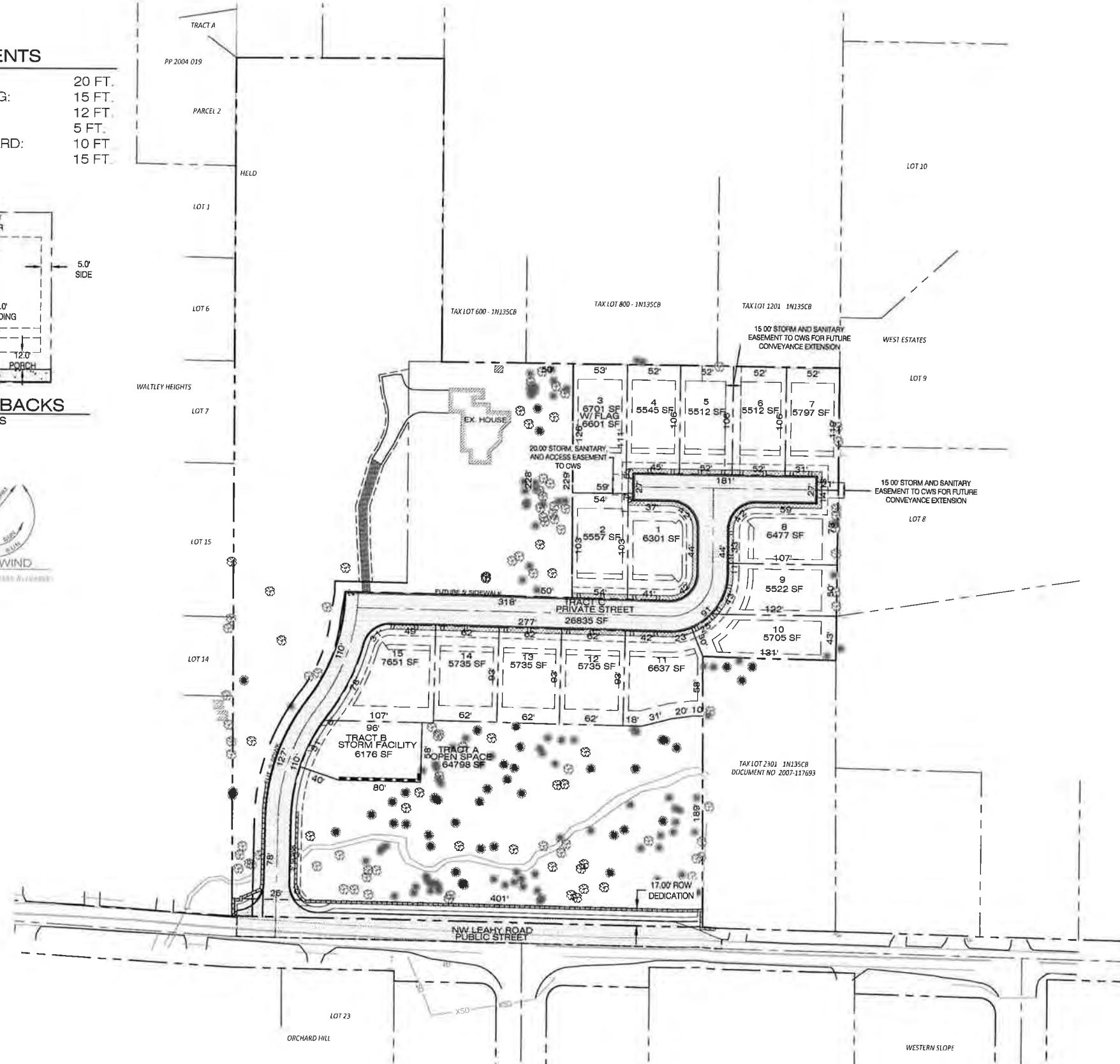
GARAGE 20 FT.
FRONT BUILDING: 15 FT.
PORCH 12 FT.
SIDE YARD: 5 FT.
STREET SIDE YARD: 10 FT.
REAR YARD 15 FT.



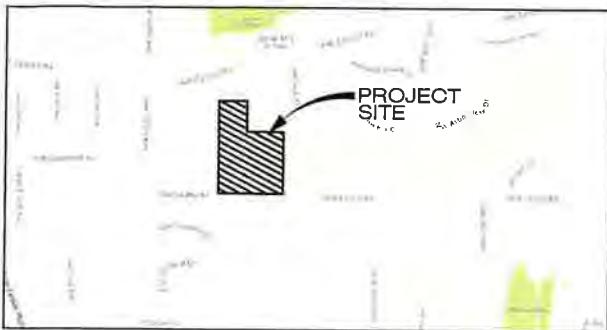
R-5 SETBACKS
NTS



SUN & WIND
South American Avocados



SITE MAP
SCALE: 1'-0"



VICINITY MAP
NTS

APPLICANT

WESTWOOD HOMES LLC
12700 NW CORNELL ROAD
PORTLAND, OR 97229
PHONE: (503) 330-2215

OWNER

ROY M. HAYES LIVING TRUST (TAX LOT 2300)
10345 NW LEAHY ROAD
PORTLAND, OR 97229
PHONE: (503) 330-2215

GREG AND JANELLE LORTS (TAX LOT 400 & 2400)
10405 NW LEAHY ROAD
PORTLAND, OR 97229
PHONE: (503) 330-2215

PLANNING/ENGINEERING/SURVEYING

PIONEER DESIGN GROUP, INC.
9020 SW WASHINGTON SQ RD, SUITE 170
PORTLAND, OR 97223
PHONE: (503) 643-8286
CONTACT: MATT SPRAGUE

SITE INFORMATION

TAX MAP: 1N135CB
TAX LOT: 400, 2300 & 2400
SITE ADDRESS: 10345 & 10405 NW LEAHY ROAD
PORTLAND, OREGON
SITE SIZE: 8.06 ACRES
ZONING: R-5

VERTICAL DATUM

BENCHMARK: WASHINGTON COUNTY NO. 597.

DESCRIPTION: A 1-1/2" BRASS DISK IN MONUMENT BOX LOCATED AT THE NORTHWEST CORNER OF NW 102ND AVENUE, NW CORNELL RD, AND NW ASH ST

ELEVATION: 476.364' NGVD 29

SHEET INDEX

SHEET NUMBER	SHEET DESCRIPTION
P1.0	PRELIMINARY PLAT
P2.0	EXISTING CONDITIONS & DEMOLITION PLAN
P2.1	PROPERTY LINE ADJUSTMENT #1
P2.2	PROPERTY LINE ADJUSTMENT #2
P3.0	PRELIMINARY GRADING AND EROSION CONTROL PLAN
P3.1	SITE CROSS SECTION 'A-A' PLAN & PROFILE
P4.0	PRELIMINARY STREETS PLAN & TYPICAL SECTIONS
P5.0	PRELIMINARY COMPOSITE UTILITY PLAN
P6.0	CIRCULATION AND AERIAL PLAN
L1-L2	PRELIMINARY LANDSCAPE PLANS

PRELIMINARY PLAT

No.	Date	Designed by	MLS	Date	Drawn by	MLS	Date	Reviewed by	Project No.	REF.	Horiz. Scale:	Vert. Scale:
									285-020		25500 1:10 DRAFTING	25500 1:10 DRAFTING

B:\Projects\285-020-19\Planning\285020_2_0 excn dwg 9/13/2021 8:45:42 AM



LEGEND

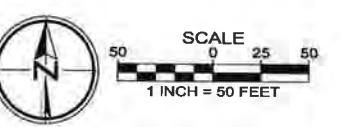
— SD — SD —	RIGHT-OF-WAY LINE
— BOUNDARY LINE	BOUNDARY LINE
— EXISTING LOT LINE	EXISTING LOT LINE
— CENTER LINE	CENTER LINE
— STORM DRAINAGE LINE	STORM DRAINAGE LINE
— SANITARY SEWER LINE	SANITARY SEWER LINE
— WATER LINE	WATER LINE
— GAS LINE	GAS LINE
— XCOM	COMMUNICATION LINE
— UNDERGROUND POWER LINE	UNDERGROUND POWER LINE
— XOH — XOH —	OVERHEAD WIRE
— X — X —	WOOD FENCE (AS NOTED)
— — 202 — —	EXISTING 2' CONTOUR
— — 200 — —	EXISTING 10' CONTOUR
	CONIFEROUS TREE (DBH)
	DECIDUOUS TREE (DBH)
□	CATCH BASIN/DRAIN INLET
■	STORM DITCH INLET
①	STORM MANHOLE
⑤	SANITARY MANHOLE
☒	WATER VALVE
	FIRE HYDRANT ASSEMBLY
	WATER METER
	GAS VALVE
	GAS METER
	STREET SIGN
	MAILBOX
	ELECTRIC PEDESTAL
	LIGHT POLE
	POWER POLE
	COMMUNICATION VAULT
	TELECOMMUNICATION PEDESTAL
	UTILITY EXTENSION
	FOUND SURVEY MONUMENT AS NOTED
	EXISTING CONCRETE
	EXISTING ASPHALT PAVEMENT
	EXISTING GRAVEL SURFACE
	EXISTING BUILDING FOOTPRINT
	EXISTING WOOD DECK
	EXISTING TREE TO BE REMOVED
	EXISTING SLOPE DIRECTION

DEMOLITION NOTES

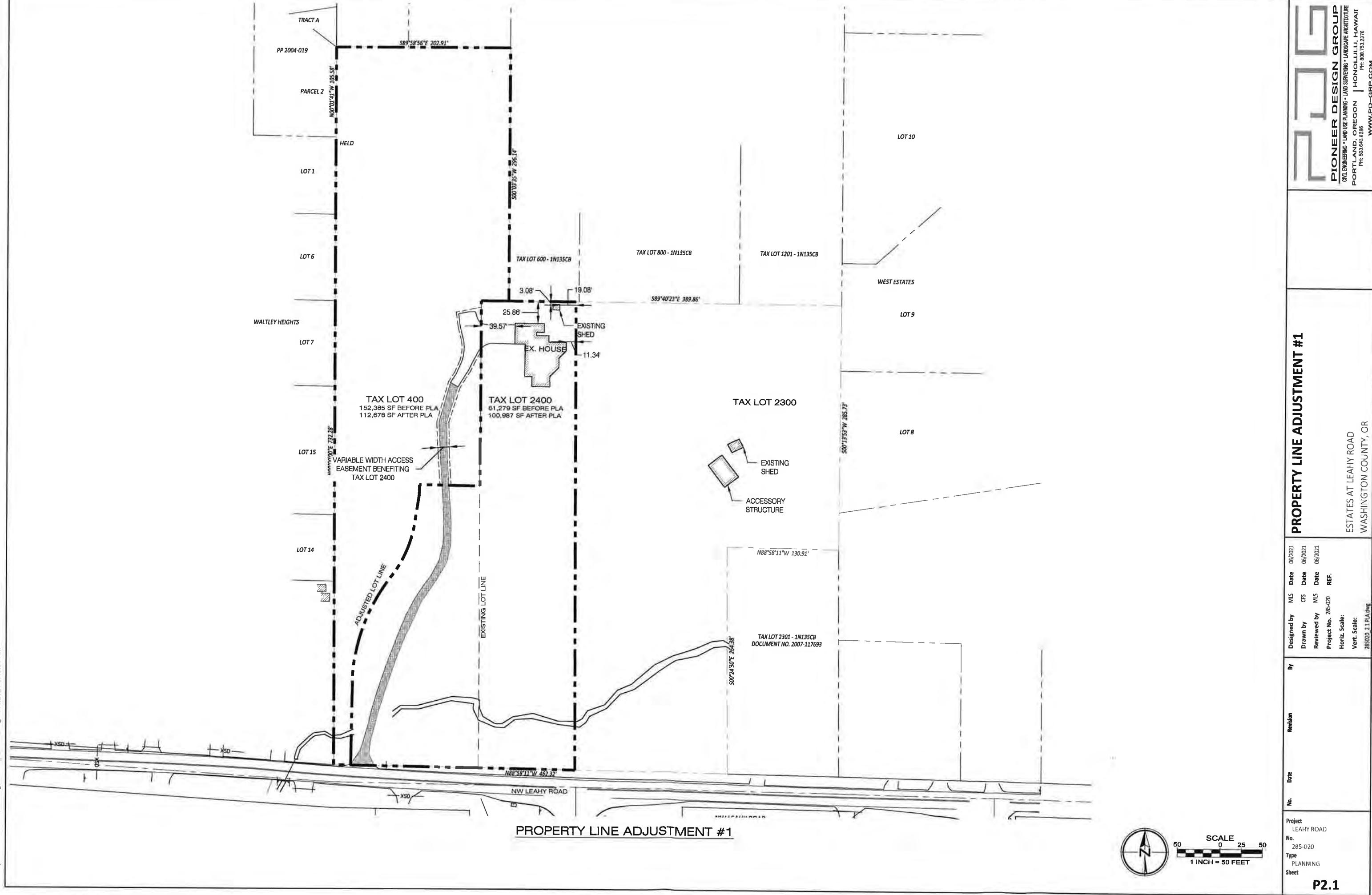
- EXISTING GRAVEL DRIVEWAY TO BE REMOVED
 - EXISTING BUILDING TO BE REMOVED
 - EXISTING FENCE TO BE REMOVED
 - EXISTING OVERHEAD LINE TO BE UNDERGROUNDED
 - EXISTING POLE TO BE RELOCATED
 - EXISTING CLEANOUT TO BE REMOVED
 - EXISTING WATER METER TO BE REMOVED
 - EXISTING MAIL BOX TO BE REMOVED
 - EXISTING BUS STOP TO BE RELOCATED
 - EXISTING OVERHEAD WIRE TO BE REALIGNED
 - EXISTING OVERHEAD WIRE TO BE REMOVED
 - ACCESSORY STRUCTURES TO BE REMOVED

