



## EXHIBIT L

### PACIFIC HABITAT SERVICES, INC.

9450 SW Commerce Circle, Suite 180  
Wilsonville, OR 97070

(800) 871-9333 • (503) 570-0800 • Fax (503) 570-0855

January 27, 2022

**Emily Meharg, Senior Planner**  
**City of Sandy**  
39250 Pioneer Boulevard  
Sandy, OR 97055

**Subject: Third-Party Review of Streamflow Assessment Report prepared for 19618 SE Bornstedt Road, Sandy, Oregon PHS #74178**

Dear Emily:

Jason Smith Environmental Consulting assessed a mapped stream using the Streamflow Duration Assessment Method on property located at 19618 Bornstedt Road in Sandy, Oregon, on behalf of Even Better Homes, Inc. to comply with the City's Flood and Slope (FSH) Overlay (City of Sandy Municipal Code 17.60) requirements. At the request of the City of Sandy (City), Pacific Habitat Services, Inc. (PHS) reviewed the FSH Assessment Report submitted to the City by Jason Smith on December 3, 2021. The results of our review are summarized below.

#### **Review Methodology**

PHS visited the project site on January 5, 2022, to observe existing site conditions in order to accurately review the information contained in the December 2021 FSH Assessment Report. Prior to the site visit, PHS reviewed the FSH Assessment Report, the SDAM Methodology, and the following resources:

The National Map (<https://apps.nationalmap.gov/viewer/>) – USGS topographic mapping and the National Hydrography Dataset available through the online National Map Viewer show an unnamed intermittent stream that flows generally from southeast to northwest across the site.

National Wetlands Inventory Map (<https://www.fws.gov/wetlands/data/mapper.html>) – Online National Wetlands Inventory mapping shows a Freshwater Forested/Shrub Wetland (PFO1C) wetland in the location of the stream shown by USGS topographic mapping and the National Hydrography Dataset.

City of Sandy Local Wetlands Inventory – The subject tax lot was not included within the Sandy city limits when the City's Local Wetlands Inventory (LWI) was prepared; however, the City's LWI mapping shows a wetland ending just north of the subject tax lot's northern boundary.

National Resources Conservation Service (NRCS) Soil Survey Mapping (<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>) – The NRCS Web Soil

Survey shows that the vicinity of the stream depicted by other resources is mapped as Cottrell silty clay loam, 2 to 8 percent slopes. Cottrell silt loam is not a hydric soil. No other hydric soils are mapped on the subject tax lot.

During the January 5, 2022, site visit, PHS walked the site and looked for evidence of jurisdictional wetlands in accordance with the *Corps of Engineers Wetland Delineation Manual, Wetlands Research Program Technical Report Y 87 1* (“The 1987 Manual”) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*, which identify wetlands based on the presence of wetland hydrology, hydric soils, and hydrophytic vegetation. PHS also examined the stream that crosses the site in accordance with the Streamflow Duration Assessment Method.

### **Review Findings**

The FSH Assessment Report prepared by Jason Smith and submitted to the City concluded that the stream that crosses the site is ephemeral based on the absence of aquatic macroinvertebrates, submerged aquatic vegetation, and plants with OBL or FACW indicator status, as shown on the streamflow assessment forms dated September 4, 2020, and included in the report. No water was observed in the stream at the time of the September 2020 assessment; however, photographs from November 2021 show conditions within the stream. The report does note that the November 2021 site visit was conducted after a “higher-than-average precipitation event”.

PHS observed that some portions of the stream have a well-defined bed and bank, while other portions of the stream have a very shallow channel with less-well-defined bed and bank, particularly in the northern portion of the site where the topography is more gently sloped and the stream flows through a dense stand of Himalayan blackberry (*Rubus armeniacus*). Where the channel is more well-defined, the channel is sparsely vegetated, and the predominant species growing within the channel are species with a FAC wetland indicator. One section of stream channel contains a sizable stand of American brooklime (*Veronica americana*; FACW), a wetland plant, which suggests that wet soil conditions are present for extended periods into the growing season. PHS also found hydric soils exhibiting redoximorphic features where water flows through a blackberry thicket in the northern portion of the site. This area lacked a well-defined bed and bank and may qualify as a wetland rather than a stream. Further investigation would be necessary to determine the exact location and extent of the area that meet the criteria for a jurisdictional wetland. PHS examined soils in other portions of the site, where topography, plant communities, and saturated soils suggested wetlands might be present but did not find soils meeting hydric soil indicators.

During the January 5, 2022, site visit, PHS observed strong continuous flow throughout the stream. It was raining at the time of PHS’s site visit, and approximately 2.91 inches of rain was recorded at the Headworks Portland WTR B, OR weather station, which is located to the northeast of Sandy, during the two days preceding the site visit. Because of the heavy rain during and immediately preceding the site visit, it is likely that flows observed during the site visit were higher than what might be expected under normal circumstances.

Photos of existing conditions at the time of PHS’s site visit are included in Attachment A. A figure showing the location of the photos and the approximate location of wetland, and the mapped stream

are included as Attachment B. A completed streamflow assessment form based on PHS's observations is included as Attachment C.

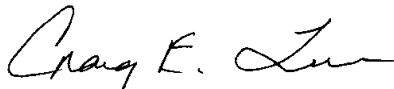
## Conclusions

Based on the presence of wetland plants with a FACW indicator status in portions of the stream channel and the presence of soils meeting hydric soil indicators within the drainageway, it is PHS's opinion that the stream may be intermittent rather than ephemeral. By definition, ephemeral streams flow only in direct response to precipitation. The streambed is always above the water table, and stormwater runoff is the primary source of water. Intermittent streams contain water for only part of the year, typically during the winter and spring when the streambed is below the water table and/or snowmelt from surrounding uplands provides sustained flow. Because the original streamflow assessment was conducted in September 2021 (a time of year when an intermittent stream might be expected to be dry) and because PHS's site visit was conducted during winter after a period of higher-than-average precipitation (a time of year when it can be extremely difficult to distinguish between intermittent and ephemeral streams), PHS recommends that the stream be observed and reassessed during the late spring after a precipitation event and again after a period with no precipitation to determine if flow persists and if stream flows are truly ephemeral rather than intermittent.

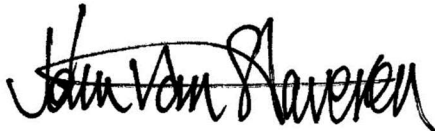
Additionally, NWI mapping depicts wetland on the site, and PHS's observation of hydric soils within a hydrophytic plant community indicate that wetlands subject to jurisdiction under the Oregon Removal-Fill Law and/or Section 404 of the Clean Water Act may be present on the site. A wetland delineation of wetlands is recommended to document the location and extent of wetlands on the site.

If you have any questions, please contact us at 503-570-0800.

Sincerely,



Craig Tumer, PWS  
Senior Environmental Scientist



John van Staveren, SPWS  
Senior Professional Wetland Scientist

Attachment A Site Photographs  
Attachment B Figure  
Attachment C Streamflow Duration Assessment Method Form

# Attachment A

## Site Photographs





**Photo 1**

Looking northeast along  
the mapped stream.

Photo taken Jan. 5, 2022.

**Photo 2**

Looking southwest along  
the stream.

Photo taken Jan. 5, 2022.



6682

1/27/2022



Pacific Habitat Services, Inc.  
9450 SW Commerce Circle, Suite 180  
Wilsonville, OR 97070

Photo Documentation  
19618 SE Bornstedt Road, Sandy, Oregon



**Photo 3**

Looking southwest along the stream.

Photo taken Jan. 5, 2022.

**Photo 4**

Looking southwest along the stream.

Photo taken Jan. 5, 2022.



6682  
1/27/2022



Pacific Habitat Services, Inc.  
9450 SW Commerce Circle, Suite 180  
Wilsonville, OR 97070

Photo Documentation  
19618 SE Bornstedt Road, Sandy, Oregon



**Photo 5**

Hydric soils from wetland area in the northern portion of the site.

Photo taken Jan. 5, 2022.

**Photo 6**

Looking southwest along a non-wetland swale in the western part of the site.

Photo taken Jan. 5, 2022.



