

September 24, 2019

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7431 East Mercer Way, Wetland and Stream Reconnaissance Report

The Watershed Company Reference Number: 190911

Summary

This report has been prepared to present the findings of a wetland and stream reconnaissance study located at 7431 East Mercer Way, in the City of Mercer Island, Washington (parcel #2579500162). In addition to the information and findings presented in this report, the following documents are enclosed:

- Wetland and Stream Reconnaissance Sketch
- Wetland Determination Data Forms

One stream (Stream A) is located on a neighboring property to the south of the subject parcel. It is a Type Np stream and requires a standard buffer of 60 feet. No wetlands were observed within, or potentially encumbering the property. Based on the buffer width, and approximate stream location, the property appears to be unencumbered by wetlands, streams, and their buffers.

Table 1.	Summary	of streams and	l required buffers.

Feature Name	Stream Type	Buffer (ft)
Stream A	Np	60

Study Area

The study area is defined as parcel #2579500162 and is listed by King County as 9,850 square feet in size (see enclosed *Wetland and Stream Reconnaissance Sketch*). Adjacent public or private property was screened from the edge of parcel or nearest publicly accessible land; no private

property was accessed without permission. It is situated within Section 30 of Township 24 North, Range 05 East of the Public Land Survey System.

Methods

Field investigations for the delineation study were conducted on September 23, 2019 by The Watershed Company ecologist Sam Payne.

The study area was evaluated for wetlands using methodology from the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (U.S. Army Corps of Engineers 2010). Presence or absence of wetlands was determined on the basis of an examination of vegetation, soils and hydrology. These parameters were sampled at several locations to determine the presence or absence of wetlands.

Characterization of climatic conditions for precipitation in the Wetland Determination Data Forms were determined using the WETS table methodology (USDA, NRCS 2015). The "Seattle Tacoma Intl AP" station from 1981-2010 was used as a source for precipitation data (http://agacis.rcc-acis.org/). The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present in the study area region.

The study area was evaluated for streams based on the presence or absence of an ordinary high water mark (OHWM) as defined by Section 404 of the Clean Water Act, the Washington Administrative Code (WAC) 220-660-030, and the Revised Code of Washington (RCW) 90.58.030 and guidance documents including *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Anderson 2016) and *A Guide to Ordinate High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (Mersel 2016).

Public-domain information on the subject properties was reviewed for this reconnaissance study. Resources and review findings are presented in Table 2 of the "Environmental Setting" section of this letter.

Environmental Setting

The study area is within in the Cedar-Sammamish Water Resource Inventory Area (WRIA 8). It is located in the southeastern area of Mercer Island, on a hillslope approximately 500 feet from Lake Washington.

The property is developed with a tennis court and fencing, presumably as an amenity to the neighboring house. It appears to have been graded to create a flat terrace for the tennis court.

Reviewed public-domain information for the site is summarized below (Table 2).

Resource	Summary					
USDA NRCS: Web Soil Survey	Kitsap silt loam, 15 to 30 percent slopes					
USFWS: NWI Wetland Mapper	No wetlands					
WDFW: PHS on the Web	No priority species or habitats					
WDFW: SalmonScape	No salmon bearing streams					
WA-DNR: Forest Practices Activity Mapping Tool	No streams					
King County iMap	No streams or wetlands					
City of Mercer Island GIS Portal	Stream shown approximately 90 feet south of subject parcel.					
WETS Climatic Condition	Normal					

Table 2. Summary of online mapping and inventory resources.

Findings

Wetlands

No wetlands were identified on the subject property, or potentially encumbering the subject property. Two wetland determination data points, DP-1 and DP-2 were recorded to document site conditions.

Vegetation on the property compose a non-wetland plant community and include the dominant species: big-leaf maple (*Acer macrophyllum*), western red cedar (*Thuja plicata*), red alder (*Alnus rubra*), western hemlock (*Tsuga heterophylla*), English holly (*Ilex aquifolium*), cherry laurel (*Prunus laurocerasus*), Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*). Additionally, a variety of non-wetland ornamental plants have been installed in landscaped areas.