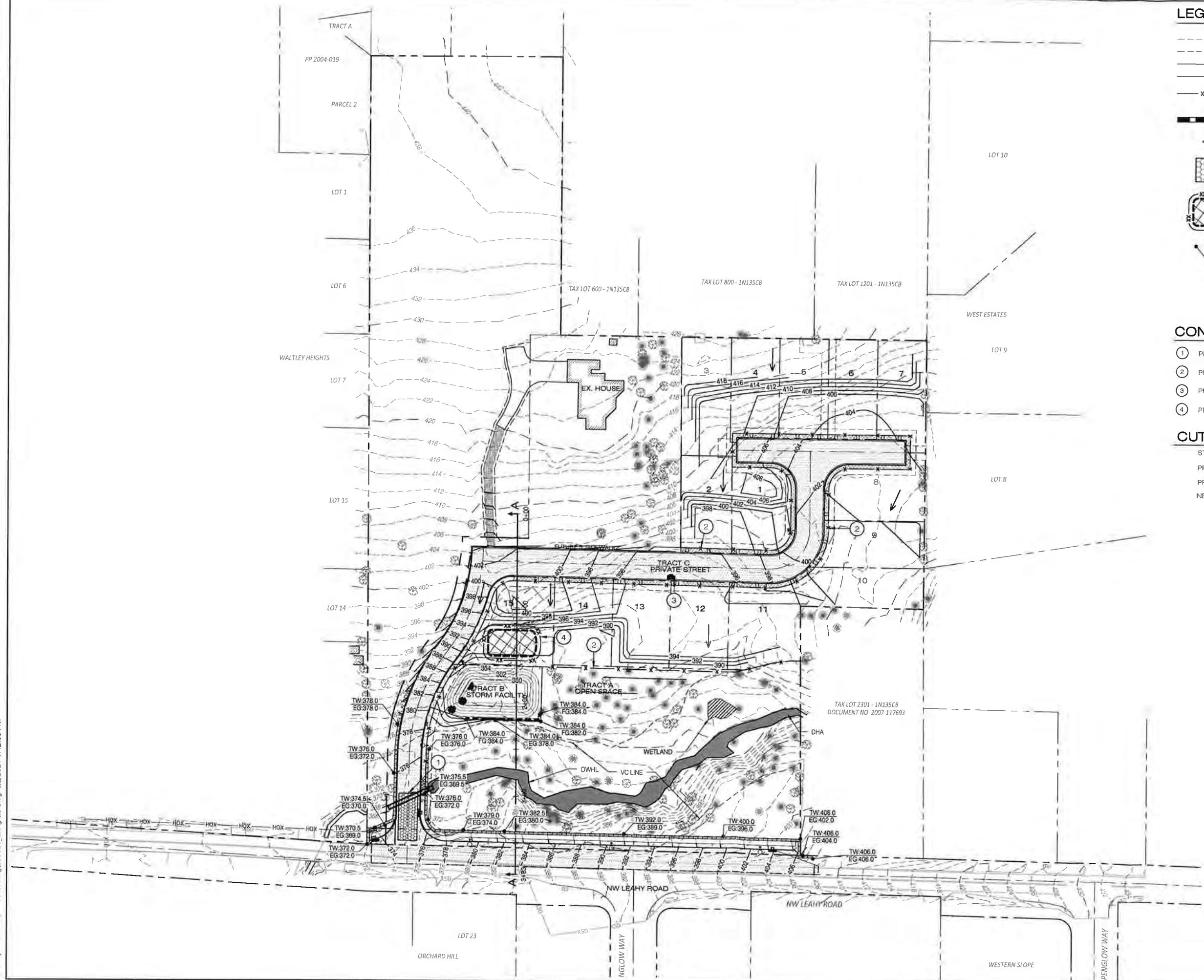
EXISTING CONDITIONS & DEMOLITION PLAN

ESTATES AT LEAHY ROAD
WASHINGTON COUNTY, OR



P2





CONSTRUCTION NOTES

- ① PROPOSED CONSTRUCTION ENTRANCE
- ② PROPOSED PERIMETER SILT FENCE, TYP
- ③ PROPOSED TYPE 4 INLET PROTECTION, TYP
- ④ PROPOSED STOCKPILE LOCATION

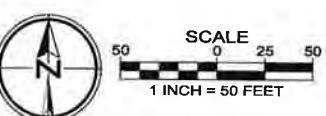
CUT / FILL TOTALS

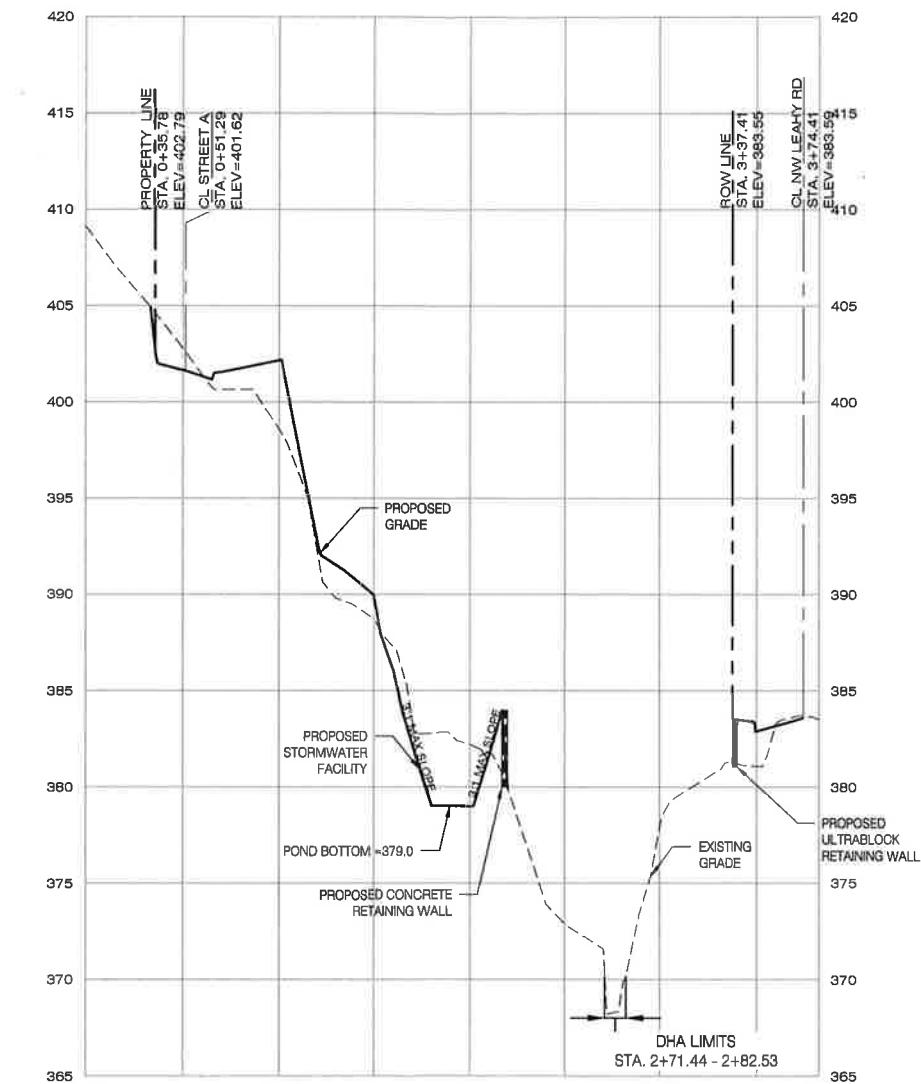
STRIPPING (6') = 8,147 CY
 PROPOSED CUT = 3,777 CY
 PROPOSED FILL = 6,719 CY
 NET CUT / FILL = 2,935 CY FILL

PRELIMINARY GRADING AND EROSION CONTROL PLAN

Project No.: 285-020 REF.
 Date: 06/20/21
 Designed by: [Signature]
 Drawn by: [Signature]
 Reviewed by: [Signature]
 Date: 06/20/21
 Horiz. Scale: 1:1000
 Vert. Scale: 250ft to 0 grad.dwg
 Location: ESTATES AT LEAHY ROAD, WASHINGTON COUNTY, OR

Project: LEAHY ROAD
 No.: 285-020
 Type: PLANNING
 Sheet: P3





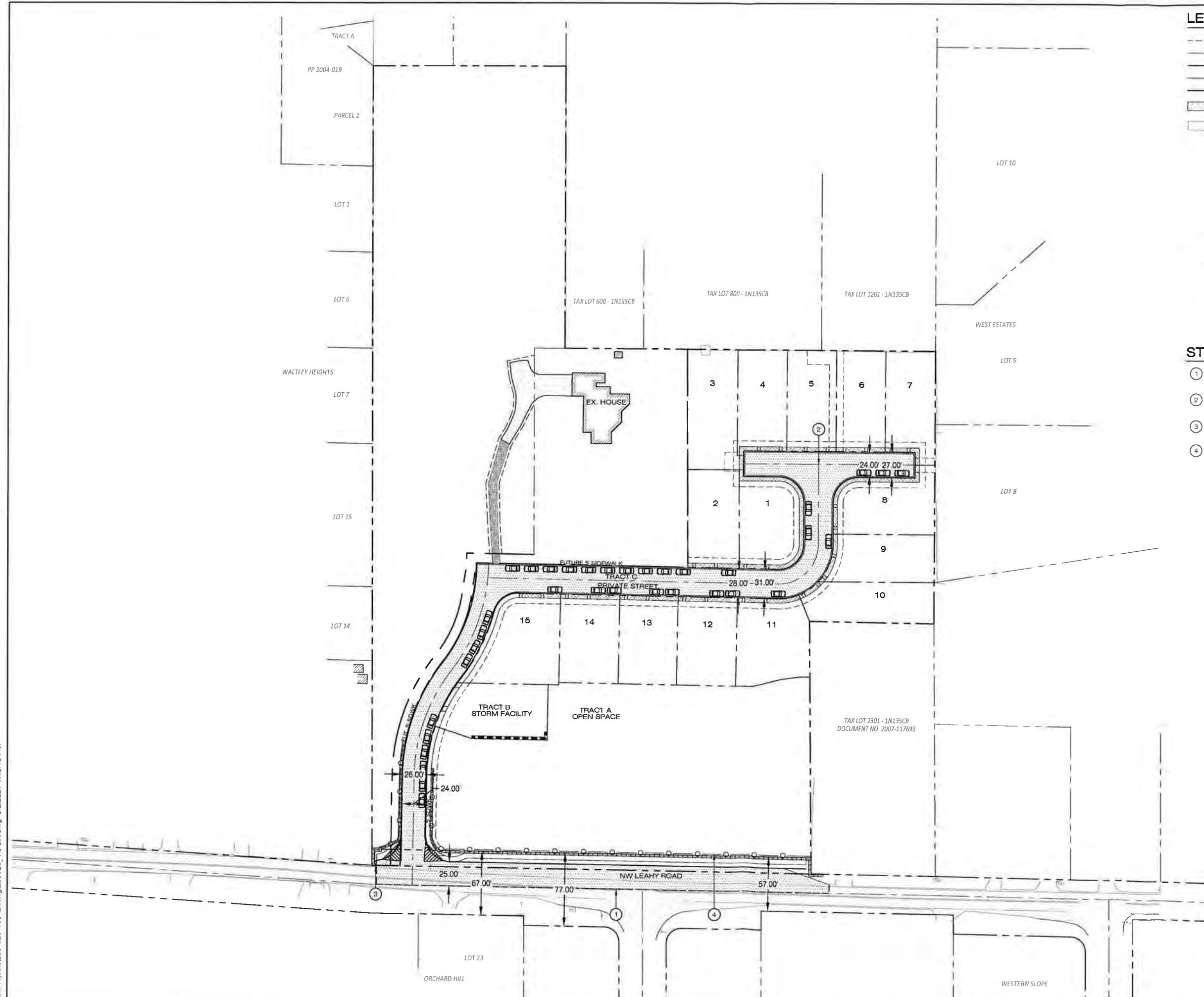
SITE SECTION A-A PROFILE
SCALE: 1"=50' (H), 1"=5' (V)

SITE SECTION A-A PROFILE

Project No.: 285-020
Reviewed by: M.L.S.
Date: 06/20/2021
CFS: 285-020
REF: 285-020
Horiz. Scale: 1"=50'
Vert. Scale: 1"=5'

P3.1

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**LEGEND**

- PROPOSED EASEMENT LINE
- PROPOSED CENTERLINE
- PROPOSED RIGHT-OF-WAY
- PROPOSED LOT LINE
- BOUNDARY LINE
- CONCRETE SIDEWALK TO BE BUILT BY HOMEOWNER
- CONCRETE SIDEWALK TO BE BUILT WITH FACILITY PERMIT
- PROPOSED PAVEMENT
- PROPOSED PARKING STALL
- APPROXIMATE STREET LIGHT LOCATION (FINAL LOCATION WILL BE DESIGNED BY A LIGHTING DESIGNER)
- CORNER VISION TRIANGLE
- PROPOSED STREET TREE

STREET NOTES

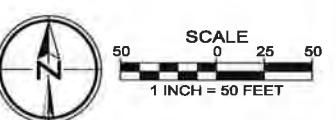
- ① SAWCUT EXISTING PAVEMENT ON SW LEAHY ROAD FROM CENTERLINE TO A HALF-STREET WIDTH OF 25'
- ② EMERGENCY VEHICLE TURNAROUND
- ③ INSTALL MODIFIED STREET BARRICADE
- ④ PROPOSED FENCE FOR FALL PROTECTION (TYP)