6682  
1/27/2022



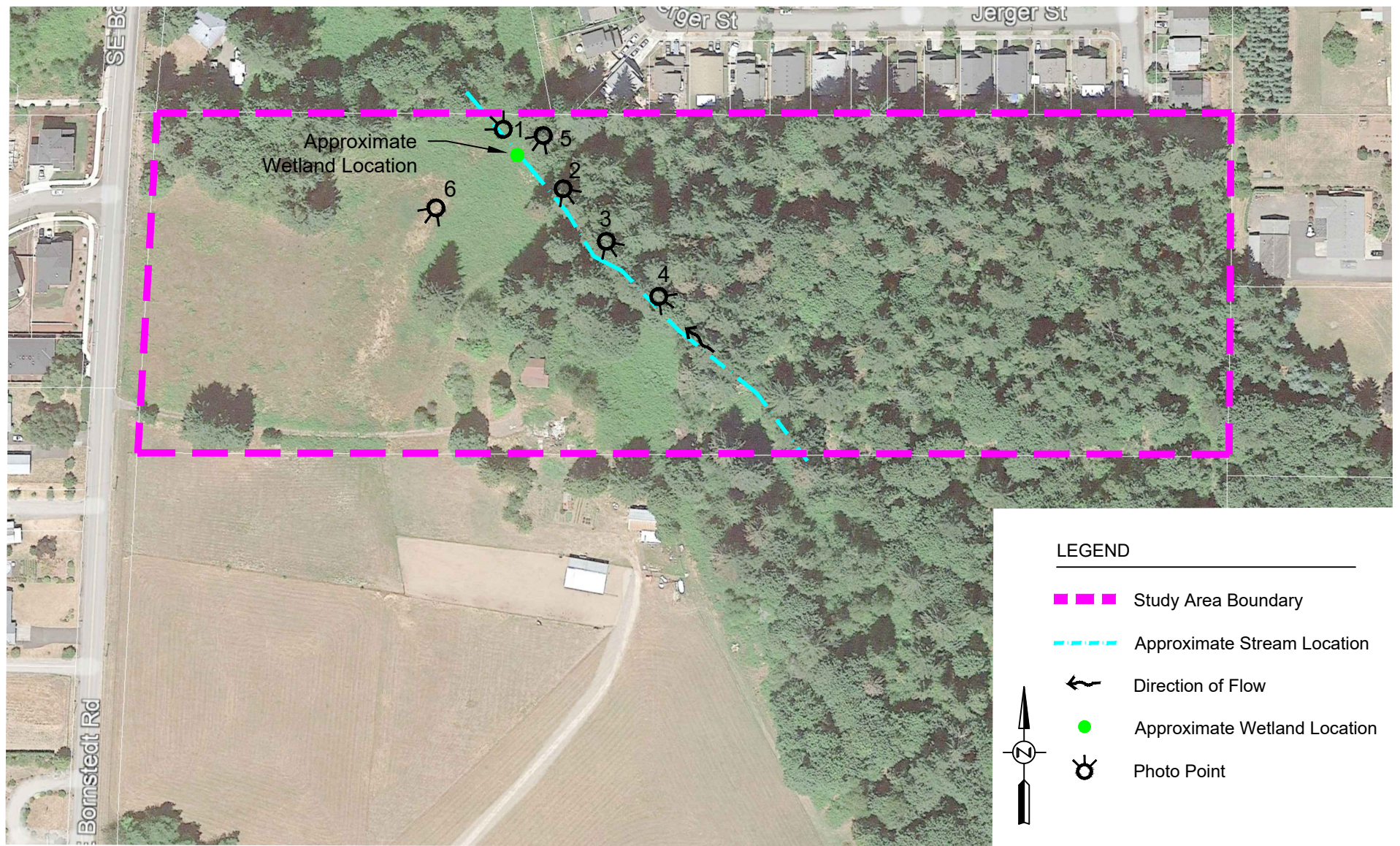
Pacific Habitat Services, Inc.  
9450 SW Commerce Circle, Suite 180  
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Photo Documentation  
19618 SE Bornstedt Road, Sandy, Oregon

# **Attachment B**

**Figure**





LEGEND

- - - Study Area Boundary
- - - Approximate Stream Location
- Direction of Flow
- Approximate Wetland Location
- Photo Point

# Attachment C

## Streamflow Duration Assessment Method Form



## Streamflow Duration Field Assessment Form

Project # / Name 19618 SE Bornstedt Rd		Assessor John van Staveren, Craig Tumer			
Address 19618 SE Bornstedt Rd, Sandy, OR 97050			Date 1/5/2022		
Waterway Name Unnamed Stream		Coordinates at Lat. 45.38240° N			
Reach Boundaries Tax lot boundaries		downstream end Long. 122.26355 W (ddd.mm.ss)			
Precipitation w/in 48 hours (cm) 7.39	Channel Width (m) +/-1	<input type="checkbox"/> Disturbed Site / Difficult Situation (Describe in "Notes")			
<b>Observed Hydrology</b>	% of reach w/observed surface flow <u>100</u>				
	% of reach w/any flow (surface or hyporheic) <u>100</u>				
	# of pools observed <u>few</u>				
<b>Observations</b>	<b>Observed Wetland Plants (and indicator status):</b>  <i>Veronica americana</i> (OBL)	<b>Observed Macroinvertebrates:</b>			
		Taxon	Indicator Status	Ephemeroptera?	# of Individuals
		None			
<b>Indicators</b>	1. Are aquatic macroinvertebrates present?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	2. Are 6 or more individuals of the Order Ephemeroptera present?		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	3. Are perennial indicator taxa present? (refer to Table 1)		<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	4. Are FACW, OBL, or SAV plants present? (Within 1/2 channel width)		<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	5. What is the slope? (In percent, measured for the valley, not the stream)		<u>3.6</u> %		
<b>Conclusions</b>					
	<b>Single Indicators:</b> <input type="checkbox"/> Fish <input type="checkbox"/> Amphibians	<b>Finding:</b> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			

## Streamflow Duration Field Assessment Form

**Notes:** single indicator conclusions, description of disturbances or modifications that may interfere with indicators, etc.)

**Difficult Situation:**

Describe situation. For disturbed streams, note extent, type, and history of disturbance.

- Prolonged Abnormal Rainfall / Snowpack
  - Below Average
  - Above Average
- Natural or Anthropogenic Disturbance
- Other: \_\_\_\_\_

**Additional Notes:** (sketch of site, description of photos, comments on hydrological observations, etc.) Attach additional sheets as necessary.

**Ancillary Information:**

- Riparian Corridor
- Erosion and Deposition
- Floodplain Connectivity

**Observed Amphibians, Snake, and Fish:**

Taxa	Life History Stage	Location Observed	Number of Individuals Observed



## EXHIBIT M

Rebecca Casey <[rcasey@ci.sandy.or.us](mailto:rcasey@ci.sandy.or.us)>

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### Bornstedt View Subdivision 21-021 SandyNet Comments

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**Greg Brewster** <[gbrewster@ci.sandy.or.us](mailto:gbrewster@ci.sandy.or.us)>  
To: Planning <[planning@ci.sandy.or.us](mailto:planning@ci.sandy.or.us)>

Fri, Jun 3, 2022 at 10:00 AM

Hi Emily,

Here is our comment we would like to have on file regarding the broadband requirements:

--

Broadband vault/conduit infrastructure are required for all new developments. Please coordinate with the SandyNet General Manager. Please provide PGE preliminary or final plan to Greg Brewster, [gbrewster@ci.sandy.or.us](mailto:gbrewster@ci.sandy.or.us) for design and joint use of common dry utility trench as well as material requirements and standards.

Thank you,  
Greg Brewster

--

IT Director/SandyNet General Manager  
City of Sandy/SandyNet  
SandyNet: 503-668-2923  
Desk Phone: 503-489-0937

## Fwd: The Bornstedt Views - Transmittal (Notice of Proposal)

Kelly O'Neill Jr. <koneill@ci.sandy.or.us>  
To: Planning <planning@ci.sandy.or.us>

Mon, Jun 6, 2022 at 7:58 AM

FYI...

