Raedeke Associates, Inc.

Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

TECHNICAL MEMORANDUM

June 25, 2021

To:	Mr. Harvey Kanter 12 Meadow Lane Mercer Island, WA 98040
From:	Kolten T. Kosters, M.S., PWS Wetland Scientist Raedeke Associates, Inc. William Russack, B.S Wetland Technician Raedeke Associates, Inc.
RE:	Kanter Mercer Island – Stream Reconnaissance (RAI Project No. 2021-048-001)

Per your request, Raedeke Associates, Inc. staff conducted a site investigation of the Kanter property on April 28, 2021. The primary purpose of our site visit was to investigate any wetland or streams within the vicinity of the project site. During our site investigation, we also reviewed a known Type F watercourse located south of the site and reviewed the area for any wetlands that may be on or in 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 Kanter Mercer Island project site is an approximately 0.94-acre property located at 12 Meadow Lane in the City of Mercer Island, Washington (Figure 1). The property is identified as King County Tax Parcel No. 252404-9255. This places the project site in a portion of Section 25, Township 24 North, Range 4 East, W.M. Parcel maps retrieved on-line from King County depict the property boundaries.

METHODOLOGY

The ordinary high water mark (OHWM) of streams will be determined using definitions provided by the Washington State Shorelines Management Act of 1971: "that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation." (RCW 90.58.030(2)(b) and WAC173-22-030(6). The OHWM will be delineated using procedures outlined in the 2016 Washington Department of Ecology Shoreline Administrators Manual.

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 the City of Mercer Island.

BACKGROUND RESEARCH

Prior to conducting our site visit, we reviewed existing background maps and information for the project site from the King County (2021) iMap, the Washington Department of Fish and Wildlife (WDFW 2021) Salmonscape mapper, Washington Department of Natural Resources (WDNR 2021) water types map, and the City of Mercer Island (2021a) Information and Geographic Services watercourse inventory in vicinity of the project site. In addition, we also reviewed current and historical aerial photographs (Google Earth 2021) to assist in the definition of existing plant communities, drainage patterns, and land use.

RESULTS OF BACKGROUND REVIEW

The King County (2021) iMap did not show any streams located in the vicinity of the project site (Figure 2). The WDFW 2021 Salmonscape map depicted an intermittent stream course located south of Meadow Lane on the south edge of the project site in a right-of-way (Figure 3). Similarly, the WDNR (2021) water type map showed a fish bearing stream located along the south edge of the project (Figure 4). The City of Mercer Island (2021a) Information and Geographic Services watercourse layer depicted a Type F watercourse in the location of the southern stream (Figure 5).

RESULTS OF SITE INVESTIGATION

Raedeke Associates, Inc visited the project site on April 28th, 2021. The project site contains a single-family home in the western half of the parcel, a guest house in the

southeast corner, and a detached garage in the northeast portion of the project site. The project area also contains gravel parking areas, and a landscaped lawn with ornamental trees and shrubs. The southern edge of the site is a forested slope with a grade greater than 40%. Vegetation on the project site consists of a landscaped lawn area dominated by Kentucky bluegrass (*Poa pratensis*, FAC). The forested slope on the southern portion of the site contains western red cedar (*Thuja plicata*, FAC), bigleaf maple (*Acer macrophyllum*, FACU), Douglas fir (*Pseudotsuga menziesii*, FACU), Indian plum (*Oemlaria cerasiformis*, FACU), snowberry (*Symphoricarpos albus*, FAC), Himalayan blackberry (*Rubus armeniacus*, FAC), English ivy (*Hedera helix*, FACU) and sword fern (*Polystichum munitum*, FACU) (Sample plot 1).

Soils throughout the project site generally consist of up to 9 inches of very dark brown (10YR 2/2) sandy loams over dark yellowish brown (10YR 3/6) sandy loams to a depth greater than 14 inches. During our site investigation, soils did not exhibit any indicators of wetland hydrology (e.g. water table or soil saturation) within the upper portion of the 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.