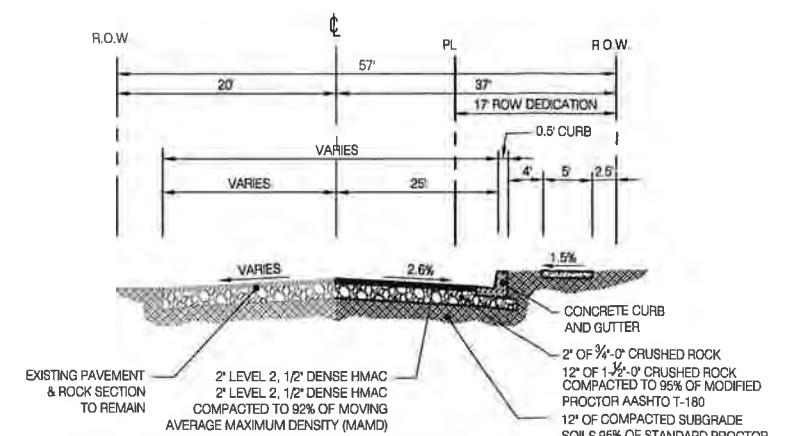
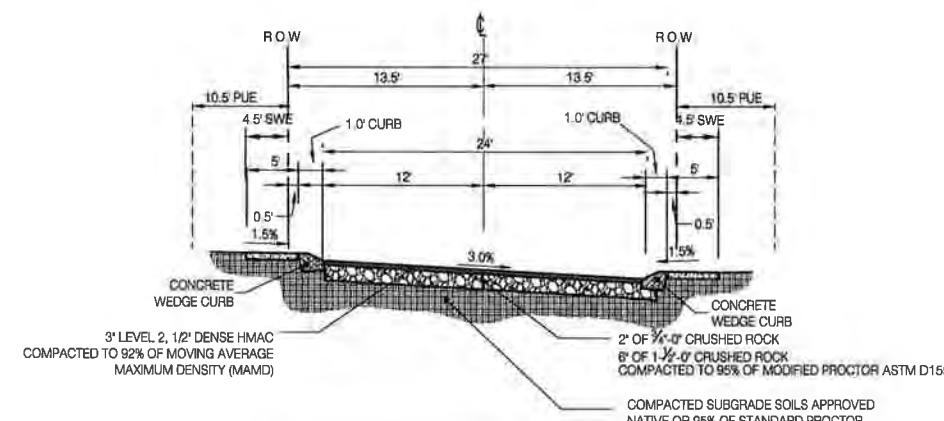
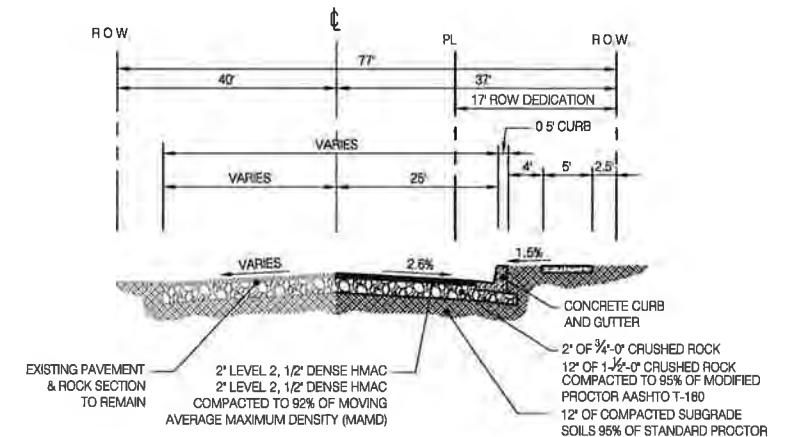
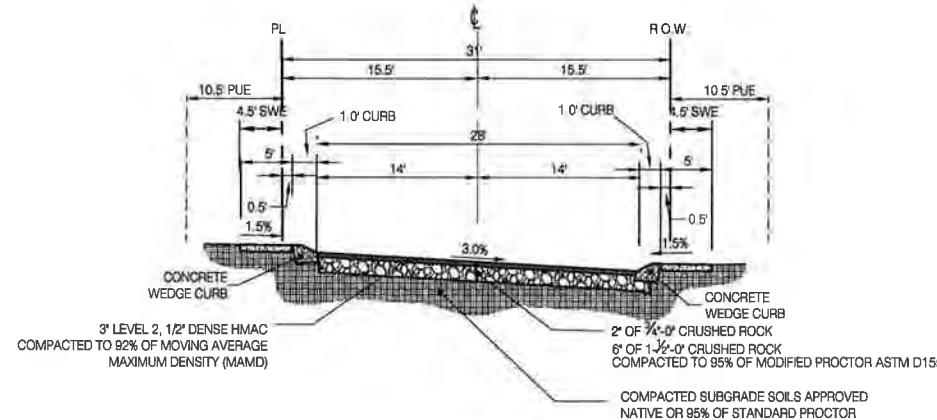
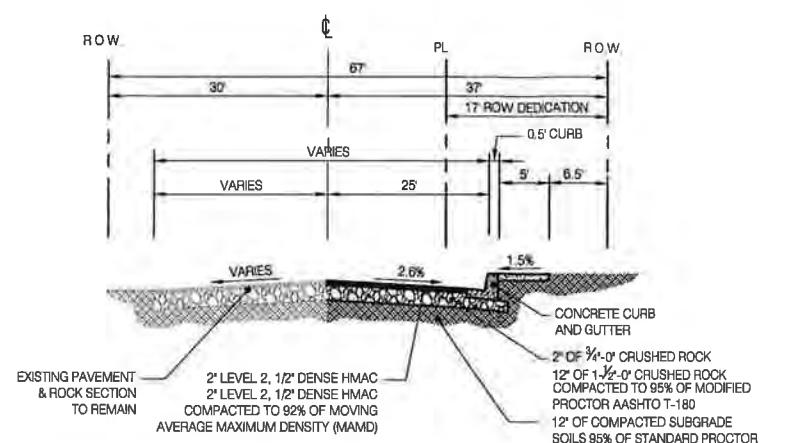
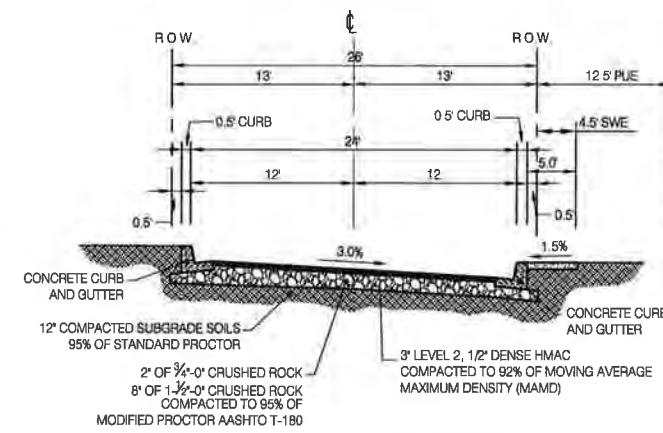
PRELIMINARY STREET PLAN

No.	Date	Revision	By	Designed by	MLS	Date	06/2021	CS	MLS	Date	06/2021	Reviewed by	MLS	Date	06/2021	REF.	

ESTATES AT LEAHY ROAD
WASHINGTON COUNTY, OR

PIONEER DESIGN GROUP
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TYPICAL STREET SECTIONS

PIONEER DESIGN GROUP
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ESTATES AT LEAHY ROAD
WASHINGTON COUNTY, OR

Project No.: 285-020
Reviewed by: M/S Date: 06/2021
Horiz. Scale: 285020_40 stn down
Vert. Scale:
P5



LEGEND

- | | |
|--|--|
| | PROPOSED EASEMENT LINE |
| | PROPOSED CENTERLINE |
| | PROPOSED RIGHT-OF-WAY |
| | PROPOSED LOT LINE |
| | BOUNDARY LINE |
| | PROPOSED CONCRETE SIDEWALK |
| | PROPOSED PAVEMENT |
| | PROPOSED STANDARD CURB |
| | PROPOSED STORM LINE & MANHOLE |
| | PROPOSED SANITARY LINE & MANHOLE |
| | PROPOSED WATER LINE AND VALVE |
| | APPROXIMATE STREET LIGHT LOCATION (FINAL LOCATION WILL BE DESIGNED BY A LIGHTING DESIGNER) |

PIONEER DESIGN GROUP
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PH: 503.843.8286 PH: 808.753.2376
WWW.PD-GRP.COM

WATER NOTES

- 1 CONNECT TO EXISTING WATERLINE TO SERVE THE SITE
 - 2 PROPOSED BLOWOFF VALVE
 - 3 INSTALL FIRE HYDRANT TO SERVE THE SITE

SANITARY NOTES

- 1** CONSTRUCT NEW 48" SANITARY MANHOLE OVER
EXISTING SANITARY MAIN TO SERVE THE SITE

STORM NOTES

- ①** PROPOSED WATER QUALITY AND DETENTION FACILITY TO TREAT AND DETAIN RUNOFF FROM THE SITE.
 - ②** CONSTRUCT 60" PRETREATMENT WATER QUALITY MANHOLE
 - ③** PROPOSED FLOW CONTROL MANHOLE SEE STORM REPORT FOR DETAILS
 - ④** TEE INTO PROPOSED CULVERT
 - ⑤** OUTFALL TO CREEK
 - ⑥** PROPOSED CG-48 MANHOLE
 - ⑦** REMOVE EXISTING CULVERT AND REPLACE WITH 4'x5' BOX CULVERT

EASEMENT NOTES

- ① 6'0" WIDE PUE
 - ② 20.0' STORM WATER, SANITARY, AND ACCESS EASEMENT TO CWS.
 - ③ 15.0' STORM WATER AND SANITARY EASEMENT TO CWS FOR FUTURE CONVEYANCE EXTENSION.
 - ④ VARIABLE WIDTH ACCESS EASEMENT BENEFITING TAY JCT 2400.

FRANCHISE UTILITY NOTES

- 1** RELOCATE EXISTING POLE TO PLANTER STRIP
MINIMUM 2' 0" FROM FACE OF CURB (TYP.)

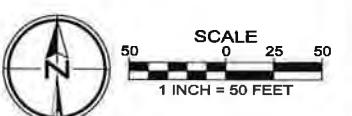
2 PROPOSED OVERHEAD WIRE ALIGNMENT

ABSTRACT NOTES

1. TRACT A WILL BE AN OPEN SPACE TRACT TO PROTECT THE EXISTING VEGETATED CORRIDOR.
TRACT A WILL BE OWNED AND MAINTAINED BY THE HOA AND WILL HAVE A STORM SEWER EASEMENT TO CWS OVER ITS ENTIRETY
 2. TRACT B WILL BE A WATER QUALITY TRACT, OWNED AND MAINTAINED BY THE HOA WITH A STORM EASEMENT TO CWS OVER ITS ENTIRETY
 3. TRACT C WILL BE A PRIVATE STREET TRACT, OWNED AND MAINTAINED BY THE HOA WITH A STORM AND SANITARY EASEMENT TO CWS OVER ITS ENTIRETY.

PRELIMINARY COMPOSITE UTILITY PLAN

No.	Date	Revision	By	Designed by	MLS	Date
				Drawn by	CFS	06/7/2021
				Reviewed by	MLS	06/7/2021
				Project No.	285-020	06/7/2021
						REF.
				Horiz. Scale:		
				Vert. Scale:		
						285D0 3.5 until done





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CIRCULATION PLAN

Project: LEAHY ROAD
No.: 285-020
Type: PLANNING
Sheet:

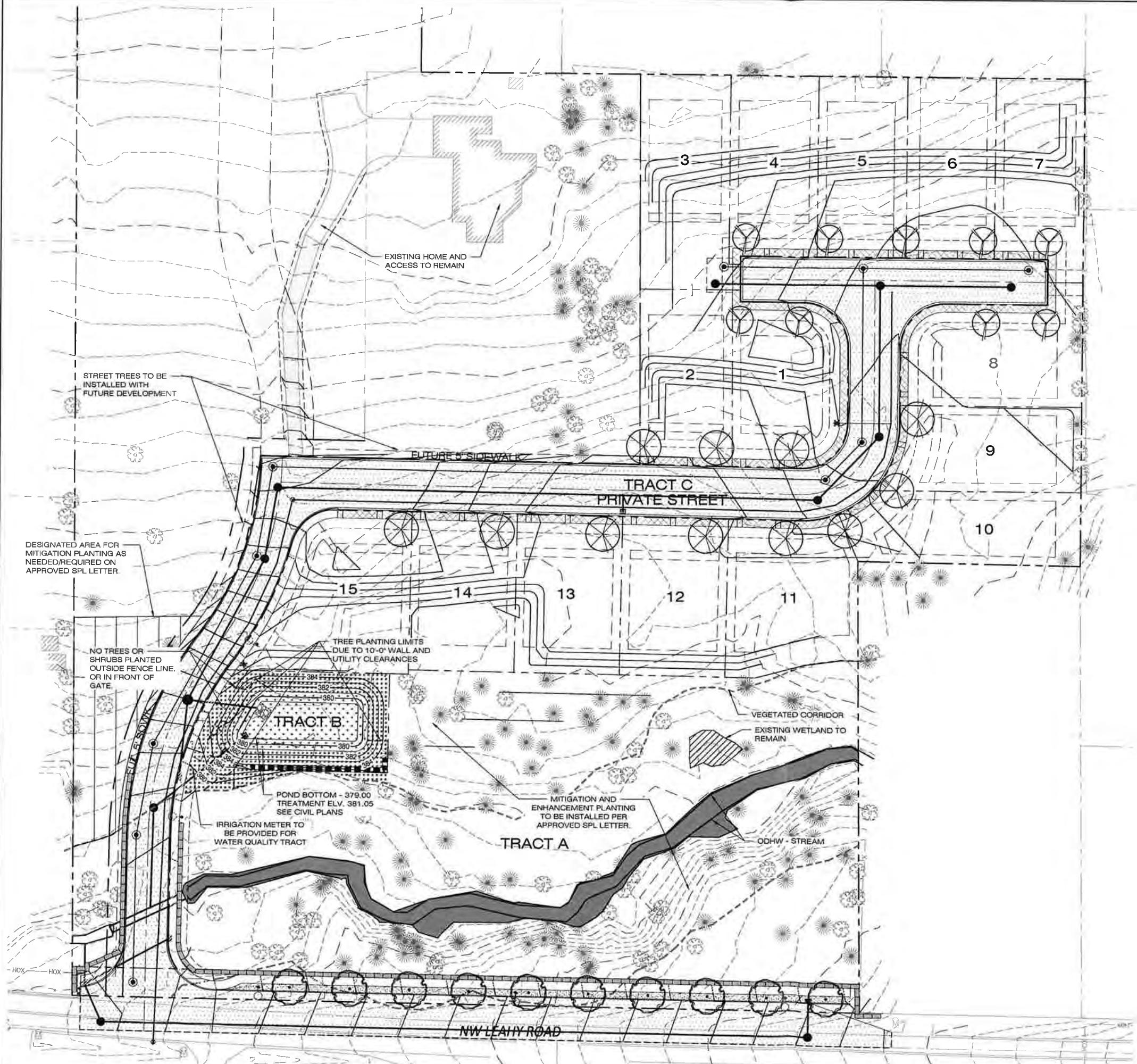
P7

Horiz. Scale:
Vert. Scale:

285120_6.0.dwg

1 INCH = 80 FEET

80 0 40 80

**NOTES:**

- ALL WASHINGTON COUNTY STREET TREES ARE TO BE INSTALLED AS PER WASHINGTON COUNTY STANDARD DRAWING 4010 - SEE SHEET L2.
- SEE SHEET L2 FOR PLANTING LEGENDS, NOTES & DETAILS.
- LANDSCAPE AREAS WILL BE PROVIDED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM DESIGNED BY THE CONTRACTOR. CONTRACTOR TO PROVIDE MATERIALS AND INSTALL ALL IRRIGATION DOWNSTREAM OF THE WATER METER.
- SEE CIVIL PLANS FOR ALL WALLS, FENCES AND UTILITIES.
- CONTOURS SHOWN AT 2' & 10' INTERVALS FOR REFERENCE ONLY. SEE CIVIL PLANS FOR GRADING.