----- Forwarded message -----

From: **Gary Boyles** <fmboyles.sandyfire@gmail.com>  
Date: Sat, Jun 4, 2022, 1:48 PM  
Subject: Re: The Bornstedt Views - Transmittal (Notice of Proposal)  
To: Rebecca Casey <rcasey@ci.sandy.or.us>  
Cc: Mac Even <mac@evenbetterhomes.com>, Kelly O'Neill Jr. <koneill@ci.sandy.or.us>

Hi Rebecca,

I have one concern for the record regarding the proposed Bonstedt Views Subdivision. In the transmittal, Mr. Brown indicates that Maple Street, east of Street B, has a grade of 12%. Access roadway grades shall not exceed 10% per the Oregon Fire Code. However, an alternate method of construction, which may include but is not limited to the installation of automatic fire sprinkler systems, in accordance with ORS 455.610 may be approved to mitigate this condition.

Gary Boyles  
Fire Marshal  
**Sandy Fire District No. 72**  
PO Box 518  
17460 SE Bruns Ave.  
Sandy, Oregon 97055

Business line: 503-668-8093  
Cell number: 503-891-7042

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On Tue, May 24, 2022 at 1:47 PM Rebecca Casey <rcasey@ci.sandy.or.us> wrote:  
Hi Gary, please see the attached Transmittal for the Bornstedt Views Subdivision..

Let us know if you have any questions...

--

Rebecca Casey  
Administrative Assistant

City of Sandy  
Development Services Department  
39250 Pioneer Blvd  
Sandy, OR 97055  
503-489-2160 (Direct)  
rcasey@ci.sandy.or.us  
Office Hours: Tuesday - Friday 9am - 4pm

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# SANDY FIRE DISTRICT NO. 72

## Fire Prevention Division

### E-mail Memorandum

To: [planning@ci.sandy.or.us](mailto:planning@ci.sandy.or.us)

From: Gary Boyles

Date: September 18, 2021

Re: Bornstedt Views Subdivision File No. 21-021 SUB/TREE

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Review and comments are based upon the current version of the Oregon Fire Code (OFC) as adopted by the Oregon Office of State Fire Marshal. The scope of this review is typically limited to fire apparatus access and water supply, although the applicant shall comply with all applicable OFC requirements. When buildings are completely protected with an approved automatic fire sprinkler system, the requirements for fire apparatus access and water supply may be modified as approved by the fire code official. References, unless otherwise specified, include provisions found in the Metro Code Committee's Fire Code Applications Guide, OFC Chapter 5 and appendices B, C and D.

### COMMENTS:

#### General

1. Construction documents detailing compliance with fire apparatus access and fire protection water supply requirements shall be provided to Sandy Fire District for review and approval prior to building permit submittal.
2. Approved fire apparatus access roadways and an approved water supply for fire protection, either temporary or permanent, shall be installed and operational prior to any combustibile construction or storage of combustibile materials on site in accordance with OFC Chapter 33.
3. Buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible from the street or road fronting the property, including monument signs.

#### Fire Apparatus Access

**FIRE APPARATUS ACCESS ROAD** (as defined by the OFC). A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as *fire lane*, public street, private street, parking lot lane and access roadway.

1. Fire apparatus access roads shall be within 150 feet of all portions of the exterior wall of the first story of any building as measured by an approved route around the exterior of the building. An approved turnaround will be required if the remaining distance to an approved intersecting roadway, as measured along the fire apparatus access road, is greater than 150 feet.
2. Dead end fire apparatus access roads in excess of 150 feet in length shall be provided with an approved turnaround.
3. Dead-end streets in excess of 150 ft., resulting from a phased project, are to be provided with an approved temporary turnaround.
4. For developments of one- and two-family dwellings where the number of dwelling units exceed 30, or multiple-family residential projects having more than 100 dwelling units and where vehicle congestion, adverse terrain conditions or other factors that could limit access, as determined by the fire code official, shall be provided with not less than two approved means of access.
5. 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 property or area to be served, measured in a straight line between accesses.
6. Fire apparatus access roadway grades shall not exceed 10 percent. Intersections and turnarounds shall be as level as possible and have a maximum of 5 percent grade with the exception of crowning for water run-off. Considerations of grades up to 15 percent may be allowed with a proposed alternate in accordance with the provisions of ORS 455.610(5).
7. Fire apparatus access roads shall have an unobstructed driving surface width of not less than 20 feet and an unobstructed vertical clearance of 13 feet 6 inches is to be maintained.
8. When the vertical distance between the grade plane and a building's highest roof surface exceeds 30 feet, approved aerial fire apparatus access roads shall be provided. For purposes of this requirement, the highest roof surface shall be determined by measurements to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater. If buildings are more than 30 feet in height, as measured above, the following requirements apply:
  - a. Aerial fire apparatus access roads shall be provided and have a minimum unobstructed width of 26 feet exclusive of shoulders or parking, in the immediate vicinity of the building or portion thereof that will accommodate aerial operations.
  - b. The aerial fire apparatus access road shall be located not less than 15 feet nor greater than 30 feet from the building and shall be positioned parallel to one entire side of the building.
  - c. The side of the building on which the aerial fire apparatus access road is positioned shall be approved by the fire code official.
  - d. Overhead utility and power lines shall not be located within the aerial fire apparatus access road or between the aerial fire apparatus access road and the building.



9. The inside turning radius and outside turning radius for fire apparatus access roads shall be not less than 28 feet and 48 feet respectively, measured from the same center point.
10. The installation of security gates or barricades across a fire apparatus access road shall comply with the following:
  - a. Minimum unobstructed width shall be 16-feet, or two 12-foot sections with a center post or island.
  - b. Gates or barricades shall be set back a minimum of 30 feet from the intersecting roadway.
  - c. Gates shall be of the swinging or sliding type. Barricades using cables or similar methods may be approved.
  - d. Construction of gates or barricades shall be of materials that allows manual operation by one person.
  - e. Locking devices shall be approved.
  - f. Electric gates shall be equipped with an approved means of emergency operation. A KNOX box or KNOX key switch may be required.
  - g. The security gates or barricades and the emergency operation shall be maintained in an operative condition at all times and replaced when defective.
11. Where fire apparatus roadways are not of sufficient width to accommodate parked vehicles and 20 feet of unobstructed driving surface, "NO PARKING-FIRE LANE" signs shall be placed on one or both sides of the roadway and in turnarounds as needed.
12. Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles.

#### Firefighting Water Supplies

1. The minimum available fire flow for one- and two-family dwellings served by a municipal water supply shall be 1,000 gpm at 20 psi residual provided the fire area of the dwelling(s) does not exceed 3,600 square feet. For dwellings that exceed 3,600 square feet, the required fire-flow shall be determined in accordance with OFC Appendix B, Table B105.1(2).
2. Fire flow testing will be required to determine available fire flow. Testing will be the responsibility of the applicant. Applicant to contact the City of Sandy Public Works for testing information and requirements and notify the Fire Marshal prior to fire flow testing.
3. For one- and two-family dwellings served by a municipal water system, all portions of the dwellings shall be located within 600 feet from a fire hydrant on a fire apparatus access road, as measured in an approved route that is approved by the fire code official.
4. Prior to the start of combustible construction, required fire hydrants shall be operational and accessible.

5. Fire hydrants installed within the Sandy Fire District shall comply with the following requirements:
  - a. Flow requirements and location of fire hydrants will be reviewed and approved by Sandy Fire upon building permit submittal.
  - b. **Each new fire hydrant installed shall be ordered in an OSHA safety red finish and have a 4-inch non-threaded metal faced hydrant connection with cap installed on the steamer port.** If a new building, structure, or dwelling is already served by an existing hydrant, the existing hydrant shall also be OSHA safety red and have a 4-inch non-threaded metal faced hydrant connection with cap installed.
6. The minimum number and distribution of fire hydrants shall be in accordance with City of Sandy requirements and OFC Appendix C.

**NOTE:**

Sandy Fire District comments may not be all inclusive based on information provided. A more detailed review may be needed for future development to proceed.