OFF-SITE STREAM

We confirmed the presence of a naturally occurring watercourse located in a ravine near the south edge of the project site, adjacent to a gravel road in a right-of-way maintained by the City of Mercer Island. The slopes of ravine are very steep (approximately 20-40% grade) and are interrupted by the gravel road. The stream is approximately 3 feet wide with incised banks having an average height of 12 inches. Water depth ranged from 3-to-6 inches, and the stream bed surface consists of large cobbles and gravel substrate. The grade of the stream in this section averages 5% and was flowing at less than 1 cubic foot per second at the time of our April 28th site visit. The vegetation in the stream buffer generally consists of big-leaf maple (*Acer macrophyllum*, FACU) and bitter cherry (*Prunus virginiana*, FACU) with a dense understory of Himalayan blackberry (*Rubus armeniacus*, FACU), and stinging nettle (*Urtica dioicia*, FACU). We did not observe any wetlands along the slope associated with the watercourse within 300 ft of the project site.

The watercourse is mapped by the City of Mercer Island as a Type F and is provided a 120-foot-wide buffer per City of Mercer Island Code (2021b). The OWHM of the stream was not delineated due to its off-site location.

PROPOSED PROJECT

Site plans received from the client on June 15, 2021 (Figure 6) show the proposed renovation of the existing main residence. The proposed project includes the expansion

of an existing daylight basement, mainly by excavating an additional 18-to-24-inches deep in the area of the existing concrete slab. The existing basement will be expanded by 66 square feet by moving the west wall 2 feet westward by 33 feet long. This expansion will occur under an already existing waterproof deck and will not extend beyond the current footprint of the deck.

Approximately 37 square feet of the proposed expansion is within the 120-foot watercourse buffer. However, this expansion is no closer to the watercourse than the existing structure, nor is the addition closer than 75% of the standard 120-foot watercourse buffer. Furthermore, pursuant to Mercer Island Municipal Code Section 19.01.050, a legally non-conforming single-family dwelling may be intentionally altered or enlarged as long as no more than 40% of the length of the existing structures exterior walls are altered. The current proposed expansion does not exceed 40% of the existing structure exterior wall length.

Due to the extent and location of the proposed expansion within the watercourse buffer and per the exemptions stated above, no adverse impacts are expected as a result of project activity. As a result, no mitigation plan is required at this time.

LIMITATIONS

We have prepared this report for the exclusive use of the Mr. Harvey Kanter and his consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Mr. Harvey Kanter.

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 streams, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in streams. 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 wrussack@raedeke.com.