Soils exhibit a very dark grayish brown (2.5Y 3/2) clay loam surface layer, generally above an olive brown (2.5Y 4/4) sublayer. Some locations near the base of the cut slope contain clay loam soils with a depleted matrix (5Y 5/1) and minimal to absent redoximorphic features. These appear to be subsoils that were exposed during excavation for the tennis court and are very compact. No evidence of wetland hydrology was observed during the site visit.

Streams

One stream, hereafter referred to as Stream A, was identified on the neighboring property to the south. Stream A is approximately two feet in width and confined within a narrow armored channel that conveys streamflow toward Lake Washington, to the east. The average stream gradient from the neighboring property to Lake Washington averages approximately 29% according to topographic data obtained from the Mercer Island GIS Portal. Gradients above 16% generally act as a natural barrier to fish passage, therefore, Stream A would not be considered fish bearing. Based on the amount of streamflow observed during the site visit, Stream A is assumed to be a perennial watercourse. No other streams were observed within, or potentially encumbering the subject property.

Local Regulations

Watercourses are regulated by the City of Mercer Island through the Mercer Island Municipal Code (MIMC) Chapter 19.07.180 (Watercourses). According to the water typing system described in 19.08.180.A, Stream A is classified as a Type Np watercourse because it is perennial and non-fish bearing. Type Np watercourses require a standard buffer of 60 feet (MIMC 19.07.180.C). Additionally, a building setback of 10 feet is required beyond the edges of a watercourse buffer. Based on a review of stream mapping provided by Mercer Island GIS Portal, Stream A appears to be at least 90 feet south of the subject parcel. Therefore, the project appears to be unencumbered by Stream A and associated buffers. Since the stream is located on private property, this statement is limited to the accuracy of stream mapping and topographic data provided by Mercer Island GIS Portal, and a review of open channel segments visable on aerial imagery.

Disclaimer

The information contained in this letter is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria referenced above. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, state and federal regulatory authorities. No other warranty, expressed or implied, is made.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,

Dan Payne

Sam Payne Ecologist

References

- Anderson, P.S. et al. 2016. Determining the Ordinary High Water Mark for Shoreline
 Management Act Compliance in Washington State. (Publication #16-06-029). Olympia,
 WA: Shorelands and Environmental Assistance Program, Washington Department of Ecology.
- Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Mersel, M.K. and Lichvar, R.W. 2014. A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States. ERDC/CRREL TR-14-13.
- 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. Wakely, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 2015.
 National Engineering Handbook, Part 650 Engineering Field Handbook, Chapter 19
 Hydrology Tools for Wetland Identification and Analysis. ed. R. A. Weber. 210-VI-NEH, Amend. 75. Washington, DC.

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Site Photos



Photo 1. Tennis court occupies much of the property area.



Photo 2. Forest stand on the slope uphill from the tennis court, heavily covered in English ivy.

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Photo 3. Steep cut-slope excavated to create the terrace.



Photo 4. Stream A on the neighboring property.



Wetland and Stream Reconnaissance Sketch

Site Address:7431 EastParcel Number:25795001Site Visit Date:Septembe

7431 East Mercer Way 2579500162 September 23, 2019 Prepared for: TWC Reference #: Melissa Yang 190911



Note: Field sketch only. Features approximate and not to scale. Data points are marked with yellow- and black-striped flags.