STREET TREE & WATER QUALITY PLANTING PLAN

 ESTATES AT LEAHY ROAD
WASHINGTON COUNTY, OR

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L1

No.	Date	Revision	By	Designed by	MLS	Date	CFS	Drawn by	Reviewed by	MLS	Date	Project No.	REF.	Horiz. Scale:	Vert. Scale:
														285020-19.L1 LANDSCAPE.dwg	285020-19.L1 LANDSCAPE.dwg

STREET TREE - PLANTING LEGEND

STREET TREES

SYMBOL QUANTITY COMMON NAME / BOTANICAL NAME SIZE AND DESCRIPTION

	11	EASTERN REDBUD / CERCIS CANADENSIS: 1 5' CAL , B&B
	9	KOUSA DOGWOOD / CORNUS KOUZA: 1 5' CAL , B&B
	10	FRAXINUS ORNUS / FLOWERING ASH: 1 5' CAL , B&B

LAWN AND GROUNDCOVER

SYMBOL QUANTITY DESCRIPTION

	1,449	SOD S.F.
--	-------	----------

NOTE:

1. LANDSCAPE AREAS WILL BE PROVIDED WITH AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM DESIGNED BY CONTRACTOR. CONTRACTOR WILL PROVIDE MATERIALS AND INSTALL ALL IRRIGATION DOWNSTREAM OF THE WATER METER.

WATER QUALITY FACILITY TRACT 'B' - PLANTING LEGEND

TREES

SYMBOL QTY. COMMON NAME / BOTANICAL NAME SIZE AND DESCRIPTION CONDITION

	XXX	OREGON ASH / FRAXINUS LATIFOLIA: 2 GAL / 3' HT	MOIST
	XXX	BITTER CHERRY / PRUNUS EMARGINATA 'MOLLIS': 2 GAL / 3' HT	MOIST
	XXX	VINE MAPLE / ACER CIRCINATUM: 2 GAL / 3' HT	MOIST

TOTAL 15 1,483 S.F X .05 = 15 REQUIRED TREES

SHRUBS

SYMBOL QTY. COMMON NAME / BOTANICAL NAME SIZE AND DESCRIPTION CONDITION

	25	MOCK ORANGE / PHILADELPHUS LEWISII: 1 GAL / 2' HT / CLUSTER	WET/DRY
	27	RED TWIG DOGWOOD / CORNUS SERICEA: 1 GAL / 2' HT / CLUSTER	WET/DRY
	25	PACIFIC NINEBARK / PHYSOCARPUS CAPITATUS: 1 GAL / 2' HT. / SINGLE	MOIST
	24	OCEANSpray / HOLODISCUS DISCOLOR: 1 GAL / 1 5' HT / SINGLE	DRY
	26	SERVICEBERRY / ALMELANCHIER ALNIFOLIA: 1 GAL / 2' HT / SINGLE	DRY
	25	CLUSTER ROSE / ROSA PISCARPA: 1 GAL / 1.5' HT / CLUSTER	MOIST
	27	SNOWBERRY / SYMPHORICARPUS ALBUS: 1 GAL / 1.5' HT / CLUSTER	DRY
	27	DOUGLAS SPIREA / SPIREA DOUGLASII: 1 GAL / 1.5' HT / CLUSTER	WET

TOTAL 206 4,111 S.F X .05 = 206 REQUIRED SHRUBS

HERBACEOUS PLANTS

SYMBOL QTY. COMMON NAME / BOTANICAL NAME SIZE AND DESCRIPTION

	7,329	SMALL FRUITED BULRUSH / SCIRpus MICROCARPUS: PLUGS 1"X6"
	7,329	ROSSI SEDGE / CAREX ROSSI: PLUGS 1"X6"

TOTAL 14,658 2,443 X 6 (6 PLUGS PER SQ. FT.) = 14,658 REQUIRED EMERGENTS

*ALL HERBACEOUS PLANTS ABOVE ARE TO BE LIVE Viable PLUGS - 1"X6" LONG, NURSERY GROWN

GRASS SEED

SYMBOL QTY. COMMON NAME / BOTANICAL NAME SIZE AND DESCRIPTION

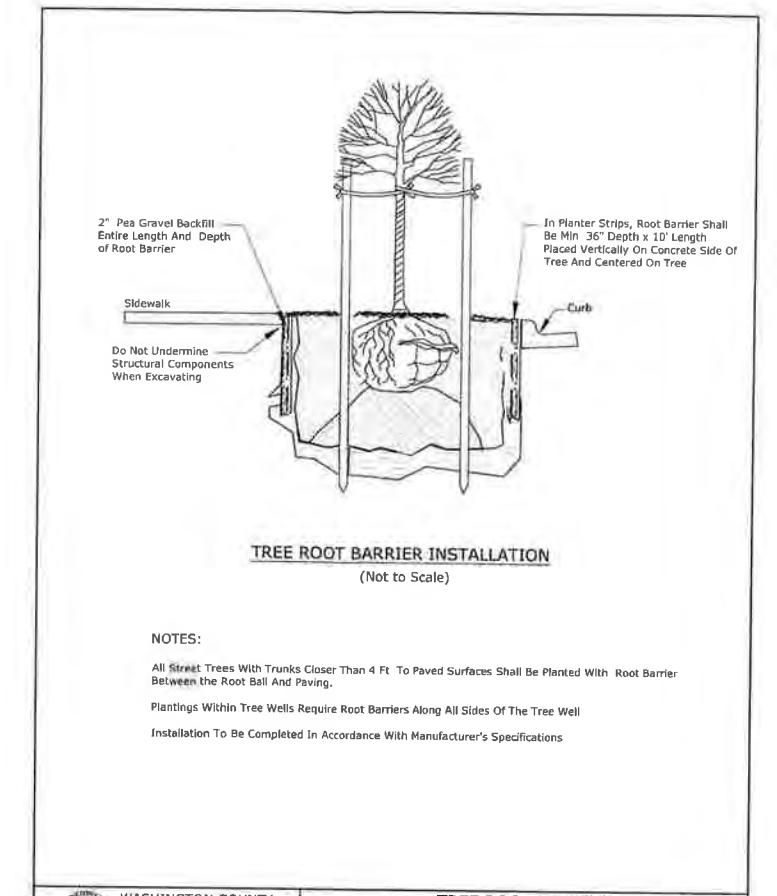
	CLEAN WATER "LOWGROW" SEED MIX: 120 LB PER ACRE
DWARF TALL FESCUE / FESTUCA ARUNDINACEA	40%
PR8820 DWARF PERENNIAL RYEGRASS / LOLIUM PERENNE 'PR8820'	30%
CREEPING RED FESCUE / FESTUCA RUBRA	25%
HIGHLAND COLONIAL BENTGRASS / AGROSTIS TENUIS 'HIGHLAND'	05%

*APPLY WITH $\frac{3}{8}$ " THICK COVER OF GREEN DUED FINE GROUND WOOD CELLULOSE MULCH. PROVIDE 100% EROSION AND WEED FREE COVERAGE RE-SEED AND WEED AS NEEDED.

NOTES:

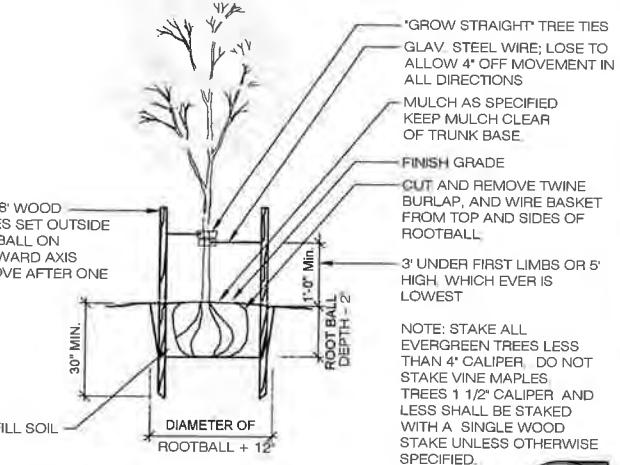
1. WATER QUALITY FACILITY PLANT MATERIAL SHALL BE PROVIDED WITH A TEMPORARY AUTOMATIC IRRIGATION SYSTEM DESIGNED BY CONTRACTOR. CONTRACTOR WILL PROVIDE MATERIALS AND INSTALL ALL IRRIGATION DOWNSTREAM OF THE WATER METER. TEMPORARY IRRIGATION SYSTEM SHALL BE MAINTAINED A MINIMUM OF THREE (3) GROWING SEASONS

2. REQUIREMENTS INDICATED ARE IN ACCORDANCE WITH CLEAN WATER SERVICES (CWS) R&O 19-22; APPENDIX A - PLANTING REQUIREMENTS



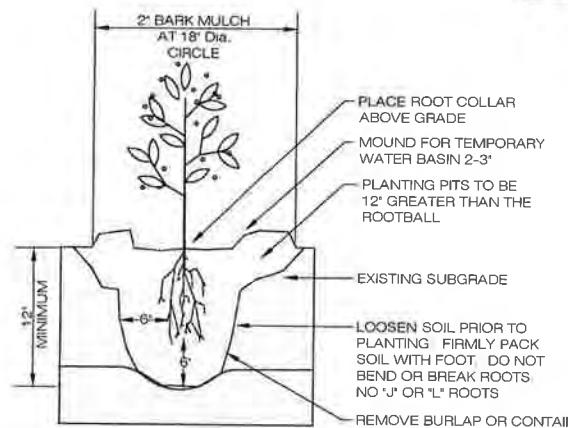
TREE ROOT BARRIER INSTALLATION
(Not to Scale)

WASHINGTON COUNTY DEPARTMENT OF LAND USE & TRANSPORTATION ENGINEERING SECTION	TREE ROOT BARRIER INSTALLATION	
PLOT STAMP: 02/24/11 5:33P KELLY CAD: 4010.DWG	EFFECTIVE DATE: 3/18/2011	WASH. CO. # 4010



TREE STAKING DETAIL

SCALE: N.T.S.



#1 CONTAINER PLANTING DETAIL

SCALE: N.T.S.



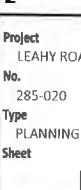
PIONEER DESIGN GROUP
CIVIL ENGINEERING • LANDSCAPE ARCHITECTURE
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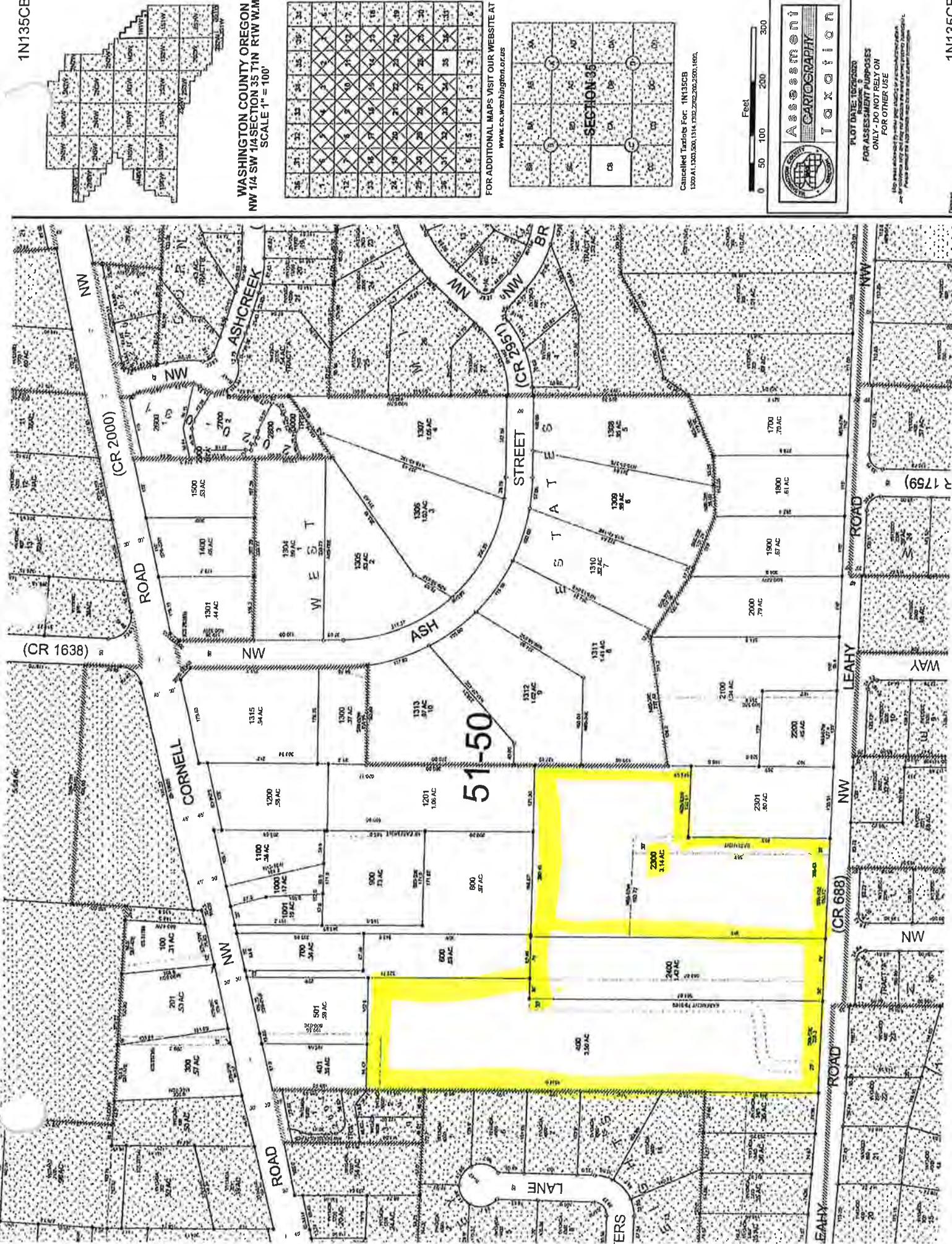
ESTATES AT LEAHY ROAD
WASHINGTON COUNTY, OR



Project No. 285-020
Ref. 285-020-111
Scale: 1" = 100'-0"



Project
No.
Type
Sheet
LEAHY ROAD
285-020
PLANNING
Sheet
L2





WASHINGTON COUNTY
OREGON

Date: 11/18/2021

To: Clean Water Services MS 10

RE: Casefile # L2100311-S/PLA/PLA/DHA

Address or Tax Lot #: 10345 & 10405 NW Leahy Road

Please submit your comments on this application by 12/09/2021.