LITERATURE CITED

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FIGURES

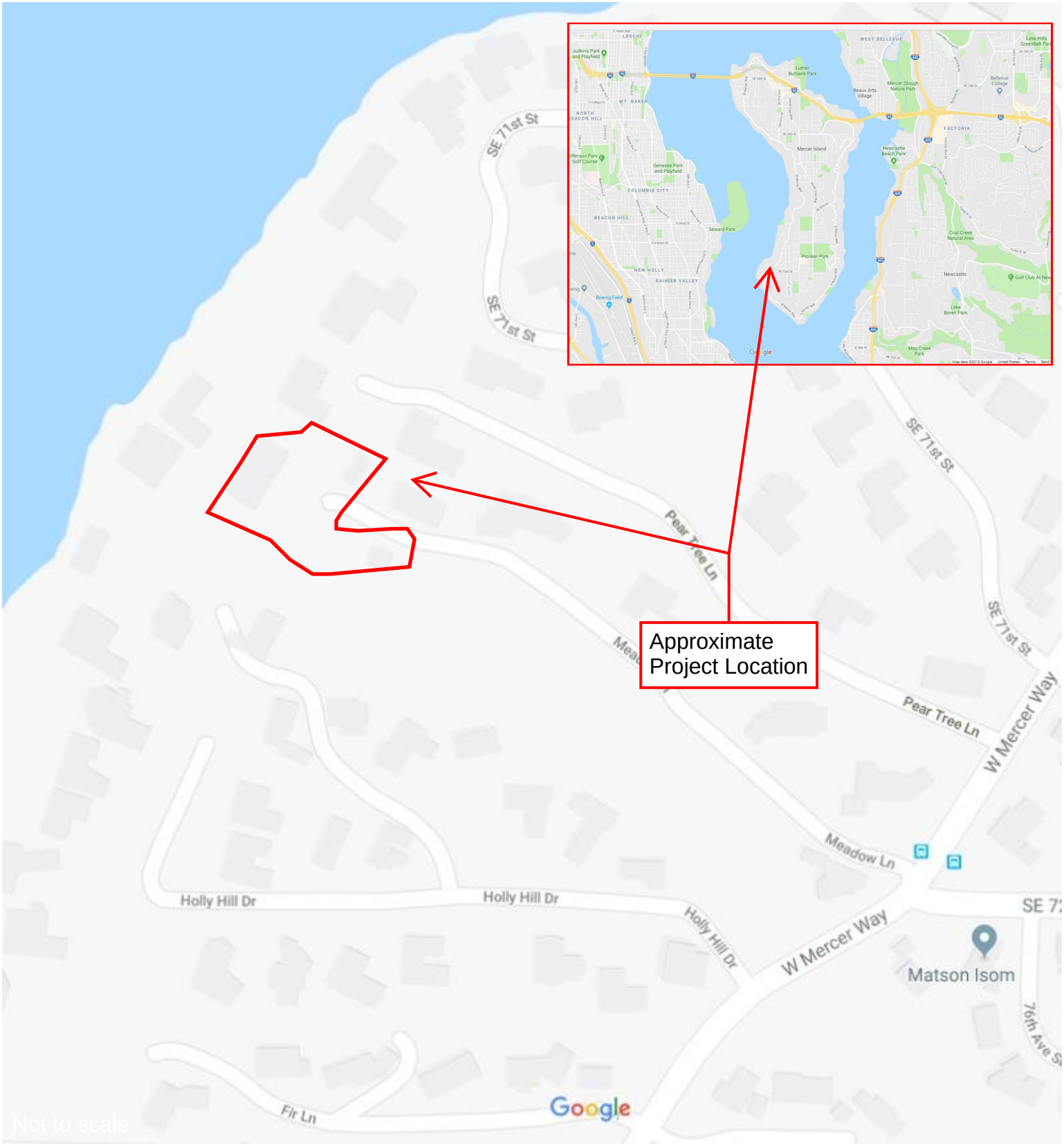

FIGURE 1 - Vicinity Map

Kanter Mercer Island

12 Meadow Lane, Mercer Island WA

RAI PROJECT: 2021-048-001

PREPARED: 06/15/2021

BY: WR

Raedeke Associates, Inc.

2111 N. Northgate Way,
Suite 219 Seattle, WA 98133

LEGEND

Wetland (1990 SAO)