**Please do not hesitate to contact Fire Marshal Gary Boyles at 503-891-7042 or [fmboyles.sandyfire@gmail.com](mailto:fmboyles.sandyfire@gmail.com) should you have any questions or concerns.**



## EXHIBIT O

DATE: June 14, 2022  
REQUEST: Bornstedt Views Transportation Review  
FILE NO: 21-021 SUB/VAR/TREE/HD  
REVIEWER: Carl Springer, PE, DKS Associates

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DKS Associates has reviewed the traffic impact study<sup>1</sup> and site plan for the Bornstedt Views development. The proposed application would accommodate up to a 43-lot Type III subdivision of new single-family or duplex homes, located east of SE Bornstedt Road near the Maple Street intersection. The general comments and listing of recommended conditions of approval are based on a review of the impact study and site plan.

### DEVELOPMENT TRANSPORTATION IMPACT REVIEW

Key comments and issues related to the proposed development's transportation impact analysis include:

- The proposed project would construct up to 43 detached single-family or duplex dwellings.
- Site access will be provided via a new roadway connection onto SE Bornstedt Road opposite the existing Maple Street intersection, and through an extension of Averill Parkway from the north into the site.
- Depending on the mix of housing types, the proposed project would result in additional vehicle trips. To consider the highest trip increase, all lots would be developed as duplex dwelling units resulting in an additional 41 AM peak hour, 49 PM peak hour trips and 620 weekday trips.
- The trip distribution estimate for the proposed project is that 85% of the trips would travel on US 26, 15% on Dubarko Road and the remaining 10% to the south on Highway 211.
- An annual linear growth rate of 2.0 to 2.13 percent was applied to 2021 traffic count data to forecast 2024 background volumes. Background trip growth for several nearby approved developments was included in the background volumes. Trips generated by the proposed project were added to forecast 2024 total traffic volumes.
- Two of the three study intersections would operate at an acceptable level of service during the 2024 AM and PM peak hours with the addition of vehicle trips from the proposed project.

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<sup>1</sup> Bornstedt Views Traffic Impact Study, Ard Engineering, May 20, 2022

However, the Highway 211/Dubarko Road intersection would not meet the performance targets and requires mitigation.

- An evaluation of traffic signal warrants at the Highway 211/Dubarko Road intersection showed the warrants would not be met based on traffic volumes under any analysis scenario. However, based on the crash history at this location, the existing two-way traffic control was recommended to be upgraded to all-way stop control.
- No unusual crash history was identified at the remaining study intersections based on review of the last 5 years of available ODOT crash history database.
- A sight distance evaluation at SE Bornstedt Road/Maple Street (site access) intersection found the minimum intersection sight distance standards will be met to the north and south of the intersection once the existing vegetation and embankment north of the proposed access is removed during site development.
- The street extension to Averill Parkway with full site development is expected to have less than 350 daily volumes, which is well below the maximum allowed of 1,000 vehicles for local streets according to the city's development code.

## DEVELOPMENT SITE PLAN REVIEW

Key comments and issues related to the proposed development's site plan include:

- The new roadway connection onto SE Bornstedt Road should be constructed directly opposite to Maple Street and controlled by a stop sign.

## RECOMMENDED CONDITIONS OF APPROVAL

The following conditions of approval are recommended based on a review of the traffic impact study and site plan:

- The development shall pay transportation system development fees based on the estimated new vehicle trips generated by the development.
- Minimum AASHTO sight distance requirements shall be met at the site access. The proposed Maple Street approach at SE Bornstedt Road shall be constructed to provide a minimum of 500 feet of intersection sight distance based on the 45 mile per hour posted speed on SE Bornstedt Road. Vegetation and grading shall be cut back, as required, to provide adequate sight distance. The available sight distance shall be reevaluated by the applicant and approved by the City engineer prior to final site plan approval.



Staff Report  
City of Sandy  
39250 Pioneer Blvd.,  
Sandy, OR 97055

## EXHIBIT P

To: Planning Commission

Date: September 20, 2021

From: Sarah Richardson, Staff Liaison Parks and Trails Advisory Board

Subject: Bornstedt Views Proposed Development

Attachments: None

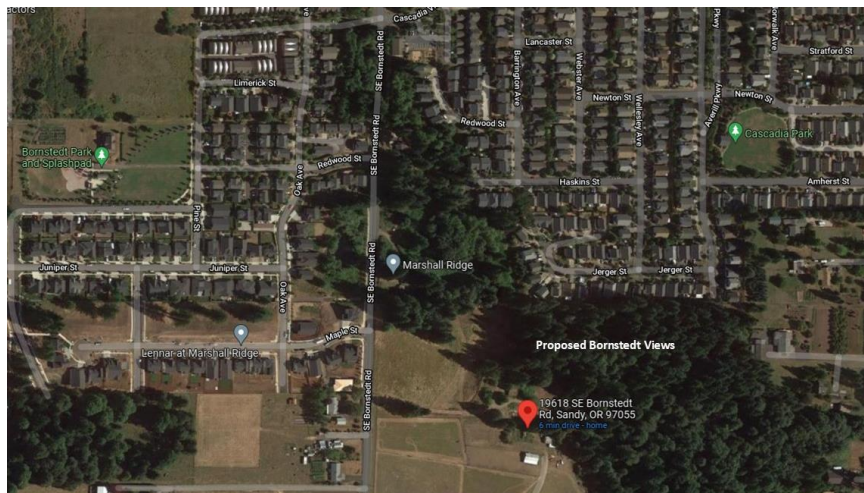
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I am sending this communication on behalf of the Sandy Parks and Trails Advisory Board.

The board met on August 11<sup>th</sup>, 2021 and reviewed the proposed development Bornstedt Views.

The property is located close to two existing neighborhood parks, approximately .3 miles from Bornstedt Park and .7 miles from Cascadia Park.

*The current Parks and Trails Master Plan (i.e. the 1997 Parks Master Plan) states that “Neighborhood parks...serve a radius of approximately ½ mile...and eighty percent of all dwellings shall be located within one quarter mile of a Neighborhood Park”.*



**Recommendation:** The Parks and Trails Advisory Board recommends Fee in Lieu of Parkland Dedication given the size of the development, and its proximity to both Bornstedt Park and Cascadia Park.

We thank you for your consideration in this matter.

**Staff Contact:**

Sarah Richardson

503-489-2150

srichardson@cityofsandy.com



**To: Planning Commission**

**Date: June 9, 2022**

**From: The Parks & trails Advisory Board**

**Subject: Bornstedt Views**

**Attachments: None**

I am sending this communication on behalf of the Parks & Trails Advisory Board.

The board met on June 8, 2022 and reviewed the updated proposed development Bornstedt Views.

The Parks & Trails Advisory Board's previous recommendation of Fee in Lieu of parkland dedication still stands. An official recommendation was not possible due to a lack of a quorum.

Thank you for your consideration of this matter.

**Staff Contact:**

Rochelle Anderholm-Parsch

503-489-2157

[randersholmparsch@ci.sandy.or.us](mailto:randersholmparsch@ci.sandy.or.us)



Response Page

## EXHIBIT Q

Department of State Lands (DSL) WN#\*

WN2021-1314

### Responsible Jurisdiction

**Staff Contact**

Emily Meharg

**Jurisdiction Type**

City

**Municipality**

Sandy

**Local case file #**

21-021

**County**

Clackamas

### Activity Location

**Township**

02S

**Range**

04E

**Section**

24

**QQ section**

C

**Tax Lot(s)**

100

Street Address

19618 Bornstedt Rd

Address Line 2

City

Sandy

Postal / Zip Code

State / Province / Region

OR

Country

Clackamas

**Latitude**

45.382104

**Longitude**

-122.264495

### Wetland/Waterway/Other Water Features



There are/may be wetlands, waterways or other water features on the property that are subject to the State Removal-Fill Law based upon a review of wetland maps, the county soil survey and other available information.

The National Wetlands Inventory shows wetland, waterway or other water features on the property

### Your Activity



It appears that the proposed project **may** impact wetlands and **may** require a State permit.



- An onsite inspection by a qualified wetland consultant is recommended prior to site development to determine if the site has wetlands or other waters that may be regulated. The determination or delineation report should be submitted to DSL for review and approval. Approved maps will have a DSL stamp with approval date and expiration date.