Contact Eileen Cunningham 503-846-3828 for further information on the application.



WASHINGTON COUNTY
OREGON

Date: 11/18/2021

To: Building Services-Grading MS 12

RE: Casefile # L2100311-S/PLA/PLA/DHA

Address or Tax Lot #: 10345 & 10405 NW Leahy Road

Please submit your comments on this application by 12/09/2021.

Contact Eileen Cunningham 503-846-3828 for further information on the application.



WASHINGTON COUNTY
OREGON

Date: 11/18/2021

To: Fire Marshall

RE: Casefile # L2100311-S/PLA/PLA/DHA

Address or Tax Lot #: 10345 & 10405 NW Leahy Road

Please submit your comments on this application by 12/09/2021.

Contact Eileen Cunningham 503-846-3828 for further information on the application.



WASHINGTON COUNTY
OREGON

Date: 11/18/2021

To: Engineering- Sandy Cuddington MS 17A

RE: Casefile # L2100311-S/PLA/PLA/DHA

Address or Tax Lot #: 10345 & 10405 NW Leahy Road

Please submit your comments on this application by 12/09/2021.

Contact Eileen Cunningham 503-846-3828 for further information on the application.



WASHINGTON COUNTY
OREGON

Date: 11/18/2021

To: CPO 1

RE: Casefile # L2100311-S/PLA/PLA/DHA

Address or Tax Lot #: 10345 & 10405 NW Leahy Road

Please submit your comments on this application by 12/09/2021.

Contact Eileen Cunningham 503-846-3828 for further information on the application.



WASHINGTON COUNTY

OREGON

October 28, 2021

Wayne Hayson
Pioneer Design Group, Inc.
9020 SW Washington Sq Rd, Ste 170
Portland, OR 97223

SUBJECT: NOTICE OF INCOMPLETE APPLICATION, TEMPORARY TRACKING #S2100289

Dear Mr. Hayson:

Staff has received your Type II application for a 15-lot subdivision and a Drainage Hazard Area Alteration of tax lots 1N135CB00400, 1N135CB02300, and 1N135CB02400 located in the R-5 District. Staff has determined that the application resubmittal is incomplete.

Please address the completeness issues discussed below prior to resubmitting this application. Provide the following:

1. **Service Provider Letters (Section 501-8):** Service provider letter forms at <https://www.co.washington.or.us/LUT/Divisions/CurrentPlanning/development-application-forms.cfm>. The following completed service provider letters are required.
 - a. Clean Water Services (Surface Water Management)
 - b. Clean Water Services (Sanitary Sewer)
2. **Neighborhood Meeting**
 - a. Affidavit of Mailing Meeting Notes to CPO
 - b. Meeting notes
 - c. Meeting sign-in sheet

Note that completeness review comments from Building Services regarding grading are still **pending** and are expected to be received next. Once they are received, staff will forward you any completeness items.

Pursuant to ORS 215.427(2) and Washington County CDC Section 203-5.4, the application shall be deemed complete upon receipt of: (a) All of the missing information; (b) Some of the missing information and written notice from the applicant that no other information will be provided; or (c) Written notice from the applicant that none of the missing information will be provided. The application will be void if the application has not been made complete by March 27, 2022 (180 days after being submitted, ORS 215.427(4) and CDC Section 203-5.5).

Staff will retain the fees and forms you have submitted to date and will process them with a subsequent, and complete, application submittal. You may resubmit a modified application and it will be reviewed again for completeness. If it is then determined to be complete, you will be notified and your application will be processed in accordance with Section 203-4 of the Community Development Code. If you do not wish to pursue the application, please provide to this Department a written statement withdrawing the application and requesting for a refund of the fees you have submitted to date.

The application fees required to process the application are as follows:

Land Division (2-10)	\$14,665
Department of Land Use & Transportation	
Planning and Development Services Division	
155 N. First Avenue, Suite 350-13, Hillsboro, OR 97124	
phone: (503) 846-8761 • fax: (503) 846-2908	

WASHCOOR | Civic Platform *** PRODUCTION ***

Eileen Cunningham ()

[Save](#) [Calculate Hours](#) [Cancel](#) [Help](#)

Task Floodplain Review	Action by Department * <input type="button" value="Current Planning"/>	Current Department <input type="button" value="Current Planning"/>	Status * <input type="button" value="Complete"/>	Status Date * <input type="text" value="10/27/2021"/> <input type="button" value=""/>
Due Date 10/19/2021	Assigned to Department Current Planning	Assigned Date 10/26/2021	Assigned to Sean Harrasser	Action By * <input type="button" value="Current User"/> <input type="button" value="Sean Harrasse"/>

Comments Standard Comment

()

DHA submittal is complete
25-year return event expected to be reduced from 2.27 cfs existing to 1.9 cfs after development. Project should be conditioned to provide evidence of this.

[check spelling](#)

S2100289

()

WASHCOOR | Civic Platform *** PRODUCTION ***

Eileen Cunningham ()

[Save](#) [Calculate Hours](#) [Cancel](#) [Help](#)

Task	Action by Department *	Current Department	Status *	Status Date *
Natural Resources Review	Current Planning	Complete	10/27/2021	10/27/2021
Due Date	Assigned to Department	Assigned Date	Assigned to	Action By *
10/19/2021	Current Planning	10/26/2021	Maitreyee Sinha	Current User

Comments [Standard Comment](#)

()

Section 422 looks complete. Unfortunately, the applicant meets the Code criteria and can get away with preserving only 15% of the WH on site. Conditions of approval should include a monitoring report in compliance with Section 422-5.3.C.(6).

[check spelling](#)

S2100289

()

WASHINGTON COUNTY BUILDING SERVICES

Inter-Office Correspondence

Kofi Nelson-Owusu, Building Engineer/Supervisor
503-846-2846

November 3, 2021

To: Eileen Cunningham
RE: 1N13SCB00400, 02300, 02400
CASEFILE: L2100289
LOCATION: 1N13SCB00400, 02300, 02400
COMMENTS:

1. A grading permit is required.
2. The box culvert shown placed within the private road requires a building permit.
3. Site specific geotechnical engineering report with recommendations for the developing of the site is required. The report should be stamped and signed (electronic signature accepted) by an Oregon registered engineer.
4. Separate engineering geologist report required if the site slope is greater than 25% per **WCC 14.12.110(A)**.
5. Provide private road/parking lot structural details on the plans per site specific geotechnical engineering recommendations.
6. Provide drainage analysis report stamped by a civil engineer that shows that the additional impervious areas as a result of this proposed work will not impact the surrounding properties negatively per **WCC 14.12.310**.
 - Note: For subdivision developments (more than 3-lots), **WCC 14.12.310-I** provisions cannot be used to satisfy **WCC 14.12.310-A** provisions.
7. Beside the above items, please comply with all the requirements given on the Building Services Grading Permit application forms.
- 8.

**WASHINGTON COUNTY**

Dept. of Land Use & Transportation
Planning and Development Services
Current Planning
155 N. 1st Avenue, #350-13,
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908

DETERMINATION OF COMPLETENESS
GRADING PLAN REVIEW

Before this application can be accepted, it must be reviewed for the feasibility of its proposed grading component. Please address the Code requirements listed below and return to the appropriate Land Development Services Project Planner by the due date indicated.

PROJECT INFORMATION

Assessor Map No.

IN135CB

Tax Lot No(s).

00400, 02300, 02400*PROJECT TITLE: Estate at Leahy Park

1. Has the grading information provided (narrative and site plan) been prepared with sufficient detail for you to review this project against the criteria listed on the reverse of this form?

yes no remarks: _____

2. Is it likely and feasible for the project to comply with the grading permit criteria?

yes no remarks: _____

3. Does the project information provided show that the proposed grading will not cause or result in erosion, stream sedimentation, or other adverse off-site effects or hazards to life or property? If no, does the project show that there are feasible alternatives for mitigating off-site impacts?

yes no remarks: _____

4. Is there evidence that appropriate siting and design safeguards will be in place to ensure structural stability and proper drainage of foundation and crawl spaces for areas with unstable soil conditions (particularly with regard to water table, shrink-swell, bearing strength, and depth to bedrock)?

yes no remarks: _____

5. At the perimeter of the property, do the proposed contours, elevations and shapes (not including retaining walls):

yes no ... blend with adjacent terrain?

yes no ... achieve a consistent grade and transition to the adjacent properties?

yes no ... exhibit rounded-off tops of cut slopes and bottoms of fills to a minimum radius of five (5) feet to blend with the natural terrain?

If no, is it feasible to meet these requirements? remarks: _____

6. Will the proposed grading preserve the functioning of off-site drainage courses or bodies of water?

yes no remarks: _____

Temporary Tracking Number # S2100289Submittal Date: 9/28/21DUE DATE: ASAPProject Planner: Eileen CunninghamAPPLICANT: Westwood Homes, Inc.APP'S REP: PDGOWNER(S): multiplePROCEDURE TYPE: I II / IIILAND USE DISTRICT(S): R-5



WASHINGTON COUNTY

OREGON

Date: 10/27/2021

To: Building Services-Grading MS 12

RE: Casefile # S2100289

Address or Tax Lot #: 111350B, 00400, 02300, 02400

Please submit your comments on this application by 11/17/2021. ASAP

Contact Eileen Cunningham 503-846-3828 for further information on the application.



WASHINGTON COUNTY
Dept. of Land Use & Transportation
Land Development Services Division
155 N. 1st Avenue, #350-13,
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908
<http://www.co.washington.or.us>

Determination of Completeness URBAN

Submittal #: S 2100289

Procedure Type I O / III Category A / B / C

Community Plan:

CFU CM CPO 1

Land Use District(s):

LS

PROPERTY DESCRIPTION:

Assessor Map No. Tax Lot No(s).

IN 1 35CB 00400
2300
2400

(Admin) Senior Planner:	Name <u>Paul</u>	Date <u>9-29-21</u>
(Senior) Planner Assigned:	<u>FC</u>	<u>10-1-21</u>
(Admin) Accela and Routing:		
(Assigned Planner) Complete for Review:	<u>FC 11/4/21</u>	
(Admin) Complete for Processing: (Required # of copies and fees due start of 120 days)		

Submittal Date: 9-28-21 Trust
Intake: Counter Mail OR Resubmittal
Intake Review By: Louisa
Fee Submitted: \$ 24,561
Subject Tax Map(s): Yes No
(Please Check For Adjacent County Maps & Addresses If Applicable)
Reduced Site Plan for Public Notice? Yes No

Neighborhood Meeting items?

Notice Aff. of Posting
Mail List Notes
Aff. of Mail Sign In
100%

Preapplication Conference Notes:

Copy of notes included OR Preapp Waiver form

Ownership Verified by: Deed(s)

Signature Verified by: Ore. Business Registry

Is Ownership Correct? Yes No

Owner's Original Signature? Yes No

Number of Copies: 3

APPLICANT:

Westwood Homes, LLC
APPLICANT'S REPRESENTATIVE:

Pioneer Design

OWNER: Lots / Roy Hayes Trust

PRIOR CASEFILES:

DATE DUE: 10-19-21

Expiration Date (180 days) 3-27-22

COMPLETENESS REVIEW ROUTING (Senior Planner to select):

Current Planning Review:

always required

yes no

Grading:

to Building Engineer if any site work outside of a structure is proposed

yes no

Floodplain (CFM):

to County CFM if site has FP/DHA

yes no

Traffic Engineering Review:

route to Traffic Engineering (Jinde) if applicant paid for AMP or Traffic Report

yes no

Significant Natural Resources:

route to Natural Resources planner if site has Section 422 areas

yes no

Sight Distance:

route to Transportation Planner for all Type II & III

yes no

PROCEDURE TYPE: I ① / III CATEGORY: A / B / C

LAND USE ACTIONS: S / PLA / PLA / DHA / / /

OF PARCELS/LOTS: 3 PLANNER: Eileen Cunningham

TITLE: Preliminary Review for a 15-lot subdivision, "Estates at Leafy Park", Two Property Line Adjustments, and Bridge Hazard Alteration in the R-S District.

FEES

Land Development Fees

Valuation

Dev. Rev: \$	\$
Land Division (11-50)	\$ 14,665
PLA x 2 (Flag lot)	\$ 5,216
DHA	\$ 3,384
	\$ _____

Surcharges

Flag lot	\$ 500
Natural Resource Analysis - specimen	\$ 551
	\$ _____

Sub Total \$ _____

Engineering Deposit \$ 245

TOTAL \$ 24,561

DISTRIBUTION

of Copies

File	2
CPO	1
Engineering	1
Transportation Planner	_____
O.D.O.T.	_____
Traffic Analyst	_____
Fire Marshal	1
Planning	_____
Flood Plain	5
Grading	1
Hearings Officer	_____
Clean Water Services	1

TOTAL COPIES NEEDED 7

TOTAL COPIES SUBMITTED 3

NOTES: _____

INCOMPLETE 1. INCOMPLETE 2. INCOMPLETE 3. INCOMPLETE 4.

Planner:

EC

Date:

10/28/21

Letter Sent:

10/28/21

Resubmittal:

11-4-21

Date Due:

11-25-21

Louisa Bruce

From: Louisa Bruce
Sent: Thursday, November 18, 2021 12:27 PM
To: Wayne Hayson
Subject: L2100311 Acceptance Letter
Attachments: L2100311 Acceptance Letter.pdf

Wayne,

Attached is the Acceptance Letter for "Estates at Leahy Park" for your records.