Sensitive area notice on title

Hydrography and Hydrology

Streams

FIGURE 2 - King County iMap

Kanter Mercer Island

12 Meadow Lane, Mercer Island WA

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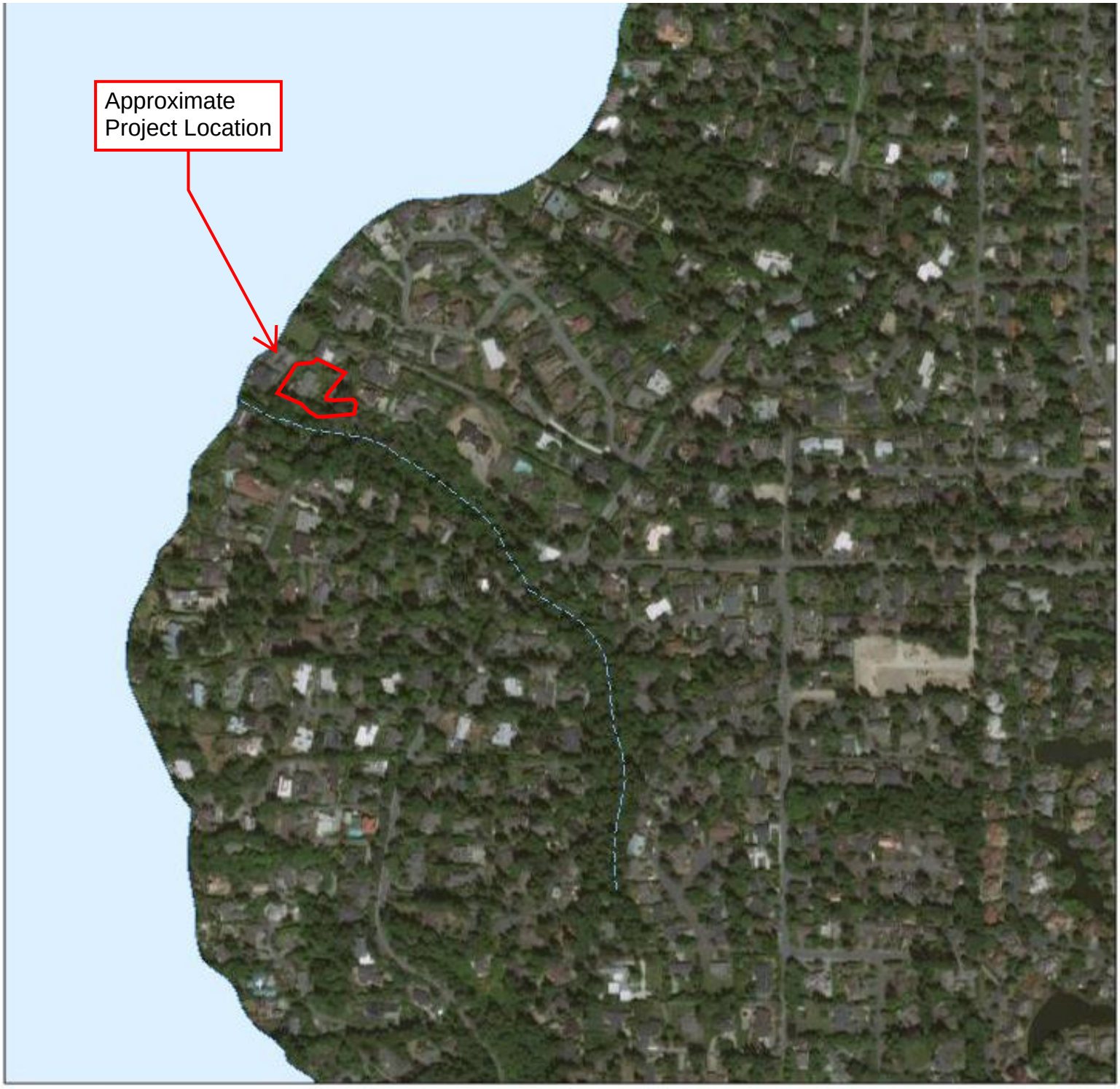

FIGURE 3 - WDFW Salmonscape

Kanter Mercer Island

12 Meadow Lane, Mercer Island WA

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BY: WR

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FIGURE 4 - WDNR Forest Practices Map

Kanter Mercer Island

12 Meadow Lane, Mercer Island WA

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Streams
- Type S
- Type F
- Type N, Np, Ns
- U, unknown
- X, non-typed per WAC 222-16