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

DP - 1

Project/Site: 7431 E Mercer Way, Mercer Islan	nd	City/County: N	Aercer Island / King	g Sampling date: <u>9/23/2019</u>
Applicant/Owner: Melissa Yang			State:	WA Sampling Point: DP-1
Investigator(s): Sam Payne		Section, Township,	Range: <u>S30, T2</u>	24N, R05E
Landform (hillslope, terrace, etc): Terrace		Local relief (concav	e, convex, none):	Concave Slope (%): 0
Subregion (LRR): <u>A</u> Lat: -		Long:		Datum:
Soil Map Unit Name: Kitsap silt loam, 15 to 3	0 percent slopes	NW	I classification:	None
Are climatic / hydrologic conditions on the site ty	pical for this time of	f year? 🛛 Yes 🛛 No	(If no, explain in re	marks.)
Are Vegetation \Box , Soil \Box , or Hydrology \Box signif	icantly disturbed?	Are "Normal Circ	cumstances" prese	nt on the site? $ extsf{X}$ Yes $ extsf{D}$ No
Are Vegetation \Box , Soil \Box , or Hydrology \Box natur	ally problematic?	(If needed, expla	ain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site	map showing sa	ampling point locations,	transects, impor	rtant features, etc.
Hydrophytic Vegetation Present? Ye	es 🗆 No	\boxtimes		
Hydric Soils Present? Ye	es 🗆 No	☑ Is the Sample within a We		Yes 🗌 No 🛛
Wetland Hydrology Present? Ye	es 🗆 No			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5-m diameter) 1.			Indicator Status	Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata:	1 (A) 3 (B)
4	0	= Total Cov	ver	Percent of Dominant Species that are OBL, FACW, or FAC:	33 (A/B)
Sapling/Shrub Stratum (Plot size: 3-m diameter) 1. Rubus armeniacus 2.				Prevalence Index worksheet: Total % Cover of: OBL species FACW species FAC species	Multiply by: x 1 = x 2 = x 3 =
5		Tatal Ca		FACU species	x 4 =
Herb Stratum (Plot size: 1-m diameter)	35	= Total Cov	ver	UPL species Column Totals:	x 5 = (B)
1. Hedera helix	50	Y	FACU		(A) (B)
2. Polystichum munitum	30	Y	FACU	Prevalence Index = B/A =	
3. Ranunculus repens	10	Ν	FAC	Hydrophytic Vegetation	
4. Rubus Ursinus	10	Ν	FACU	1 – Rapid Test for Hydrop	
5				\Box 2 – Dominance Test is > 5	
6				\Box 3 – Prevalence Index is \leq	
7				4 – Morphological Adaptat	
8 9.				data in Remarks or on □ 5 – Wetland Non-Vascular	• • •
				 S – Weiland Non-Vascular Problematic Hydrophytic V 	
10				¹ Indicators of hydric soil and w	0 (1)
11	100	= Total Cov	Vor	present, unless disturbed or pr	
Woody Vine Stratum (Plot size: 3-m diameter) 1.		_		Hydrophytic	
2					s 🗌 No 🖾
% Bare Ground in Herb Stratum: 0	0	= Total Cov	ver	Present?	
Remarks: Paved area excluded from vegetation	n plot.				