Thank you,

Louisa Bruce | Administrative Specialist II
Washington County Department of Land Use & Transportation
Planning and Development Services | Current Planning
155 N First Ave., Suite 350, MS 13 | Hillsboro, OR 97124

503-846-3849 | 503-846-2908 fax

louisa_bruce@co.washington.or.us | www.co.washington.or.us/lut

Due to staffing shortages in Current Planning, responses to emails and phone calls are expected to take longer than anticipated.

PLEASE NOTE: MAJORITY OF STAFF CONTINUES TO WORK REMOTELY AND ARE BEST REACHED BY EMAIL.

Please submit planning-related questions to LUTDEV@co.washington.or.us.

Your patience is appreciated.

Current Planning updates

LUT Services available online



WASHINGTON COUNTY
Dept. of Land Use & Transportation
Planning and Development Services
Current Planning Section
155 N. 1st Avenue, #350-13
Hillsboro, OR 97124
Ph. (503) 846-8761 Fax (503) 846-2908

NOTICE OF APPLICATION ACCEPTANCE

TYPE II AND III LAND USE APPLICATIONS

URBAN Date Accepted for Processing Purposes: 11/04/2021

Casefile No.: **L2100311-S/PLA/PLA/DHA**

APPLICANT:

Westwood Homes, LLC
Bill Wagoner
12700 NW Cornell Road
Portland OR 97229

APPLICANT'S REPRESENTATIVE:

Pioneer Design Group
Wayne Hayson
9020 SW Washington Sq Rd Ste 170
Portland OR 97223

TYPE II APPLICATION
 TYPE III APPLICATION, HEARING DATE: (TENTATIVE)

PROPOSED DEVELOPMENT ACTION: Preliminary Review for a 15-lot subdivision "Estates at Leahy Park" two Property Line Adjustments, and a Drainage Hazard Alteration in the R-5 District.

This notice is to inform you that your application has been reviewed and determined to be complete. We will now begin the process of reviewing your application for conformance with the appropriate development standards. The expected review period for your request is 120 days. If adverse public comments are submitted or if unforeseen problems are found during our review, additional time may be required to adequately address these issues.

The project planner assigned this Casefile is Eileen Cunningham, Associate Planner. For additional information, please contact him/her at (503) 846-8761.

You can check the status of your Casefile on the Washington County web page at the following link:
<http://www.co.washington.or.us/LUT/Divisions/CurrentPlanning/Projects/projectsunderreview.cfm>

NOV 04 2021

APPLICANT NOTE:

PLANNING & DEVELOPMENT
LAND USE & TRANSPORTATIONUpon completion, submit this form with your Current Planning development application
Attachment E

NEIGHBORHOOD MEETING

AFFIDAVIT OF MAILING MEETING NOTES
TO THE COMMUNITY PARTICIPATION ORGANIZATION (CPO)

STATE OF OREGON)
)
) ss
County of Washington)

I, Ben Altman, Pioneer Design Group, being duly sworn, depose and say that on the 11th day of August, 2021 I caused to have mailed to CPO 1 the meeting notes for the neighborhood meeting held on the 9th day of August, 2021 to discuss a proposed development at 10345 & 10405 NW Leahy Road, a copy of the meeting notes so mailed is attached hereto and made a part hereof.

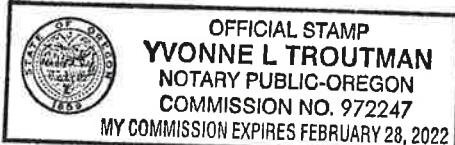
I further state that said meeting notes were enclosed in envelopes plainly addressed to CPO 1 and were deposited on the date indicated above in the United States Post Office with postage prepaid thereon.

Ben Altman
Signature

Subscribed and sworn to, or affirmed, before me this 9th day of August, 2021.

Yvonne L Troutman
Notary Public for the State of Oregon
County of Washington

My Commission expires: February 28, 2022



Virtual - Neighborhood Meeting Notes
Estates at Leahy Park
10345 & 10405 NW Leahy Road

August 9, 2021
6:00 PM

Wayne Hayson, Pioneer Design Group went live on screen at 5:50 PM with Introductory Screen Slide, which provides contact information and also how to register for the record as a participant.

Wayne opened the meeting at 6:03 PM thanking everyone for participating, and introducing himself; Ben Altman also PDG, who is taking notes.

While not required by the County, Wayne noted that the primary reason for the second meeting was to allow live screen time for Virginia Bruce, CPO 1 Representative. He noted Virginia had not been able to access the live meeting held in July, so we scheduled another meeting. Unfortunately, Virginia still seems to be having technical difficulty in accessing the session live.

You can contact Virginia at cpo1leaders@gmail.com. In addition to providing Virginia's email address, during the meeting Wayne also provided the link to the County CPO 1 page, the County CPO 1 page, CPO 1 Facebook page, and described the role of the CPO in the Washington County planning process.

Note: All Screen Slides shown during the meeting are attached to these notes. Wayne noted that all questions received prior to, during, or immediately following the meeting will be addressed as best we can, within 7 days. The questions and response will be posted on the project web site, at <https://bit.ly/285020materials>.

Wayne noted that there were no questions submitted prior to the meeting time.

Wayne provided a summary of the agenda for the meeting:

- He will provide an overview of the County's Land Use Review (Type II) process.
- He will provide an overview of the proposed development.
- Then there will be time for questions and answers.

Referring to a Slide of the County Land Use Process, Wayne summarized how this application will be reviewed. This will be a Type II Review, with no public hearing but with public notice and opportunity to comment. Notice will be provided to all property owners within 500 feet of the project site, essentially the same as those who received notice for this neighborhood meeting. Wayne further detailed the land use process as shown on the slide.

Referring to an aerial photo, Wayne provided an orientation of the location of the site and surrounding neighborhood. Then, referring to a zoning map, he showed that the property and that all surrounding properties are zoned R-5. The R-5 district is the County's lowest density urban residential zone.

The minimum lot size for the R-5 zone is 5,500 square feet, with the average allowed at 6,000 square feet.

Wayne noted there had been questions and concerns about increased traffic. He noted that the County has scheduled improvements for Cornell Road including the intersection at Cornell and 107th, which include a traffic signal. Further, this development, as all in the County, pay into the Transportation Development Tax (TDT) fund (about \$10K for unit). These funds are then used for improvements to the arterial and collector streets. Cornell is an arterial, while Leahy is a collector, so they are both eligible for TDT funding. In addition, this project will provide additional right-of-way dedication and 1/2 Street (centerline north) improvements along the property frontage on Leahy Road.

The total site contains 8.06 acres, with three existing Tax Lots 400, 2300 & 2400, with an existing house on TL 2400.

The application will include two concurrent Property Line Adjustments (PLA) in order to create a new large lot (TL 2300) surrounding the existing home at 10405 NW Leahy Road.

The first PLA will adjust the line between Tax Lots 400 and 2400, reducing 400, with a flag access on Leahy Road, and increasing 2400, with the existing home.

The second PLA will adjust the line between Tax Lots 2300 and 2400, decreasing TL 2400 with a flag access on Leahy and increasing TL 2300. The house on TL 2400 will remain.

The subdivision (15 Lots) will be on the adjusted TL 2300, which with the adjustment will contain 4.49 acres, and the other two adjusted parcels are not part of this subdivision request.

The proposed subdivision will create 15 lots. As shown on the Site Plan, there is a Significant Natural Resource Area (SNR) along the southern portion of the property (Tract A), which contains 1.46 acres. Tract A include the Clean Water Services (CWS) vegetated corridor and stream, and will be enhanced per CWS standards from poor to good condition. It is noted that we are allowed to deduct the Tract A area from the total site area for density calculation.

For calculating the density, the SNR area are deducted, leaving a net developable area of 3.03 acres. The calculated allowed density is a minimum of 12 units. The maximum density is based on the total site area at 5 units per acre, or in this case 22 units.

The R-5 zone has a minimum lot size of 5,500 square feet, with an average lot size of 6,000 square feet.

Referring to the Site Plan, Wayne noted that the smallest lots will be 5,512 square feet, with the largest new lot at 7,651 square feet.

The access to the site will be located at the southwest corner of the property at Leahy Road. He noted that the County has requested that the access road be a private street, rather than being public. The private street standards allow for a reduced street width, which at the entry will minimize impacts on the stream crossing and resource area.

The initial paved access will be 24 feet in width (minimize resource impacts), but will be widened to 28 feet once past the resource area. The narrower portion will have a sidewalk and parking on just one side, again, to minimize resource impacts. The wider section will have sidewalks and parking on both sides. The narrower section will allow for parking on one side, while the wider section will allow for parking on both sides. A pedestrian link will also be provided at the eastern boundary to allow for pedestrian circulation to adjacent properties, as they may be developed.

The site fronts on NW Leahy Road, which is a designated Collector Street. To clarify, per questions submitted, the County has a hierarchy of street classifications. In general, the highest classification is freeways, then Arterials, then collectors, then neighborhood routes and local streets. Collectors, like Leahy, generally extend between arterials, like Cornell and Barnes Roads.

The project will provide for widening of Leahy Road along the site frontage. The existing right-of-way is 25 feet from centerline. An additional 12 feet will be dedicated to provide a 37-foot centerline section. The project will provide a standard half-street improvement along the site frontage, including widened pavement, curb and gutter, planter strip and sidewalk.

In response to traffic impact questions, Wayne noted that this development is not required to submit a Traffic Impact Statement. However, the County Traffic Engineer will review the project and make recommendations in the form of Conditions of Approval, if any safety concerns are identified.

Wayne then, again referring to the Site Plan reviewed the R-5 setbacks:

- Front 15 feet, Porch 12 feet
- Garage 20 feet
- Rear 15 feet
- Side 5 feet, Street Side 10 feet

Wayne noted he would now move to the Question and Answer segment. He again noted his email and referred back to the Introductory Slide, with the Web Link for the meeting information, slides, etc.

Questions and Answers

1. Will there be sidewalks along Leahy Road?

Response: Yes, along the site frontage. Within the development, there will be a sidewalk along one side of the private road at the entry, then both side where the road widens past the Tract A Resource Area.

2. Will there be other developers involved?

Response: No, just Westwood Homes. As some may know, they are a local developer with their office on Cornell Road.

3. Wayne noted a post from Virginia Bruce, correcting the CPO email address, which is plural, cpolleaders@gmail.com.
4. He also noted a comment from Virginia, that the meeting Q & A follows the application and are therefore important. He explained that the meeting notes, including list of registered participants is included with the application, so the County understands what has been discussed. He noted, however, that registering for this meeting does not equate to being recognized by the County as a participant of record. Once the County starts their review, if you have comments, you will want to make sure you submit them to the County to be considered as being on the record.

5. Will the existing house remain?

Response: Yes, it will remain on the Adjusted Tax Lot 2400. But, other than the PLA, it will not be part of the subdivision.

6. Please explain the resource enhancement.

Response: Generally, the enhancement will include removal of invasive species and planting of native trees, shrubs and ground cover. There will also be a Mitigation Area, shown on the plans on the west side of the private street, on Tax Lot 400. This mitigation is for the encroachment of the Tract B water quality facility. The mitigation is basically plantings to replace the resource values lost by Tract B.

7. Are the circles on the plan trees to remain?

Response: Yes, the plan shows several boundary trees along the perimeter of the site, which are either close to the property line or on the adjacent property. These trees will all be preserved and protected during construction with tree root zone fencing. If you have concerns about any specific concerns about specific trees you can certainly contact Westwood Homes.

8. Will there be sewer access to the north?

Response: There is a utilities (storm and sanitary) easement between lots 5 & 6, which will allow for access to storm and sanitary for properties to the north.

If you have a specific concern, contact me and I will coordinate with the project engineer to get answers.

9. Regarding questions about traffic impacts on Leahy, there will be no individual lot access to Leahy Road. All lots, including the two PLA adjusted parcels (Tax Lots 400 & 2400), will have access from the new private street. As noted, the project will provide frontage improvements (1/2 street from centerline north) to County collector street standards. And the project will pay into the TDT fund, which is used for arterial and collector street improvements.
10. Regarding questions about infrastructure improvements, the developer is not responsible for any off-site system improvements, but does pay Systems Development Charges (SDCs) for sewer, water, parks and recreation, Metro and Schools. The SDCs are the proportional share for general system improvements.

The developer does, however, pay for all on-site improvements.

11. Years ago, there was an arrowhead found along the creek. Will there be any archeological investigation done for this project?

Response: The contractor will follow state law regarding reporting any artifacts that may be found. This site is not listed as an historic resource, so no specific investigation is required.

12. What about construction traffic impacts?

Response: The contractor is required to submit a construction traffic management plan, which the County monitors during construction.

13. What is the expected construction timeline?

Response: The project is expected to go to construction in the summer of 2022. The construction period will likely be June to September. After all the site work is done, homes will be constructed as the market demands at that time.

14. What about construction noise?

Response: Construction noise is regulated by the County's Noise Ordinance, which sets limits of 7 am to 7 pm Monday through Saturday, with no work on Sunday or holidays, without special approval.

15. Why do you use MS Teams instead of Zoom?

Response: MS Teams is integrated with our company software, which makes it easy to use. Also, the County requires a toll free phone line for public access, which is provided using

MS Teams. Zoom, while useful, limits meetings to 45 minutes and also does not provide toll free access.

16. I still have questions about sewer to the north?

Response: As I noted, there is an easement that will be provided to allow access the storm and sanitary for properties to the north. If you have a specific concern, contact me and I will coordinate with the project engineer to get answers.

Wayne noted that all questions received will be included in the meeting notes and any questions not answered tonight we will respond to within 7 days. The meeting notes will be posted on the project web page <https://bit.ly/285020materials>.

With no further questions posted, Wayne closed the meeting at 7:00 PM. He thanked everyone for participating and noted he would leave the contact Screen Slide up on screen until 7:15.