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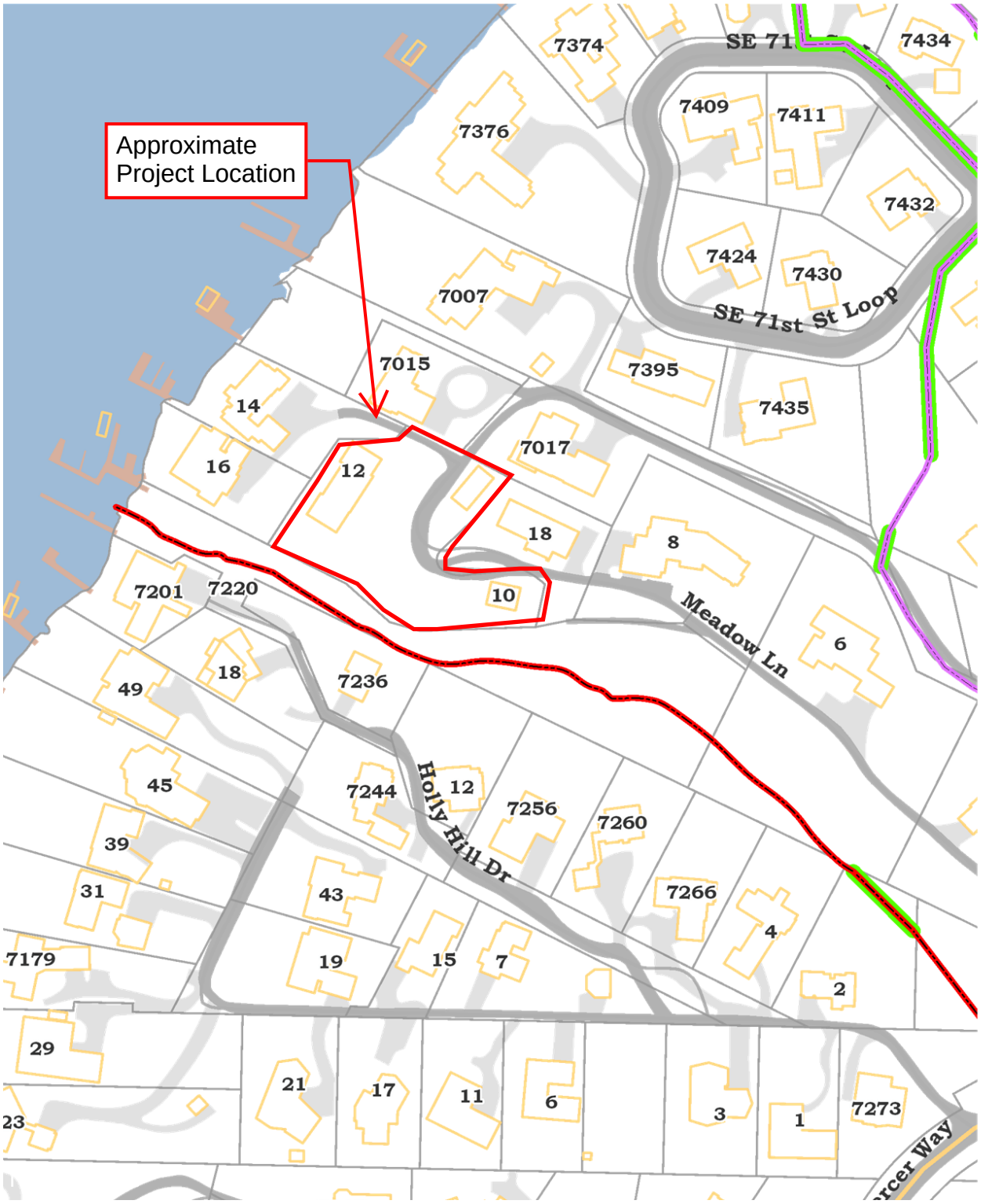
City of Mercer Island



Legend

- Unpiped Watercourse
  - Type "F" = Fish
  - Type "Np" = Non-Fish
  - Type "Ns" = Non-Fish
  - Type "Np" (Unverified)
  - Type "Ns" (Unverifed)
- Piped Watercourse
- Address
- Building
- Property Line
- Docks
- Freeway
- Major Street
- Street
- Paved Driveway
- Paved Road
- Paved Parking Area
- Lake Washington

