

**TECHNICAL MEMORANDUM**

August 7, 2018

To:	Mr. Jeff Peterson Toll Brothers, Inc.
From:	Kolten T. Kusters, M.S., PWS Wetland Scientist Raedeke Associates, Inc.
RE:	Delappe Assemblage – Wetland Reconnaissance Memo (RAI Project No. 2018-028-001)

Per your request, Raedeke Associates, Inc. staff conducted a site investigation of the Eisele, Delappe, and Sheehan properties on March 14, 2018 and August 6, 2018. The purpose of our site visit was to delineate any wetlands or streams on site, and to identify the approximate location of any off-site wetlands or streams whose buffers may impact development of the properties. In addition, during our site investigation we investigated for the presence of any regulated Fish and Wildlife Habitat Conservation Areas that may be present within vicinity of the project site.

We caution that the discussion of regulatory implications, which represent our best professional interpretation and analysis, should not be construed the final authority. Additional information may be obtained from agencies with jurisdictional responsibility for, or interest in, the site.

**PROPERTY LOCATION**

The Eisele, Delappe and Sheehan properties collectively total approximately 5.4 acres and consist of King County Tax Parcel Nos. 2625069033, 2625069048, and 2625069090 respectively. The properties are located along NE 18<sup>th</sup> Street near Sammamish in unincorporated King County, Washington. Specifically, the project site is located in Section 26, Township 25 North, Range 6 East, W.M. Parcel maps retrieved on-line from King County depict the property boundaries.

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## **METHODOLOGY**

We based our investigation upon the guidelines of the U. S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent amendments and clarifications provided by the USACE (1991a, 1991b, 1992, 1994), as updated for this area by the regional supplement to the USACE wetland delineation manual for the Western Mountains, Valleys, and Coast Region (USACE 2010). The USACE wetlands manual is required by state law (WAC 173-22-035, as revised) for all local jurisdictions, including King County.

## **BACKGROUND RESEARCH**

Prior to conducting our site visit, we reviewed existing background maps and information for the project site from the U.S.D.A. Natural Resource Conservation Service (NRCS 2018) Web Soil Survey, the U.S. Fish and Wildlife (USFWS 2018) National Wetland Inventory (NWI), and King County (2018) iMap in order to assist in our determination of whether wetlands were present within the property or its vicinity. We also reviewed the Washington Department of Fish and Wildlife (WDFW 2018) Priority Habitat and Species database. In addition, we also reviewed current and historical aerial photographs (Google Earth 2018) to assist in the definition of existing plant communities, drainage patterns, and land use.

None of the background inventories reviewed depicted any wetlands or streams on the project site. The USFWS (2018) NWI and the King County (2018) iMap show a stream approximately 600 feet east of the project site. The NWI also depicts a small palustrine, emergent (PEM) wetland located approximately 500 feet to the east of the project site.

## **RESULTS**

During our March 14, 2018 and August 7, 2018 site investigations we did not identify any wetlands or streams on the project site. The properties are currently developed and contain single-family residential homes with access driveways, paved parking areas, and regularly maintained yard areas with lawns and ornamental plants.

Portions of the project site are forested and consist of an overstory consisting of western arborvitae (*Thuja plicata*, FAC), Douglas-fir (*Pseudotsuga menziesii*, FACU), and maple (*Acer macrophyllum*, FACU) trees. The understory of the forested areas consists of a mixture of shrubs and herbaceous species including, but not limited to, vine maple (*Acer circinatum*, FAC), dull Oregon grape (*Mahonia nervosa*, FACU), salal (*Gaultheria shallon*, FACU), red huckleberry (*Vaccinium parvifolium*, FACU), Indian plum (*Oemleria cerasiformis*, FACU), salmonberry (*Rubus spectabilis*, FAC), California dewberry (*Rubus ursinus*, FACU), and western swordfern (*Polystichum munitum*, FACU) (see Sample Plots 1 and 2, attached).