## Applicable Oregon Removal-Fill Permit Requirement(s)

- A state permit is required for 50 cubic yards or more of fill removal or other ground alteration in wetlands, below ordinary high water of waterways, within other waters of the state, or below highest measured tide.

## Closing Information

### Additional Comments

Based on a review of the available information, there may be jurisdictional wetlands or waters onsite. A wetland delineation of the entire property by a qualified wetland consultant is recommended prior to development. The report should be submitted to DSL for review and concurrence. The wetland delineation report must meet the technical requirements in OAR 141-090-0030 as well as the minimum standards and requirements in OAR 141-090-0035 (1-17).

The report prepared by Castle Rose Consulting has not been submitted to the Department for review and concurrence. This report does not meet our standards for a delineation report and the conclusions of this report have not been confirmed by DSL. Additionally, for determination of ephemeral streams, the stream should be evaluated after a precipitation event and after a period of no precipitation to determine if the flow persists. Wetlands may be present outside and adjacent to a defined stream channel.

**This is a preliminary jurisdictional determination and is advisory only.**

This report is for the State Removal-Fill law only. City or County permits may be required for the proposed activity.

- A Federal permit may be required by The Army Corps of Engineers: (503)808-4373

### Contact Information

- For information on permitting, use of a state-owned water, wetland determination or delineation report requirements please contact the respective DSL Aquatic Resource, Proprietary or Jurisdiction Coordinator for the site county. The current list is found at: <http://www.oregon.gov/dsl/ww/pages/wwstaff.aspx>
- The current Removal-Fill permit and/or Wetland Delineation report fee schedule is found at: <https://www.oregon.gov/dsl/WW/Documents/Removal-FillFees.pdf>

### Response Date

12/14/2021

### Response by:

Chris Stevenson

### Response Phone:

503-986-5246



Response Page

## EXHIBIT R

Department of State Lands (DSL) WN# \*

WN2022-0560

### Responsible Jurisdiction

**Staff Contact**

Emily Meharg

**Jurisdiction Type**

City

**Municipality**

Sandy

**Local case file #**

21-021 SUB/VAR/TREE/HD

**County**

Clackamas

### Activity Location

Township	Range	Section	QQ section	Tax Lot(s)
02S	04E	24		100

Street Address

19618 Bornstedt Rd

Address Line 2

City

Sandy

State / Province / Region

OR

Postal / Zip Code

97055

Country

Clackamas

**Latitude**

45.384824

**Longitude**

-122.262751

### Wetland/Waterway/Other Water Features

There are/may be wetlands, waterways or other water features on the property that are subject to the State Removal-Fill Law based upon a review of wetland maps, the county soil survey and other available information.

The National Wetlands Inventory shows wetland, waterway or other water features on the property

### Your Activity

It appears that the proposed project **may** impact wetlands and **may** require a State permit.

### Applicable Oregon Removal-Fill Permit Requirement(s)

- A state permit is required for 50 cubic yards or more of fill removal or other ground alteration in wetlands, below ordinary high water of waterways, within other waters of the state, or below highest measured tide.

## Closing Information



### Additional Comments

A stream is mapped on this property. This stream may be jurisdictional for the Department. Wetlands may be associated with this stream.

A wetland delineation has been submitted for this project (WD2022-0290). This delineation identified an ephemeral stream on the property. An ephemeral stream is not jurisdictional. However, an independent review by another consultant for the City of Sandy identified the stream as intermittent and identified potential wetlands on the property. It is likely that a site visit will be needed after reviewing the delineation to resolve the conflicting information.

Based on the conflicting information available on this site, no development activities should be permitted on this site until the delineation has been reviewed and concurred.

For questions on this delineation, please contact Jurisdictional Consultant Daniel Evans at (503) 986-5271.

**This is a preliminary jurisdictional determination and is advisory only.**

This report is for the State Removal-Fill law only. City or County permits may be required for the proposed activity.

- A Federal permit may be required by The Army Corps of Engineers: (503)808-4373

### Contact Information

- For information on permitting, use of a state-owned water, wetland determination or delineation report requirements please contact the respective DSL Aquatic Resource, Proprietary or Jurisdiction Coordinator for the site county. The current list is found at: <http://www.oregon.gov/dsl/ww/pages/wwstaff.aspx>
- The current Removal-Fill permit and/or Wetland Delineation report fee schedule is found at: <https://www.oregon.gov/dsl/WW/Documents/Removal-FillFees.pdf>

### Response Date

6/10/2022

### Response by:

Chris Stevenson

### Response Phone:

503-986-5246

# EXHIBIT S



**Real-World Geotechnical Solutions**  
**Investigation • Design • Construction Support**

June 10, 2022  
Project No. 22-6072

City of Sandy  
39250 Pioneer Boulevard  
Sandy, Oregon 97055  
Phone: (503) 668-0880

**Subject: GEOTECHNICAL THIRD-PARTY REVIEW  
PROPOSED THE BORNSTEDT VIEWS DEVELOPMENT SITE  
TAX LOT NO. 100  
SE BORNSTEDT ROAD AND SE AVERILL PARKWAY  
SANDY, OREGON**

References: Redmond Geotechnical Services, Geotechnical Investigation and Consultation Services, Proposed The Bornstedt View Development Site, Tax Lot No. 100, SE Bornstedt Road and SE Averill Parkway, Sandy (Clackamas County), Oregon, dated May 3, 2021.

Redmond Geotechnical Services, Review of Proposed Civil Engineering Plans, Proposed The Bornstedt View Development Project, Tax Lot No. 100, 19618 SE Bornstedt Road, Sandy (Clackamas County), Oregon, dated April 27, 2022.

As requested, GeoPacific Engineering, Inc., (GeoPacific) is pleased to present the results of a third-party review of the above-reference geotechnical report prepared by Redmond Geotechnical Services (Reference 1). GeoPacific has also been provided with a copy of Redmond Geotechnical's review of the proposed civil engineering plans (Reference 2).

For the purposes of the review, GeoPacific referred to the criteria outlined in the City of Sandy's Code of Ordinances, specifically Chapter 17.56 Hillside Development.

## **EXECUTIVE SUMMARY**

GeoPacific has reviewed the geotechnical report prepared by Redmond Geotechnical Services. The geotechnical report satisfies the criteria listed in 'Appendix C Geotechnical Report Requirements.'

However, there are slopes of 25 to 34.99 percent on lots 19, 21, 25, 26, and 27, and slopes 35 of percent or greater on lots 25 and 27. For site sites with development proposed on slopes of 35 percent or greater, the City of Sandy Code of Ordinances requires a Geological Assessment stamped by a Certified Engineering Geologist. For site sites with development proposed on slopes of 35 percent or greater, the City of Sandy Code of Ordinances requires an Engineering Geology

**Geotechnical Third-Party Review**  
**GeoPacific Project No. 22-6072, 39555 Stefenee Court, Sandy, Oregon**

Report stamped by a Certified Engineering Geologist. These documents are to be prepared and stamped by a Certified Engineering Geologist and have differing report requirements, as detailed in Appendices A and B of the code. The geotechnical report submitted by RSS is not stamped by a Certified Engineering Geologist and does not meet the criteria detailed in Appendices A and B.

The grading plan calls for a cut in Tract A, at the base of a 44 percent slope. Redmond Geotechnical has reviewed the civil plans and stated that they are in conformance with their recommendations and that no changes are needed. Based on this, we assume they are comfortable with the cut at the base of the slope.

As the building official, we assume that the City of Sandy can decide if they want to waive the requirement for a Geological Assessment and/or an Engineering Geology Report. It is our opinion that for this site a geotechnical engineer should be capable of concluding whether or not the proposed development will be hazardous, without the review of a Certified Engineering Geologist. However, the City of Sandy does have the support of the code to require a report stamped by a Certified Engineering Geologist if they desire. Requiring a Geological Assessment and/or an Engineering Geology Report for the site would increase the amount of examination of the site by a professional with specific training and experience in evaluating geologic hazards.

**UNCERTAINTIES AND LIMITATIONS**

Within the limitations of scope, schedule, and budget, GeoPacific executed the scope of services in accordance with generally accepted professional principles and practices in the field of geotechnical engineering at the time the report was prepared. No warranty, expressed or implied, is made.