SOIL

Profile Des Depth	scription: (Descri Matrix	be to the c	lepth needed t	o document the Redox Fea		confirm the ab	sence of indicators.)	
(inches)	Color (moist)	%	Color (mois		Type ¹	Loc ²	Texture	Remarks
0-6	2.5Y 3/2	100					Clay loam	
6-16	2.5Y 4/4	95	10YR 3/6	5	С	М	Clay loam	
¹ Type: C=C	Concentration, D=	Depletion, F	RM=Reduced M	latrix, CS=Cover	ed or Coated	Sand Grains.	² Loc: PL=Pore Lining,	M=Matrix.
Hydric Soi	I Indicators: (App	licable to	all LRRs, unle	ss otherwise no	oted.)		Indicators for Problem	natic Hydric Soils ³ :
 Histic Black Hydro Deplet Thick Sandy 	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4) ted Below Dark Su Dark Surface (A12 Mucky Mineral (S Gleyed Matrix (S	<u>2)</u> 51)	□ Str □ Loa □ Loa) □ De □ Re □ De	ndy Redox (S5) ipped Matrix (S6) amy Mucky Mine amy Gleyed Matri pleted Matrix (F3 dox Dark Surface pleted Dark Surface dox Depressions	, ral (F1) (exce rix (F2) 3) e (F6) ace (F7)		 2cm Muck (A10) Red Parent Materi Very Shallow Dark Other (Explain in F ³ Indicators of hydrophy wetland hydrology r disturbed or probler 	: Surface (TF12) Remarks) tic vegetation and nust be present, unless
-	Layer (if presen				. (10)			
Type:		.				Hydric soil present?	Yes 🗌] No 🛛
Depth	(inches):					•		
IYDROLO	DGY ydrology Indicato	ors:						
	licators (minimum		uired: check all	that apply)			Secondary Indicators ((2 or more required)
 High V Satura Water Water Sedim Drift D Algal N Iron D Surface Inundation 	e water (A1) Vater Table (A2) ation (A3) Marks (B1) eent Deposits (B2) veposits (B3) Mat or Crust (B4) eposits (B5) ce Soil Cracks (B6 ation Visible on Ae ely Vegetated Cor	rial Imager	y (B7) □ C	Vater-Stained Le 4B) (B9) Salt Crust (B11) Aquatic Invertebra Hydrogen Sulfide Dxidized Rhizospl Presence of Redu Recent Iron Redu Stunted or Stress Dther (explain in 1	ates (B13) Odor (C1) heres along Li uced Iron (C4) iction in Tilled ed Plants (D1	ving Roots (C3)) Soils (C6)	 2, 4A & 4B) Drainage Patter Dry-Season Wa Saturation Visibli Geomorphic Po Shallow Aquitar FAC-Neutral Te 	ter Table (C2) e on Aerial Imagery (C9 sition (D2) d (D3) st (D5) inds (D6) (LRR A)
Field Obse			× /					
Surface Wa	ater Present?	Yes 🗆	No 🛛 D	epth (in):		Wetland Hyd	rology	
Water Tabl Saturation		Yes □ Yes □		epth (in): epth (in):		Present		
(includes ca	apillary fringe)							
Describe R	ecorded Data (stre	eam gauge	, monitoring we	II, aerial photos,	previous insp	ections), if availa	able:	
Remarks:								



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

DP - 2

Project/Site: 7431 E Mercer Way, Mercer Island	City/County: Mercer Island / King Sampling date: 9/23/2019
Applicant/Owner: Melissa Yang	State: WA Sampling Point: DP-2
Investigator(s): Sam Payne Se	ection, Township, Range: S30, T24N, R05E
Landform (hillslope, terrace, etc): Terrace Lo	ocal relief (concave, convex, none): <u>Concave</u> Slope (%): <u>0</u>
Subregion (LRR): A Lat: - Long:	Datum:
Soil Map Unit Name: Kitsap silt loam, 15 to 30 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 \Box , Soil \Box , or Hydrology \Box significantly disturbed?	Are "Normal Circumstances" present on the site? \boxtimes Yes \Box No
Are Vegetation \Box , Soil \Box , or Hydrology \Box naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sampling	point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes 🗆 No 🖂	
Hydric Soils Present? Yes 🛛 No 🗆	Is the Sampled Area
Wetland Hydrology Present? Yes No No	
Remarks: Data point located at the base of slope.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: 5-m diameter) 1. 2.	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant	1
3	0	= Total Co		Species Across all Strata: Percent of Dominant Species	(B)
<u>Sapling/Shrub Stratum</u> (Plot size: 3-m diameter) 1. <u>Rubus armeniacus</u> 2.	70	Y		that are OBL, FACW, or FAC: Prevalence Index worksheet Total % Cover of: OBL species	t: <u>Multiply by:</u>
3				FACW species	x 1 = x 2 = x 3 = x 4 =
5 Herb Stratum (Plot size: 1-m diameter)	70	= Total Co	ver	UPL species Column Totals:	x = x 5 = (A) (B)
Hedera helix Rubus ursinus Delarities	100 10	Y N	FACU FACU	Prevalence Index = B/A =	
3. Polystichum munitum 4.	115	_ = Total Cov	FACU	 Hydrophytic Vegetation 1 - Rapid Test for Hydrop 2 - Dominance Test is > 3 - Prevalence Index is ≤ 4 - Morphological Adapta data in Remarks or or 5 - Wetland Non-Vascula Problematic Hydrophytic ¹Indicators of hydric soil and w present, unless disturbed or p 	ohytic Vegetation 50% 3.0 ¹ ations ¹ (Provide supporting n a separate sheet) ar Plants ¹ Vegetation ¹ (Explain) vetland hydrology must be
2. We are Ground in Herb Stratum: 0		= Total Cov	ver		s 🗌 No 🖾
Remarks:				·	