Soils throughout the project site generally consist of up to 6 inches of very dark brown (10YR 2/2) loams over dark yellowish brown (10YR 4/4) to (10YR 4/6) gravely sandy loams to a depth greater than 20 inches. During our site investigation, soils were moist but not saturated and did not exhibit any indicators of wetland hydrology (e.g. water table or soil saturation) within the upper 20 inches of soil profile. In addition, we did not observe any secondary indicators typically associated with wetlands such as drainage patterns, drift deposits, or water stained leaves (see Sample Plots 1 and 2, attached).

### ***Wildlife***

We did not observe any evidence of nesting within the site or vicinity by hawks, eagles, great blue herons, or other species of concern during our field investigation. Site conditions were generally not suitable for large raptor nesting, as the majority of the trees onsite did not have branching patterns conducive to supporting large stick nests. In addition, the Washington Department of Fish and Wildlife (WDFW 2018) Priority Habitats and Species (PHS) database shows no mapped occurrences of endangered, threatened, sensitive, or other priority species or habitats on the site or vicinity. We did note the presence of woodpecker forage excavations on several trees and snags within the project site, particularly to the west; however, we did not observe any nests or cavities suitable for nesting.

## **LIMITATIONS**

We have prepared this report for the exclusive use of the Toll Brothers, Inc. and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Toll Brothers, Inc.

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The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such agency determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies prior to any detailed site planning or construction activities.

We warrant that the work performed conforms to standards generally accepted in our field, and has been prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

If you have any questions or comments, or wish to discuss this issue further, please contact me at (206) 525-8122 or at [kkosters@raedeke.com](mailto:kkosters@raedeke.com).

#### **LITERATURE CITED**

- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineers Waterways Experiment Station, Vicksburg, Mississippi. 100 pp.
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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). Wakeley, J.S., R.W. Lichvar, and C.V. Noble, eds. May 2010. ERDC/EL TR-10-3. U.S. Army Engineer Research and Development Center, Vicksburg, MS.
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- Washington Department of Fish and Wildlife. 2018. PHS on the web. Available at: <http://wdfw.wa.gov/mapping/phs/> . Accessed March 4, 2018.

# WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Delappe Assemblage City/County: King County Sampling Date: 3/15/2017  
 Applicant/Owner: Toll Brothers, Inc. State: WA Sampling Point: SP 2  
 Investigator(s): Kolten Kusters Section, Township, Range: S26, T25N, R6E, W.M.  
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.625472° Long: -122.011953° Datum: Unknown  
 Soil Map Unit Name: Everett very gravelly sandy loam 8 to 15 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Sample Plot 2 is located in the southeast corner of parcel 2625069048.	

## VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: <u>5 m</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Thuja plicata (Western Arborvitae)</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. <u>Pseudotsuga menziesii (Douglas-fir)</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. _____				
4. _____				
	<u>90</u>	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>3 m</u> )				
1. <u>Acer circinatum (Vine Maple)</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>100</u> x 3 = <u>300</u> FACU species <u>95</u> x 4 = <u>260</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>195</u> (A) <u>560</u> (B)  Prevalence Index = B/A = <u>2.8</u>
2. <u>Mahonia nervosa (Oregon grape)</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. <u>Ilex aquifolium (English holly)</u>	<u>5</u>	<u>N</u>	<u>NI</u>	
4. _____				
5. _____				
	<u>50</u>	= Total Cover		
<u>Herb Stratum</u> (Plot size: <u>1 m</u> )				
1. <u>Polystichum munitum (Pineland Sword Fern)</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants <sup>1</sup> <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	<u>60</u>	= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>3 m</u> )				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____				
	<u>0</u>	= Total Cover		
<u>% Bare Ground in Herb Stratum</u> <u>30</u>				

Remarks:

**SOIL**

Sampling Point: SP 2

<b>Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</b>								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 6	10YR 2/2	100					Sandy Loam	
6 - 18+	10YR 4/6	100					Sandy Loam	