1:2,077

FIGURE 5 - Mercer Island GIS

Kanter Mercer Island

12 Meadow Lane, Mercer Island WA

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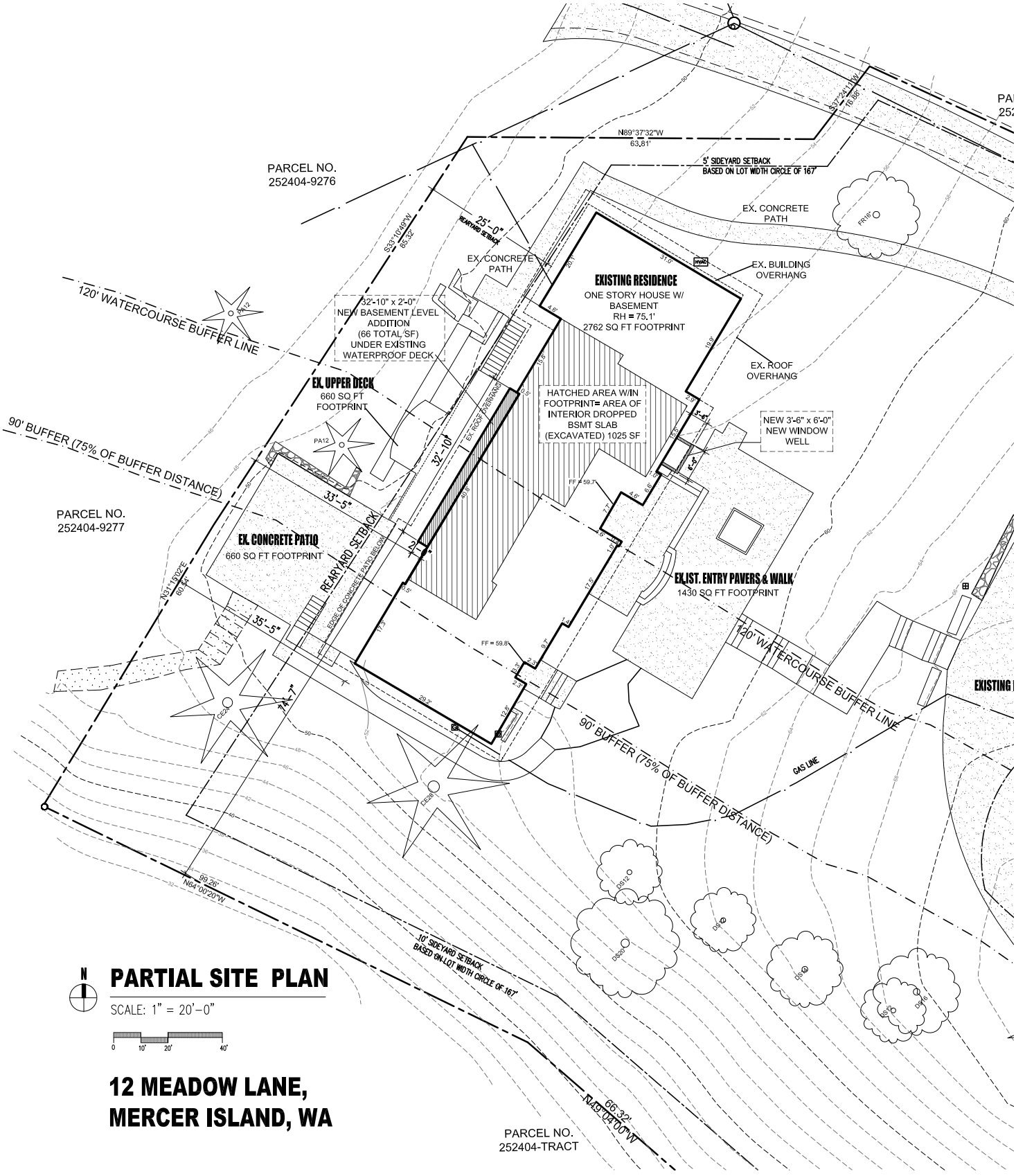

FIGURE 6 - Proposed Site Plan

Kanter Mercer Island

12 Meadow Lane, Mercer Island WA

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FIELD SURVEY DATA

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

Project/Site: Kanter Mercer Island City/County: Mercer Island Sampling Date: 4-28-2021

Applicant/Owner: Harvey Kanter State: WA Sampling Point: SP 1

Investigator(s): Will Russack Section, Township, Range: S25, T24N, R4E, W.M.

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): Covex Slope (%): 5-8

Subregion (LRR): Northwest Forests & Coasts (LRR A) Lat: 47.539970 Long: -122.240142 Datum:

Soil Map Unit Name: Alderwood NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area within a Wetland?** Yes ☐ No ☒

Remarks: SP 1 located southeast of house

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5 m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer macrophyllum (bigleaf maple)	90	yes	FACU
2. Fraxinus latifolia (Oregon ash)	10	no	FACW
3.			
4.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 3 m)			
1. Rosa sp. (ornamental rose)	50	yes	N.L
2. Mahonia aquifolium (tall Oregon grape)	5	no	FACU
3.			
4.			
5.			
	55	= Total Cover	
Herb Stratum (Plot size: 1 m)			
1. Hyacinthoides hispanica (Spanish bluebells)	25	yes	N.L
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25	= Total Cover	
Woody Vine Stratum (Plot size: 3 m)			
1. Hedera helix (English ivy)	30	yes	FACU
2.			
	30	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ 5 - Wetland Non-Vascular Plants[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? **Yes** ☐ **No** ☒

Remarks:

SOIL

Sampling Point: SP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 9	10YR 2/2	100					Sandy Loam	
9-14+	10YR 3/6	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks: no indicators of hydric soils observed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (**LRR A**)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (**LRR A**)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____

Water Table Present? Yes ☐ No ☒ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No indicators of wetland hydrology.