We appreciate this opportunity to be of service.

Sincerely,

**GEOPACIFIC ENGINEERING, INC.**



Benjamin G. Anderson, P.E.  
Associate Engineer

**MEMORANDUM**

TO: City of Sandy, Planning Department  
FROM: Kenneth Kent, Clackamas County Engineering  
DATE: October 19, 2021  
RE: 21-021 SUB – Bornstedt View Subdivision  
Legal: 24E24C 00100

This office has the following comments pertaining to this proposal:

1. The proposed 44-lot subdivision includes frontage on SE Bornstedt Road, which is a County maintained minor arterial roadway. Based on this, access and improvements along the frontage of the project site on SE Bornstedt Road requires approval by Clackamas County.
2. County standards limit access onto arterial roadways, requiring that access is taken from lower functional classification roads when available. The proposed access with a new roadway, SE Maple Street, opposite the existing SE Maple Street of the west side of SE Bornstedt Road is consistent with county standards.
3. The existing right-of-way width of SE Bornstedt Road includes a one half width of 30 feet from centerline along the project site frontage. The standard width of an urban arterial roadway calls for a total right-of-way width of 70 feet. The applicant will be required to dedicate approximately 5 feet to provide a minimum one half width of 35 feet.
4. The minimum improvements on the SE Bornstedt Road frontage consistent with the Clackamas County Roadway Standards include, but are not limited to, up to an 20-foot wide half-street improvement, 6-inch Curb, 5-foot wide landscape strip, and a 5-foot wide sidewalk.
5. Clackamas County Roadway Standards (Section 240) requires that intersections with County roads provide minimum intersection sight distance based on the travel speed of the roadway. SE Bornstedt Road has a posted speed limit of 45 miles per hour, which requires a minimum of 500 feet of sight distance to the north and south. The applicant will be required to verify minimum sight distance at the time of development and construction of the new intersection if SE Bornstedt Road.

**CONCLUSION**

If the City of Sandy approves the request, the following conditions of approval are recommended. If the applicant is advised to or chooses to modify the proposal in terms of access

location and/or design following the preparation of these comments this office requests an opportunity to review and comment on such changes prior to a decision being made.

1. All frontage improvements in, or adjacent to Clackamas County right-of-way, shall be in compliance with *Clackamas County Roadway Standards*.
2. Prior to commencement of site work and recording of the plat the applicant shall obtain a Development Permit from the Clackamas County Engineering Division for design and construction of required improvements, utility installation and access to SE Bornstedt Road. To obtain the Permit, the applicant shall submit plans prepared and stamped by an Engineer registered in the State of Oregon. **Prior to final plat approval**: all required improvements shall be constructed and inspected, or financially guaranteed in the form of a performance bond when access has met minimum Substantial Completion requirements, per Roadway Standards Section 190. Performance bonds shall be in the amount of 125% of the approved engineer's cost estimate of the required improvements.
3. The applicant shall dedicate approximately 5 feet of public right-of-way along the entire SE Bornstedt Road frontage to provide a minimum 35-foot one half right-of-way width. The right-of-way centerline and width shall be verified by a professional survey to the satisfaction of DTD Engineering and Survey Departments.
4. The applicant shall grant an 8-foot wide public easement for signs, slope and public utilities along the entire SE Bornstedt Road right-of-way frontage.
5. Minimum improvements on the SE Bornstedt Road frontage consistent with *Clackamas County's Roadway Standards* include, but are not limited to, up to a one half-street improvement, including:
  - a. Up to a minimum 20-foot wide, one half-street improvement shall be constructed along the entire site frontage to arterial roadway standards, with a structural section per Clackamas County Roadway Standards Standard Drawing C100.
  - b. The half street improvement design shall include cross sections every 25 feet per Roadway Standards Section 250.7.5. The design shall demonstrate that the new curb line and cross slope to the existing centerline allow for construction of a curb on the opposite side of the road with cross slopes that meet minimum standards.
  - c. Lane transitions shall be provided per Roadway Standards Section 250.6.4 based on a 45 MPH design speed.
  - d. Standard curb, or curb and gutter if curblines slope is less than one percent.
  - e. Adjacent to the curb, a 5-foot landscape strip, including street trees shall be constructed along the entire site frontage.
  - f. A minimum 5-foot wide unobstructed sidewalk shall be constructed along the entire site frontage, per Standard Drawing S960. If the sidewalk does not connect to sidewalk on adjacent property, the end of the sidewalk shall require the construction of a concrete

ramp, adjacent to the end of the sidewalk, providing a transition from the new sidewalk to the edge of the pavement. The ramps shall meet ADA guidelines.

- g. Dual curb ramps shall be constructed per Oregon Standard Drawing (RD 900 Series) at the SE Maple Street intersection with SE Bornstedt Road.
  - h. The intersection SE Maple Street with SE Bornstedt Road shall be constructed at a 90 degree angle, per Section 250.8.2 and 250.8.4 of the Roadway Standards. A minimum 50-foot long landing shall be constructed with an average grade of no more than 5 percent, per Roadway Standards Section 250.7.3.
  - i. Provide minimum intersection sight distance of 500 feet north and south at the SE Maple adequate intersection sight distance per Section 240 of the Clackamas County Roadway Standards. Profile and survey information shall be provide demonstrating adequate intersection sight distance.
  - j. Drainage facilities shall be provided in conformance with Clackamas County Roadway Standards, Chapter 4.
6. A note shall be placed on the plat indicating an access restriction along the SE Bornstedt Road frontage of Lots 1, 2, 3, 4 and 13.





# EXHIBIT U

Emily Meharg <emeharg@ci.sandy.or.us>

## Fwd: Bornstedt Views Subdivision - Transmittal Request for Comments

**Curt McLeod** <cjm@curran-mcleod.com> Tue, Jun 14, 2022 at 5:22 PM  
To: Emily Meharg <emeharg@ci.sandy.or.us>  
Cc: Rebecca Casey <rcasey@ci.sandy.or.us>, Thomas Fisher <tfisher@ci.sandy.or.us>, "Kelly O'Neill Jr." <koneill@ci.sandy.or.us>

Hi Emily,

The new alignment for Bornstedt Views is much improved with the continuation of Maple Street. We only have a few comments for your general consideration. Actual review of public infrastructure improvements will be made when construction plans are submitted for approval. Our general comments include:

- 1: All public infrastructure improvements must comply with the City of Sandy standards and Public Works requirements.
2. Sanitary sewer capacity may be limited when construction plans are submitted. The City is currently expanding the plant capacity and working to secure DEQ approvals for additional development.
3. The alignment of Maple Street does not adequately consider the location of existing facilities east of Averill Parkway. The roadway extension needs to consider how to accommodate the existing improvements.
4. The pedestrian path through Tract A should be designated (not constructed currently) to extend to the north property line for potential extension upon development of the property to the northwest.
5. The stormwater calculations and detention pond sizing need to include the offsite contribution if all flow is discharging into the detention basin. Fencing will be required around the detention pond and access provided for equipment to enter if needed.
6. The steep slope areas should be delineated on the plat to identify developable areas relative to SMC 17.56 and 17.60, or a geotechnical report submitted for slope stability.

A more thorough review is required once the construction plans and details are provided.

Thanks

\*\*\*\*\*

Curt McLeod P.E.  
CURRAN-McLEOD, INC.  
6655 S.W. Hampton Street, Suite 210  
Portland, Oregon 97223  
T: (503) 684-3478  
F: (503) 624-8247  
C: (503) 475-0431  
email: [cjm@curran-mcleod.com](mailto:cjm@curran-mcleod.com)

**EXHIBIT V**

# **CERTIFIED ARBORIST REPORT**

---

**Oregon Tree Care**

PO Box 13068  
Portland, OR 97213

971.230.4003 (office)  
503.905.0605 (fax)



06.14.2022

## City of Sandy

39250 Pioneer Blvd  
Sandy, OR 97055

This report has been prepared to independently conduct a site visit and subsequent inventory and professional opinion for the existing trees located at Bornstedt Views Subdivision.

As the techniques and terminology of the Arboriculture industry are continuously evolving, we have provided some brief descriptions to assist with the review and understanding of this report.