Session Id	Participant Id	Full Name	UTC Event Timestamp	Action	Role
038f5dc1-dac0-4a0c-880c-0753e96b02e1	whayson@pd-grp.com	Wayne Hayson	8/9/2021 9:51:47 PM	Joined	Attendee
bb8c0fef-7f29-4ec0-a832-fb07c310e557	BAltman@pd-grp.com	Ben Altman	8/10/2021 12:44:04 AM	Joined	Event Team Member
9464a69-5bf3-4891-9152-ed59e4b22af9			8/10/2021 12:48:48 AM	Joined	Attendee
330990f1-e7db-4bc9-b07b-868433c8d8ea	whayson@pd-grp.com	Wayne Hayson	8/10/2021 12:50:32 AM	Joined	Event Team Member
9bdf171d-c877-47e9-bc43-2c5a9a02ce3c			8/10/2021 12:54:30 AM	Joined	Attendee
d34a4cc9-ba90-43b9-b394-2e32519a4920			8/10/2021 12:54:39 AM	Joined	Attendee
f2ee1047-83da-402c-9f4b-337546906ca4			8/10/2021 12:55:07 AM	Joined	Attendee
b0cadb94-2896-460c-9312-025c02893d52	art.young@feynmangroup.com	Art Young	8/10/2021 12:55:12 AM	Joined	Attendee
0ff939aa-4614-4527-aead-45a808b9eb7f	aaron.horne@pihl-inc.com	Aaron Horne	8/10/2021 12:57:01 AM	Joined	Attendee
200ec078-8e66-4454-b38b-da8c5759gfd4			8/10/2021 12:58:36 AM	Joined	Attendee
7656a52e-0a83-453b-aa49-dccb34f1e694			8/10/2021 12:59:43 AM	Joined	Attendee

			8/10/2021 1:02:19 AM	Joined	Attendee
75fd8b1f-1078-47e5-addb-1ea1309b9194			8/10/2021 1:02:38 AM	Joined	Attendee
8a6412a5-7b67-490a-b84e-7e9bfd5e795a			8/10/2021 1:03:24 AM	Joined	Attendee
3a53c81d-0b8a-4e8f-b80f-41bb4dd5a63b			8/10/2021 1:04:00 AM	Joined	Attendee
fd32d416-00ca-4a03-b44e-e32e1915cf9a			8/10/2021 1:04:00 AM	Joined	Attendee
b20cf356-e778-437a-a85d-87a80b76ea30			8/10/2021 1:04:24 AM	Joined	Attendee
c2bb3228-4999-4e91-845a-60b549acff9b	gwen.perry@siemens-healthineers.com	Gwen Perry	8/10/2021 1:05:05 AM	Joined	Attendee
7f59c0f3-e992-4012-b942-4665610f58e6			8/10/2021 1:05:56 AM	Joined	Attendee
da69bb02-b1b4-46e9-b91d-860bf1c0d66f			8/10/2021 1:17:58 AM	Joined	Attendee
d88cc120-cf02-4c6e-8f1e-d4e148164399	whayson@pd-grp.com	Wayne Hayson	8/9/2021 9:51:50 PM	Left	Attendee
038f5dc1-dac0-4a0c-880c-0753e96b02e1			8/10/2021 12:56:39 AM	Left	Attendee
d34a4cc9-ba90-43b9-b394-2e32519a4920					

		8/10/2021 1:02:20 AM	Left	Attendee
200ec078-8e66-4454-b38b-da8c5759gfd8		8/10/2021 1:03:00 AM	Left	Attendee
9bdf171d-c877-47e9-bc43-2c5a9a02ce3c		8/10/2021 1:04:00 AM	Left	Attendee
75fd8b1f-1078-47e5-addb-1ea1309b9194		8/10/2021 1:04:04 AM	Left	Attendee
7656a52e-0a83-453b-aa49-dccb34f1e694		8/10/2021 1:13:46 AM	Left	Attendee
b20cf356-e778-437a-a85d-87a80b76ea30		8/10/2021 1:16:19 AM	Left	Attendee
da69bb02-b1b4-46e9-b91d-860bf1c0d66f		8/10/2021 1:52:30 AM	Left	Attendee
d88cc120-cf02-4c6e-8f1e-d4e148164399		8/10/2021 1:53:43 AM	Left	Attendee
f2ee1047-83da-402c-9f4b-337546906ca4		8/10/2021 1:54:42 AM	Left	Attendee
c2bb3228-4999-4e91-845a-60b549acf9b	Gwen Perry	8/10/2021 1:55:07 AM	Left	Attendee
7f59c0f3-e992-4012-b942-4665610f58e6		8/10/2021 2:02:27 AM	Left	Attendee
fd32d416-00ca-4a03-b44e-e32e1915cf9a				

3a53c81d-0b8a-4e8f-b80f-41bb4dd5a63b			8/10/2021 2:05:31 AM	Left	Attendee
0ff939a2-4614-4527-aead-45a808b9eb7f	aaron.horne@pihl-inc.com	Aaron Horne	8/10/2021 2:07:52 AM	Left	Attendee
9464a6f9-5bf3-4891-9152-ed59e4b22af9			8/10/2021 2:08:28 AM	Left	Attendee
b0cadb94-2896-460c-9312-025c02893d52	art.young@feynmangroup.com	Art Young	8/10/2021 2:08:32 AM	Left	Attendee
8a6412a5-7b67-490a-b84e-7e9bfd5e795a			8/10/2021 2:08:35 AM	Left	Attendee
330990f1-e7db-4bc9-b07b-868433c8d8ea	whayson@pd-grp.com	Wayne Hayson	8/10/2021 3:16:32 AM	Left	Event Team Member
	Aaron Horne, 41660 NW Sunset Highway, Banks, Oregon 97106; aaron.horne@pihl-inc.com; (503) 619-9014				
	Ben Adams, 10380 NW Cornell; 503-547-9296				
	Art Young, 10305 NW Leahy Rd; artyoung@gmail.com, 503-577-6563				

Source	Type	Identity	Timestamp	Content
Attendee	Question	Ben (Unverified)	8/10/2021 1:37	also would like to know if sewer is accessible for properties north of the development?
Attendee	Question	Ben (Unverified)	8/10/2021 1:26	are the circles around the new home lots trees that will stay?
Attendee	Question	Anonymous (Unverified)	8/10/2021 0:59	Are there other developers in this project included outside of Westwood homes?
Attendee	Question	Ben (Unverified)	8/10/2021 1:46	do you know how long construction might take? and what hours would be for that?
Attendee	Question	Jon Perry (Unverified)	8/10/2021 1:10	Due to the aging infrastructure services, what will be done to improve or replace the existing infrastructure with the additional load these dwellings will put on it?
Attendee	Question	Ben (Unverified)	8/10/2021 2:01	great, I'll check in tomorrow!
Attendee	Question	Jon Perry (Unverified)		how are you going to handle construction traffic on leahy which is a 1 lane road
Attendee	Question	Virginia Bruce (Unverified)	8/10/2021 1:26	essentially?
Attendee	Question	Virginia Bruce (Unverified)	8/10/2021 1:08	I'm here but can't sign in
Attendee	Question	Virginia Bruce (Unverified)	8/10/2021 1:11	It's cpo1leaders@gmail.com PLURAL
Attendee	Question	Ben (Unverified)	8/10/2021 1:03	not getting a live feed yet..
Attendee	Question	Virginia Bruce (Unverified)	8/10/2021 1:15	now I can't get audio. I'm going back to my life
Attendee	Question	Virginia Bruce (Unverified)	8/10/2021 1:10	Please mention that the comments and questions at this meeting follow the development,
Attendee	Question	Jon Perry (Unverified)	8/10/2021 1:17	so they are important.
Attendee	Question	Jon Perry (Unverified)	8/10/2021 1:42	so the house are 10ft between eachother?
Attendee	Question	Ben (Unverified)	8/10/2021 1:57	still curious about sewer options for North properties?... is there someone else I should check with to get access?
Attendee	Question	N (Unverified)	8/10/2021 1:52	street widening to the south of Leahy? How much ... its two lane now developing to three lane?
Attendee	Question	Aaron Horne (Unverified)	8/10/2021 2:07	Thanks Wayne
Attendee	Question	Ben (Unverified)	8/10/2021 1:57	thanks Wayne for everything..

	Will you be trying to save the mature trees instead of chopping them all down?	Attendee	Question	8/10/2021 1:29	What is that improvement to the vegetated area? Please explain what that means?
Attendee	Question	Jon Perry (Unverified)	8/10/2021 1:09	What will you be doing about the significant increase in traffic in a family neighborhood?	
Attendee	Question	Anonymous (Unverified)	8/10/2021 0:56	When is the development scheduled to start?	
Attendee	Question	Anonymous (Unverified)	8/10/2021 1:07	Why do you us; Microsoft teams and not Zoom!!!!	
Attendee	Question	Anonymous (Unverified)	8/10/2021 0:58	Will sidewalks be built along Leahy Road?	
				Years ago an Indian arrowhead was found in the creek where the planned development is located. Would you plan to have someone check for additional antiquities there?	8/10/2021 1:11
Attendee	Question	N (Unverified)	8/10/2021 1:11	located. Would you plan to have someone check for additional antiquities there?	

Neighborhood Meeting for a Proposed 15-Lot Subdivision – “Estates at Leahy Park”

The meeting will begin at 6pm.

Per County requirements and to be recognized as attending the meeting, please sign in using the Live Event Q&A feature () on the upper right-hand side of your screen. Please include your name, address, email, and phone number.

A number of email questions were received prior to 4pm today. Following the project presentation, there will be an opportunity to submit additional questions using the Live Event Q&A feature. You may also email questions to

whayson@pd-grp.com



CPO1

**Bonny Slope West
Cedar Hills
Cedar Mill**

MISSION: To encourage and empower public involvement in the **Bonny Slope West, Cedar Hills and Cedar Mill** communities.

CPO 1 Steering Committee:

Virginia Bruce - Chair, CCI Rep cpo1leaders@gmail.com

Bruce Bartlett - Vice Chair, CCI Rep

Resources:

<https://www.co.washington.or.us/CAO/CPO/index.cfm>

<https://www.co.washington.or.us/CAO/CPO/CPO1/index.cfm>

<https://www.facebook.com/CPO1.WaCounty/>

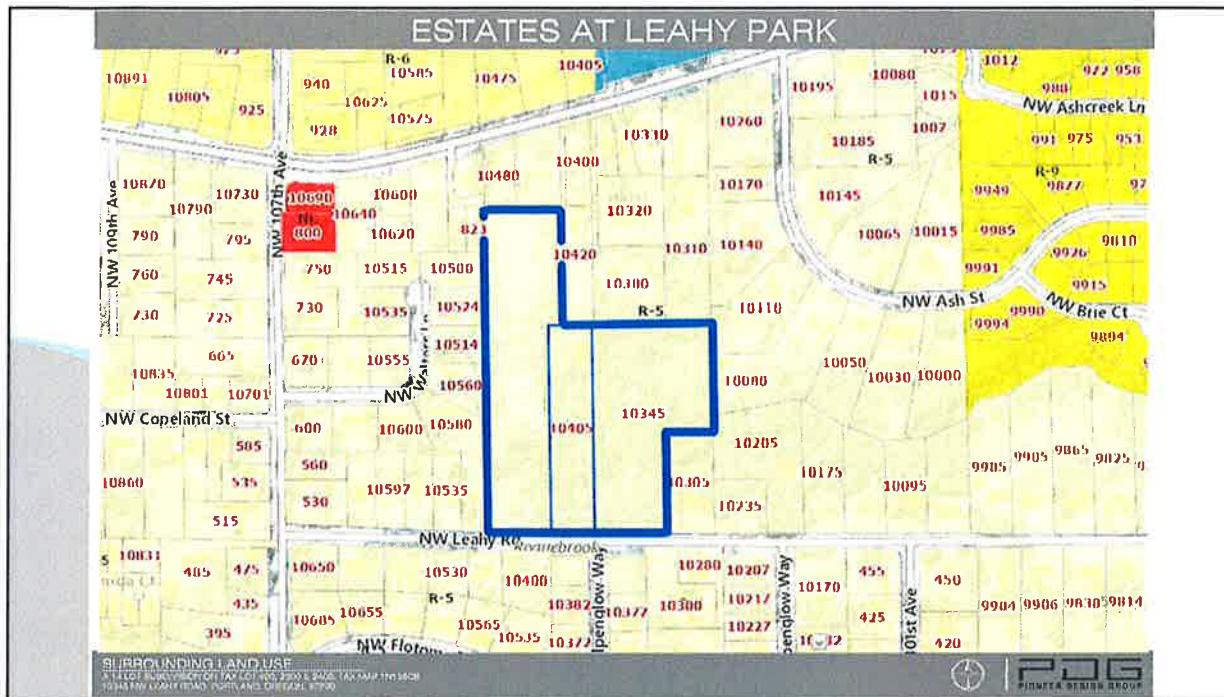


Washington County Process

TYPE II: ADMINISTRATIVE WITH NOTICE

1. Pre-application conference with staff & pre-design meeting with Clean Water Services
2. Neighborhood Meeting
3. Application submitted
4. Staff reviews application for acceptance within 30 days of submittal
5. Notice to applicant of Acceptance of Application
6. Staff mails Public Notice to surrounding property owners (500 ft.)
7. 14-day public comment period
8. Staff review comments & prepares report
9. Decision by Director, within 120 days of application acceptance
10. Staff mails Notice of Decision to applicant, persons within the notification area, the CPO, and those persons who submit comments
11. 12-day appeal period







Questions

To submit questions at this time, use the Live Event Q&A feature () on the right-hand side of your screen. Depending on the number and complexity of the questions received, responses to live questions may occur via email within 7 days following the meeting. You may also email questions to whayson@pd-grp.com. Notes from the meeting will be available at <https://bit.ly/285020materials> within 7 days of the meeting.

Thank you for attending!



Eileen Cunningham

From: Charles Pfeiffer <cwpfeiffer099@gmail.com>
Sent: Thursday, February 17, 2022 2:25 PM
To: Eileen Cunningham
Subject: [EXTERNAL] Leahy Road 10345-10405

I can't believe that you would even entertain this proposal for the development of 8 acres on Leahy Road, 10345-10405- cut down 8 acres of trees and fill in 2 wetlands to satisfy the GREED of a developer. Tell this developer to go to Texas where there are no zoning laws and he/she can degrade the earth and planet with abandon, but NOT HERE IN NW PORTLAND.

Scrap the development of this acreage on Leahy Road, This developed should be ROUNDLY CONDEMNED for even bring such a proposal to your attention.