SOIL

	• •	e to the de	pth need	ed to d			r confirm the a	bse	nce of indicators.)	
Depth	Matrix		<u> </u>		Redox Featu			2	-	
(inches)	Color (moist)	%	Color (n	noist)	%	Type ¹	Loc	<i>;</i> 2	Texture	Remarks
0-10	2.5Y 3/2	100							Silty clay loam	
10-16	5Y 5/1	100							Silty clay loam	
¹ Type: C=C	Concentration, D=De	pletion, RM	/I=Reduce	ed Matri	x, CS=Covered	d or Coated	Sand Grains.	² L	oc: PL=Pore Lining, M=	Matrix.
Hydric Soi	I Indicators: (Appl	icable to al	ll LRRs, u	unless	otherwise not	ed.)		Inc	dicators for Problemat	ic Hydric Soils ³ :
Histos	ol (A1)			Sandy	Redox (S5)				2cm Muck (A10)	
Histic	Epipedon (A2)			Strippe	ed Matrix (S6)				Red Parent Material	(TF2)
Black	Histic (A3)			Loamy	Mucky Minera	l (F1) (exce	pt MLRA 1)		Very Shallow Dark S	urface (TF12)
□ Hvdro	gen Sulfide (A4)				Gleyed Matrix		, ,		Other (Explain in Rer	marks)
	ted Below Dark Sur	face (A11)	\boxtimes		ed Matrix (F3)	()				
	Dark Surface (A12)			•	Dark Surface	(F6)		³ Ir	dicators of hydrophytic	vegetation and
	Mucky Mineral (S1)			ed Dark Surfac	· /			wetland hydrology mu	
	Gleyed Matrix (S4)				Depressions (disturbed or problema	
	Layer (if present)					- /				
Type:	Eager (ii present)	•					Hydric soi		Yes 🛛	No 🗆
							present?			
Depth	(inches):									
Remarks:	Depleted matrix a	appears to b	be in subs	oils exp	posed by excav	ating the sl	ope to level it fo	or a t	ennis court.	
					-	-				

HYDROLOGY

Wetland Hydrology Indicato Primary Indicators (minimum		ie req	uired:	check	all that apply)	:	Seco	ndary Indicators (2 or more required)
 Surface water (A1) High Water Table (A2) 					Water-Stained Leaves (except MLRA 1, 2) & 4B) (B9)	, 4A		Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B)
□ Saturation (A3)					Salt Crust (B11)			Drainage Patterns (B10)
Water Marks (B1)					Aquatic Invertebrates (B13)			Dry-Season Water Table (C2)
□ Sediment Deposits (B2)					Hydrogen Sulfide Odor (C1)			Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)					Oxidized Rhizospheres along Living Roots ((C3)		Geomorphic Position (D2)
□ Algal Mat or Crust (B4)					Presence of Reduced Iron (C4)			Shallow Aquitard (D3)
□ Iron Deposits (B5)					Recent Iron Reduction in Tilled Soils (C6)			FAC-Neutral Test (D5)
	Surface Soil Cracks (B6)							Raised Ant Mounds (D6) (LRR A)
□ Inundation Visible on Aerial Imagery (B7) □ Other (explain in remarks)					Other (explain in remarks)			Frost-Heave Hummocks
Sparsely Vegetated Con-	ave	Surfa	ace (B	8)				
Field Observations:								
Surface Water Present?	es		No	\boxtimes	Depth (in): Wetland	Hydro	loav	
Water Table Present?	es		No	\boxtimes		sent?	logy	Yes 🗌 No 🛛
Saturation Present?	es		No	\boxtimes	Depth (in):			
(includes capillary fringe)								
Describe Recorded Data (stre	am ç	gauge	e, mor	nitoring	well, aerial photos, previous inspections), if a	availab	le:	
Remarks:								