This report was completed, reviewed and approved by the undersigned Certified Arborist and owner of Earth Care Designs, LLC dba Oregon Tree Care.



Damien Carré

Certified Arborist, ISA # PN-6405A

Certified Tree Risk Assessor 1717



TERMINOLOGY

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**Air Spade:** The Air Spade is an attachment added to the terminal end of an air compressor hose. The compressed air is directed into the soil, fracturing the soil and exposing the roots below the soil surface. This method is low-impact.

**Root Protection zone (RPZ):** Portion of the root system that is the minimum necessary to maintain vitality or stability of the tree. Encroachment or damage to the root protection zone will put the tree at risk of failure

**Pruning:** The act of sawing or cutting branches from a living tree generally involves thinning, deadwood removal and weight reduction to improve the overall health of a tree. The species and size/age of the tree will determine the proper amount of reduction and type of cuts performed.

**Tree Topping:** The practice of removing whole tops of trees or large branches and/or trunks from the tops of trees, leaving stubs or lateral branches that are too small to assume the role of a terminal leader. Topping is not a supported practice within the arboriculture industry standards.

**Vigor:** A measure of the increase in plant growth or foliage volume through time after planting.

## SITE REVIEW

Site visit was conducted on June 14, 2022. The site review consisted of a Visual Ground Assessment of the existing trees. Measurements, identification and inventory numbers are included in this report along with a professional opinion. This is a follow up report addressing the 38 trees marked for retention from the original report by Teragon Associates on April 25, 2022.



## SITE MAP

**Please refer to attachment 2 from the original Teragon Report.**

## OREGON TREE CARE INVENTORY

Location: Bornstedt Views Subdivision

Site Visit Date: June 14,2022

Certified Arborist: Damien Carre, ISA # PN-6405A

ID #	Tree Common Name	Tree Scientific Name	Size in Inches (DBH)	Vigor	Comments
38	Douglas Fir	<i>Pseudotsuga menziesii</i>	37	good	50% of the Critical Root Zone(CRZ) is located on adjacent property. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. In addition, 60 % of the canopy overhangs the property line. If the tree was pruned back to the property line, the tree would no longer be a candidate for retention.
39	Douglas Fir	<i>Pseudotsuga menziesii</i>	19	good	No root or tree protection concerns.
44	Douglas Fir	<i>Pseudotsuga menziesii</i>	24	good	30% of the Critical Root Zone is located on the adjacent property. The property line is 6 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. Pruning of the canopy is not a concern.

45	Douglas Fir	<i>Pseudotsuga menziesii</i>	20	good	20% of the Critical Root Zone is located on the adjacent property and the property line is 8 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. Pruning of the canopy is not a concern.
94	Big Leaf Maple	<i>Acer Macrophyllum</i>	18	good	No root or tree protection concerns.
95	Big Leaf Maple	<i>Acer Macrophyllum</i>	8,7,5	good	No root or tree protection concerns.
96	Douglas Fir	<i>Pseudotsuga menziesii</i>	22	good	No root or tree protection concerns.
97	Douglas Fir	<i>Pseudotsuga menziesii</i>	26	good	No root or tree protection concerns.
98	Douglas Fir	<i>Pseudotsuga menziesii</i>	32	good	No root or tree protection concerns.
101	Douglas Fir	<i>Pseudotsuga menziesii</i>	31	good	No root or tree protection concerns.
102	Douglas Fir	<i>Pseudotsuga menziesii</i>	11	good	No root or tree protection concerns.
103	Douglas Fir	<i>Pseudotsuga menziesii</i>	32	good	No root or tree protection concerns.
104	Douglas Fir	<i>Pseudotsuga menziesii</i>	35	good	No root or tree protection concerns.
106	Douglas Fir	<i>Pseudotsuga menziesii</i>	28	good	No root or tree protection concerns.
136	Douglas Fir	<i>Pseudotsuga menziesii</i>	26	good	No root or tree protection concerns.
139	Douglas Fir	<i>Pseudotsuga menziesii</i>	40	good	35% of the Critical Root Zone is located on adjacent property. The property line is located 6 feet from the tree. The property line is within the minimum root protection zone, thus the root



					protection zone located only on the development parcel would not be adequate. Pruning of the canopy is not a concern.
141	Douglas Fir	<i>Pseudotsuga menziesii</i>	32	good	45% of the Critical Root Zone is located on adjacent property. The property line is located 1 foot from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. In addition, 50 % of the canopy overhangs the property line. If the tree was pruned back to the property line, the tree would no longer be a candidate for retention.
142	Douglas Fir	<i>Pseudotsuga menziesii</i>	30	good	45% of the Critical Root Zone is located on adjacent property. The property line is located 1 foot from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. In addition, 50 % of the canopy overhangs the property line. If the tree was pruned back to the property line, the tree would no longer be a candidate for retention.
144	Douglas Fir	<i>Pseudotsuga menziesii</i>	47	good	42% of the Critical Root Zone is located on adjacent property. The property line is

					located 2 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. In addition, 50 % of the canopy overhangs the property line. If the tree was pruned back to the property line, the tree would no longer be a candidate for retention.
297	Douglas Fir	<i>Pseudotsuga menziesii</i>	28	good	20% of the Critical Root Zone is located on adjacent property. The property line is located 13 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. Pruning of the canopy is not a concern.
346	Big Leaf Maple	<i>Acer Macrophyllum</i>	24	good	No root or tree protection concerns.
350	Douglas Fir	<i>Pseudotsuga menziesii</i>	16	good	No root or tree protection concerns.
351	Douglas Fir	<i>Pseudotsuga menziesii</i>	44	good	20% of the Critical Root Zone is located on adjacent property. The property line is located 18 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. Pruning of the canopy is not a concern.

352	Douglas Fir	<i>Pseudotsuga menziesii</i>	27	good	15% of the Critical Root Zone is located on the adjacent property. The property line is located 17 feet from the tree. The root protection zone located only on the development parcel would be adequate to protect this tree. Pruning of the canopy is not a concern.
353	Douglas Fir	<i>Pseudotsuga menziesii</i>	44	good	25% of the Critical Root Zone is located on adjacent property. The property line is located 13 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. Pruning of the canopy is not a concern.
354	Douglas Fir	<i>Pseudotsuga menziesii</i>	45	good	45% of the Critical Root Zone is located on adjacent property. The property line is located 2 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. In addition, 50 % of the canopy overhangs the property line. If the tree was pruned back to the property line, the tree would no longer be a candidate for retention.
366	Douglas Fir	<i>Pseudotsuga menziesii</i>	40	good	20% of the Critical Root Zone is located on the adjacent property. The property line is located

					22 feet from the tree. The root protection zone located only on the development parcel would be adequate to protect this tree. Pruning of the canopy is not a concern.
367	Western Hemlock	<i>Tsuga heterophylla</i>	17	good	No root or tree protection concerns.
371	Douglas Fir	<i>Pseudotsuga menziesii</i>	29	good	2% of the Critical Root Zone is located on the adjacent property. The property line is located 26 feet from the tree. The root protection zone located only on the development parcel would be adequate to protect this tree. Pruning of the canopy is not a concern.
376	Western Hemlock	<i>Tsuga heterophylla</i>	23	good	No root or tree protection concerns.
379	Douglas Fir	<i>Pseudotsuga menziesii</i>	23	good	No root or tree protection concerns.
381	Douglas Fir	<i>Pseudotsuga menziesii</i>	16	Tree failed	Tree failed and is lying flat on the ground. The remaining snag is roughly 8 feet tall.
686	Douglas Fir	<i>Pseudotsuga menziesii</i>	13	good	No root or tree protection concerns.
688	Douglas Fir	<i>Pseudotsuga menziesii</i>	27	good	2% of the Critical Root Zone is located on the adjacent property. The property line is located 25 feet from the tree. The root protection zone located only on the development parcel would be adequate to protect this tree. Pruning of the canopy is not a concern.
691	Douglas Fir	<i>Pseudotsuga menziesii</i>	24	good	10% of the Critical Root Zone is located on the adjacent property. The property line is located

					17 feet from the tree. The root protection zone located only on the development parcel would be adequate to protect this tree. Pruning of the canopy is not a concern.
693	Douglas Fir	<i>Pseudotsuga menziesii</i>	26	good	18% of the Critical Root Zone is located on the adjacent property. The property line is located 14 feet from the tree. The root protection zone located only on the development parcel would be adequate to protect this tree. Pruning of the canopy is not a concern.
694	Douglas Fir	<i>Pseudotsuga menziesii</i>	22	good	35% of the Critical Root Zone is located on adjacent property. The property line is located 5 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate. Pruning of the canopy is not a concern.
695	Red Alder	<i>Alnus Rubra</i>	25	good	30% of the Critical Root Zone is located on adjacent property. The property line is located 9 feet from the tree. The property line is within the minimum root protection zone, thus the root protection zone located only on the development parcel would not be adequate.