Charles W. Pfeiffer
4873 NW Promenade Terrace
Portland, OR 97229

330 760 2889

CAUTION: This email originated from outside the County. Exercise caution when opening attachments or clicking links from unknown senders. Always follow the guidelines defined in the KnowBe4 training when opening email received from external sources. Contact the ITS Service Desk if you have any questions.

From: [Doria Mateja-Stellmacher](#)
To: [Eileen Cunningham](#)
Subject: Fwd: Casefile Public Comment - Response
Date: Sunday, February 13, 2022 2:56:59 PM

Begin forwarded message:

From: Washington County Forms <noreply@co.washington.or.us>
Date: February 12, 2022 at 6:51:59 PM PST
To: Doria Mateja-Stellmacher <Doria_Mateja@co.washington.or.us>, LUT Development <lutdev@co.washington.or.us>
Subject: Casefile Public Comment - Response
Reply-To: Washington County Forms <noreply@co.washington.or.us>

Submitted on Sat, 02/12/2022 - 18:51

Submitted by: Anonymous

Submitted values are:

Casefile Number
L2100311

Your Name
Gwen Perry

Email
gwenith2003@gmail.com

Address
9905 NW Leahy
Portland , Oregon. 97229

Your Comments
I'm already concerned about all the construction vehicles blocking Leahy Road during this construction but now that there will be construction on Cornell at this very spot it's going to drive all traffic down onto Leahy Road where there's no sidewalks. This is going to be a very dangerous situation and should be postponed at the very least until the work on Cornell is complete.

From: Doria Mateja-Stellmacher
To: Eileen Cunningham
Subject: Fwd: Casefile Public Comment - Response
Date: Sunday, February 13, 2022 2:57:07 PM

Begin forwarded message:

From: Washington County Forms <noreply@co.washington.or.us>
Date: February 12, 2022 at 7:17:15 PM PST
To: Doria Mateja-Stellmacher <Doria_Mateja@co.washington.or.us>, LUT Development <lutdev@co.washington.or.us>
Subject: Casefile Public Comment - Response
Reply-To: Washington County Forms <noreply@co.washington.or.us>

Submitted on Sat, 02/12/2022 - 19:17

Submitted by: Anonymous

Submitted values are:

Casefile Number
L2100311

Your Name
Gwen Perry

Email
gwenith2003@gmail.com

Address
9905 NW Leahy Rd
Portland , Oregon. 97229

Your Comments
Very concerned about the total destruction that 14 or 15 homes would do to the area planned. It's on a stream where there are plenty of animals. Leveling areas so rich with life is detrimental.

Eileen Cunningham

From: Doria Mateja-Stellmacher
Sent: Wednesday, February 9, 2022 5:24 PM
To: Eileen Cunningham
Subject: FW: Casefile Public Comment - Response

From: noreply@co.washington.or.us <noreply@co.washington.or.us>
Sent: Wednesday, February 9, 2022 5:16 PM
To: Doria Mateja-Stellmacher <Doria_Mateja@co.washington.or.us>; LUT Development <lutdev@co.washington.or.us>
Subject: Casefile Public Comment - Response

Submitted on Wed, 02/09/2022 - 17:15

Submitted by: Anonymous

Submitted values are:

Casefile Number

L2100311

Your Name

James Pollock

Email

jw_pollock@yahoo.com

Address

10342 NW Alpenglow Way
Portland, Oregon. 97229

Your Comments

I have concerns about the open space indicated in the project. It contains a waterway and is utilized by a variety of wildlife including deer for habitat and movement. Will it be preserved as wildlife habitat and if so who will manage it? I am also concerned about traffic hazards for vehicles entering or exiting the development since Leahy Rd carries lots of traffic and much of the traffic speeds well above the posted speed limit. This long straight section of Leahy Rd encourages speeding and really need speed control bumps.

From: [Joanne Delmonico](#)
To: [Eileen Cunningham](#)
Subject: [EXTERNAL] Leahy Estates project
Date: Tuesday, January 25, 2022 4:21:49 PM

Hi Eileen,
I was given your name to contact regarding the Leahy Estates project L2100311.
I represent neighbors and I am also a member of TreekeepersWC.org and CCI SNR group that
is monitoring developments that impact SNR areas.
Is there any update on this proposed development?
I would like to be able to access the Staff Report once it is completed.
Thank you in advance for any info you can provide.
Joanne Delmonico

CAUTION: This email originated from outside the County. Exercise caution when opening attachments or clicking links from unknown senders. Always follow the guidelines defined in the KnowBe4 training when opening email received from external sources. Contact the ITS Service Desk if you have any questions.

Doria Mateja-Stellmacher

From: noreply@co.washington.or.us on behalf of Washington County Forms
<noreply@co.washington.or.us>
Sent: Sunday, February 20, 2022 11:04 AM
To: Doria Mateja-Stellmacher; LUT Development
Subject: Casefile Public Comment - Response

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Submitted on Sun, 02/20/2022 - 11:02

Submitted by: Anonymous

Submitted values are:

Casefile Number

L2100311

Your Name

Susan Mates

Email

smmates@gmail.com

Address

8945 NW Oak Street
Portland, Oregon. 97229

Your Comments

Please see my attached comments. Thank you.

Attach Documents

- leahy-park-comments-2.2022.pdf (61.18 KB)

Eileen Cunningham, Associate Planner
Land Use & Transportation Department
Washington County
155 N. First Ave, MS13
Hillsboro, OR 97124

<https://www.co.washington.or.us/apps/projects-comment/#top>

Re: Case #2100311

I have been following the plans for The Estates at Leahy Park with interest. This is a lovely site with plenty of potential for homes that take advantage of its location and the stream, vegetation, and wildlife there. Unfortunately, that does not seem to be the case for this developer. While I understand that we all have different notions of how to proceed, I do call into question whether the proposed plan falls within the ordinances that should bind it.

Oregon state law establishes a preference for avoidance of wetland impacts, but developers of the Estates at Leahy Park don't seem to be adhering to that. Their latest plan will permanently fill two wetlands in the Sensitive Area on the acreage.

These wetlands scored high in the site analysis because of their suitability for amphibian and turtle habitat. They have a high relative percent of wooded cover, minimal disturbances to the soil, several types of dead wood and snags in the vicinity, and an appropriate change between the predominating biennial high and low water levels.

Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development.

According to the EPA, federal guidelines decree, by Executive Order No 11990, that there be no net loss of wetlands. The basic premise of the program is that no discharge of dredged or fill material may be permitted if a practicable alternative exists that is less damaging to the aquatic environment. In other words, when you apply for a permit, you must first show that steps have been taken to avoid impacts to wetlands, streams and other aquatic resources. In this case, I cannot see that steps have been taken to avoid impacts to these wetlands.

There *are* alternatives. Although this developer did consider two options that would avoid infilling the wetlands and deemed them impractical, those are not the only possibilities.

Those were rejected as the loss of the lots and the increased land cost of the access road would make the project “financially unfeasible” in the eyes of the developer. Apparently no alternatives with smaller lot sizes or different housing configurations were considered for this project with its million-dollar homes. But certainly there are other ways to develop this site that would retain those wetlands - and more trees. Certainly I would pay a premium price for the chance at a home that clustered the buildings in order to preserve a larger chunk of the local ecosystem.

The Estates at Leahy Park subdivision site plan claim to be designed to comply with Washington County’s planning requirements, including those for Significant Natural Resource (SNR) preservation areas. But those have been called into legal question by the recent Land Use Board of Appeals (LUBA) decision. That decision concluded that the county had broken its own rules – and the state’s – that were to protect natural resources from loss due to development.

Under the LCDC’s enforcement order, the county is required to adopt new Goal 5 rules for SNR resources to replace those invalidated by the Court of Appeals. The enforcement order also halted development applications for areas designated as Wildlife Habitat under the County’s Goal 5 program until the new rules could be adopted. This application should be tabled until this issue has been resolved.

I hope that you will give this—and other—applications very careful consideration. Our natural resources are irreplaceable, and their care is in your hands.

Thank you for considering my comments.

Sincerely,
Susan Mates
8945 NW Oak Street
Portland, OR 97229
smmates@gmail.com

Doria Mateja-Stellmacher

From: noreply@co.washington.or.us on behalf of Washington County Forms
<noreply@co.washington.or.us>
Sent: Monday, February 21, 2022 6:26 PM
To: Doria Mateja-Stellmacher; LUT Development
Subject: Casefile Public Comment - Response

Categories: Follow-up

Submitted on Mon, 02/21/2022 - 18:25

Submitted by: Anonymous

Submitted values are:

Casefile Number

L2100311

Your Name

Jon Perry

Email

jperry7575@gmail.com

Address

9905 NW Leahy Rd
Portland, Oregon. 92779

Your Comments

The proposed project has several major safety detractors. First, the added strain on an already overstressed and aging infrastructure could lead to outages, and during weather such as we had last summer, be quite deadly. Second, the added traffic on a rural 2 lane road, that already sees increased traffic from ongoing projects that are to carry into 2023. This has already led to property hit and run incidents, and increasing the burden of traffic will only increase potential injuries to foot/bike traffic within this area. Deciding to go forward with this project would show a marked disregard for public safety.

M E M O R A N D U M

Date: December 8, 2021

To: Eileen Cunningham, Washington County DLUT

From: Jackie Sue Humphreys, Clean Water Services (CWS)

Subject: 21-311-S/PLA/PLA/DHA, Estates at Leahy Park 15-Lot Subdivision

Please include the following comments when writing your conditions of approval:

PRIOR TO ANY WORK ON THE SITE AND LAT RECORDING

A Clean Water Services (CWS) Site Development Permit must be obtained prior to plat approval and recordation. Application for CWS Site Development Permit must be in accordance with the requirements of the Design and Construction Standards, Resolution and Order No. 19-5 as amended by R&O 19-22 (CWS Standards), or prior standards as meeting the implementation policy of R&O 18-28, and is to include:

- a. Compliance with all provisions of CWS Standards.
- b. Detailed grading and erosion control plan. An Erosion Control Permit will be required. Area of Disturbance must be clearly identified on submitted construction plans. If site area and any offsite improvements required for this development exceed one-acre of disturbance; project will require a 1200-CN Erosion Control Permit. If site area and any offsite improvements required for this development exceed five-acres of disturbance; project will require a 1200-C Erosion Control Permit.
- c. A drainage report including a downstream drainage analysis meeting the requirements of R&O 19-5, Section 2.04.2.m will be required. If downstream storm conveyance does not have the capacity to convey the volume during a 25-year, 24-hour storm event, the applicant is responsible for mitigating the flow as provided in the above named design standards.
- d. Detailed plans showing each lot within the development having direct access by gravity to public storm and sanitary sewer.



LAND USE & TRANSPORTATION

Engineering, Traffic and Survey

Land Use Application Engineering Comment Form

Casefile No: 21-311

Project Name: Estates at Leahy Park

Assessor Map No./ Tax Lot No.: 1N135CB00400, 2300, 2400

Site Address: 10345 & 10405 NW Leahy Rd

Land Development Staff (Planner): Eileen Cunningham

Engineering Reviewer: Shane LaBelle

Date Received: 11/19/21

Date Comments Requested: 12/09/21

Date Reviewed: 12/01/21

	APPLICANT	APPLICANT REPRESENTATIVE	OWNER(S)
Company Name:		Pioneer Design Group	Greg and Janelle Lorts
Contact Person:	Bill Wagoner	Wayne Hayson	
Phone:	503.980.1708	503.643.8286	
Email:	bill@westwoodhomesllc.com	whayson@pd-grp.com	

Comments/Requirements:

1. See Transportation Planner
2. See CWS
3. Provide completed "Design Option" form.
4. Once Public Assurances has received the design option form and administration deposit, you will receive an invitation to our Electronic Plan Review (EPR) system, ProjectDox. Please follow the instructions in the email regarding uploading plans and documents properly. (Upload plans into the "Drawings" folder. Upload documents and a signed and completed Washington County Road Engineering Plan Submittal Checklist in the "Documents" folder. For a complete list of required documents refer to the Road Design Standards Appendix E):
 - a. NW Leahy Rd;
 - i. Dedication of Right of Way shall be 37 feet from the legal centerline, per a Washington County Collector (C-1) designation.
 - ii. Construct half-street improvements to a Washington County Collector (C-1) designation. Improvements shall include but not limited to paving, sidewalk, planter strip, curb and gutter, street trees, signing, illumination, utility re-location and drainage.
5. Commercial driveway (#1040) for Tract 'C' access with NW Leahy Rd or other County Engineer approved private street access.
6. Provide a Pavement Report prepared by a Professional Engineer. The report will include recommendations for new full depth pavement and/or pavement repair for existing roadway sections affected by the project. The report shall include but is not limited to the following recommendations: Existing pavement condition analysis, Grind and Inlay/Overlay, pavement repair, "Wet Weather" pavement construction, ESAL calculations, AASHTO pavement design calculations, soil classification, modulus and laboratory test results. Please contact Rob Saxton at Rob.Saxton@co.washington.or.us prior to field investigation.
7. Relocate utilities that are in conflict with public improvements.
8. Provide updated construction cost estimate when plans are approved for public improvements.
9. Requested Administrative Deposit = \$15,000

Notes:

Please contact engineering land use application preparer if all conditions are not placed in notice of decision. There will need to be updates to the requested administrative deposit and several other items updated if changes are made.

WASHINGTON COUNTY BUILDING SERVICES

Inter-Office Correspondence

Kofi Nelson-Owusu, Building Engineer/Supervisor
503-846-2846

December 8, 2021

To: Eileen Cunningham
RE: 10345 & 10405 NW Leahy Road
CASEFILE: L2100311
LOCATION: 10345 & 10405 NW Leahy Road
COMMENTS:

1. A grading permit is required.
2. Site specific geotechnical engineering report with recommendations for the developing of the site is required. The report should be stamped and signed (electronic signature accepted) by an Oregon registered engineer.
3. Provide private road/driveway structural details on the plans per site specific geotechnical engineering recommendations.
4. Provide drainage analysis report stamped by a civil engineer that shows that the additional impervious areas as a result of this proposed work will not impact the surrounding properties negatively per **WCC 14.12.310**.
 - Note: For subdivision developments (more than 3-lots), **WCC 14.12.310-I** provisions cannot be used to satisfy **WCC 14.12.310-A** provisions.
5. Beside the above items, please comply with all the requirements given on the Building Services Grading Permit application forms.