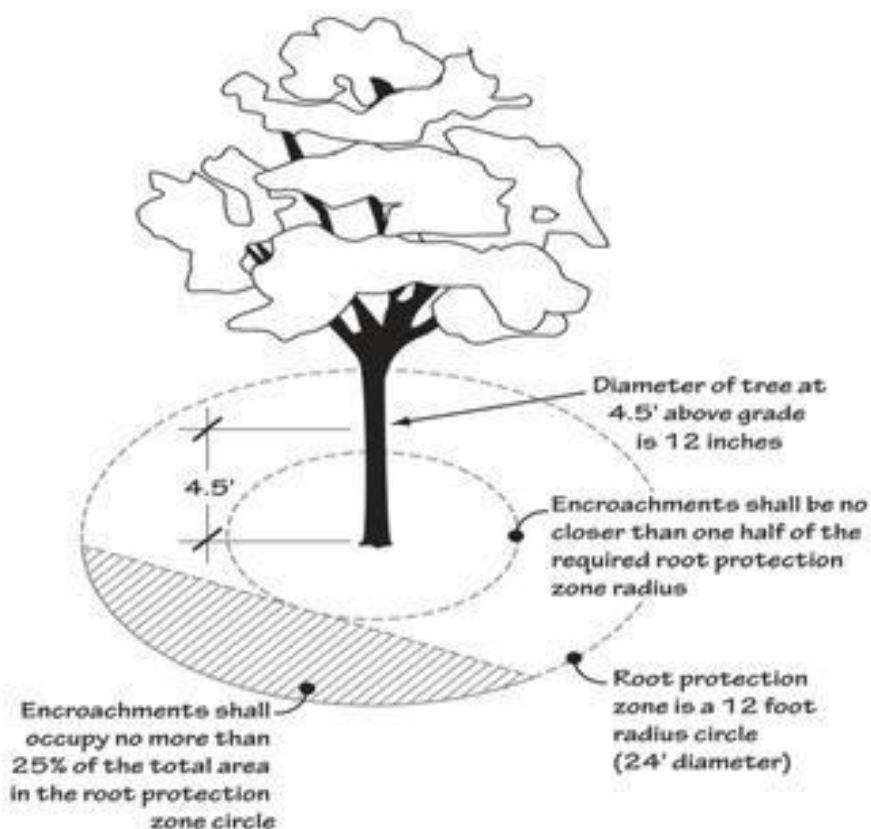
## CONSTRUCTION PHASE TREE PROTECTION

All remaining non-exempt trees over 12" DBH meet the City of Portland Prescriptive Path preservation guidelines with less than 25% encroachment into the RPZ of trees.

The Prescriptive Path method of tree protection establishes a root protection zone (see diagram at right) and blocks this zone from construction activities. The Prescriptive Path calls for the root protection zone to have a 1-foot radius from the center of the trunk per inch of tree diameter. For example, a 12-inch diameter tree would require a 12-foot radius root protection zone.

The root protection fencing must be a minimum of 6-foot high chain link fence secured with 8-foot metal posts, at the edge of the root protection zone.

Existing structures and/or existing secured fencing at least 3.5 feet tall can serve as the required protective fencing. Place the yellow sign marked 'Tree Root Protection Zone' prominently on the fence designating the root protection zone and describing the penalties for violation. Install the fence before any ground-disturbing activities take place, including clearing, grading, or construction. Keep the fence in place until final inspection.



## REMOVING TREES WITHIN THE RPZ OF PROTECTED TREES:

There shall be no Heavy Duty equipment or materials within the RPZ of the tree, unless otherwise specified. Tree removal methods should be done to minimize any impact and or avoid compromising adjacent trees structural integrity and or vigor.

No Heavy Duty equipment or materials within the RPZ of the tree. No excavation of soil shall be done within the trees RPZ without Arborist supervision, demolition should be done by hand to minimize compaction of soil and tree roots.

Recommend Air Spading prior to any excavation. A Certified Arborist must be on site to monitor and/or perform any root pruning that may be deemed necessary.

## AIR SPADING AND ROOT PRUNING:

If, during construction, root pruning is required due to exposed or severed roots, the following process should be followed to prevent further damage. It is highly recommended that a Certified Arborist supervise and/or complete the root pruning. Additionally, pruning of the tree branches may be necessary to help compensate for any root loss.

- Air spading is a less invasive option available
- Do not use an excavator to pull or cut roots
- By hand, dig out and around the exposed or severed root prior to cutting
- Only use tree pruning tools with sharpened blades to provide a clean cut
- Tree pruning to compensate for potential root loss may be recommended before root pruning

### CERTIFIED ARBORIST ON SITE:

It is highly recommended to have a Certified Arborist on site when construction activities could cause root exposure or are within the RPZ of the tree.

### ANNUAL MONITORING:

All preserved trees should be monitored annually for changes and/or signs of stress after construction activities are completed.

**- END -**



## Limits of Assignment

Unless stated otherwise:

- 1) Information contained in this report covers only those trees that were examined and reflects the condition of those trees at the time of inspection; and
- 2) The inspection is limited to visual examination of the subject trees without dissection, probing, or coring unless explicitly specified. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the subject trees may not arise in the future.

## Methods

We used a Visual Tree Assessment (VTA) method to evaluate tree health and structure. VTA is based on the outward indications of tree stress and growth, as indicated by the formation of new tree parts, the shape of the new wood and the amount of live tissue. Trees adapt to current and past stress by growing wood to support themselves in an upright condition. This type of assessment is facilitated by our personal knowledge of tree growth as it relates to structural integrity.

## Assumptions & Limiting Conditions

1. Consultant assumes that any legal description provided to Consultant is correct and that title to property is good and marketable. Consultant assumes no responsibility for legal matters. Consultant assumes all property appraised or evaluated is free and clear, and is under responsible ownership and competent management.
2. Consultant assumes that the property and its use do not violate applicable codes, ordinances, statutes or regulations.
3. Although Consultant has taken care to obtain all information from reliable sources and to verify the data insofar as possible, Consultant does not guarantee and is not responsible for the accuracy of information provided by others.
4. Client may not require Consultant to testify or attend court by reason of any report unless mutually satisfactory contractual arrangements are made, including payment of an additional fee for such Services.

5. Unless otherwise required by law, possession of this report does not imply right of publication or use for any purpose by any person other than the person to whom it is addressed, without the prior express written consent of the Consultant.
6. Unless otherwise required by law, no part of this report shall be conveyed by any person, including the Client, the public through advertising, public relations, news, sales or other media without the Consultant's prior express written consent.
7. This report and any values expressed herein represent the opinion of the Consultant, and the Consultant's fee is in no way contingent upon the reporting of a specific value, a stipulated result, the occurrence of a subsequent event or upon any finding to be reported.
8. Sketches, drawings and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys. The reproduction of any information generated by architects, engineers or other consultants and any sketches, drawings or photographs is for the express purpose of coordination and ease of reference only. Inclusion of such information on any drawings or other documents does not constitute a representation by Consultant as to the sufficiency or accuracy of the information.
9. Unless otherwise agreed, (1) information contained in this report covers only the items examined and reflects the condition of those items at the time of inspection; and (2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, climbing, or coring. Consultant makes no warranty or guarantee, express or implied that the problems or deficiencies of the plans or property in question may not arise in the future.
10. Loss or alteration of any part of this Agreement invalidates the entire report.

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