

Critical Areas & Floodplain Habitat Impact Assessment Report

Chase Property

Mercer Island, Washington

12 June 2023



wet.land

PREPARED FOR:
Brad & Judy Chase

PREPARED BY:
Wet.land, LLC
206-309-8100
Wet.land



CONTENTS

1.	REPORT PURPOSE	1
1.1	Project Name and Purpose	1
1.2	Applicant	1
1.3	Report Purpose	1
1.4	Preparer Qualifications	1
2.	PROJECT SITE.....	2
2.1	Project Location	2
2.2	Project Site Description.....	2
3.	EXISTING SITE CONDITIONS	3
3.1	Methodology.....	3
3.2	Database Review Summary.....	3
3.3	Field Investigation Results	4
3.3.1	Wetlands.....	5
3.3.2	Streams.....	5
3.3.3	Native Vegetation.....	5
3.4	Wildlife	5
3.4.1	General Wildlife Usage	5
3.4.2	Federally Listed Species.....	6
3.4.3	State Listed Species	6
3.4.4	Local Species.....	6
4.	REGULATORY REVIEW	7
4.1	Federal Regulations	7
4.2	State Regulations	7
4.2.1	Washington State Department of Ecology (ECY).....	7
4.2.2	Washington State Department of Fish and Wildlife (WDFW)	7
4.3	Local Regulations	7
4.3.1	Shoreline Jurisdiction.....	7
4.3.2	Non-Shoreline Jurisdiction.....	8
4.3.3	Flood Hazard Area.....	8
5.	PROPOSED PROJECT	9
5.1	Proposed Project	9
5.2	Stormwater Management.....	9
6.	CRITICAL AREAS IMPACTS.....	10
6.1	Assessment of Development Impacts.....	10
6.1.1	Stream Buffer Impacts	10
6.1.2	Piped Stream Setback Impacts	11
6.1.3	Listed Species Impacts.....	12
7.	SUMMARY.....	13
8.	REFERENCES.....	14

TABLE OF TABLES

Table 1. Summary of Background Review of Publicly Available Databases (all accessed on 12 May 2023). 4
Table 2. Summary of Critical Areas 5

APPENDICES

- Appendix A:** Jennifer Marriott, PWS – Resume
Kristen Numata, PWS - Resume
- Appendix B:** Figures
- Appendix C:** Supporting Documents and Additional Figures
- Appendix D:** Photodocument
- Appendix E:** City Email

DISCLAIMER

This report has been prepared by Wet.land, LLC based on our best professional judgment, and is intended for the use outlined in Section 1.3 below. Use of this report or its appendices outside of its intended purpose is a breach of the contract under which this document was prepared.

Any delineations, wetland ratings, stream typings, or general characterizations were completed in accordance with the applicable regulations at the time field work was completed. Where information was provided by Others and not collected directly by Wet.land, LLC, such is stated within the report.

Conclusions presented within this report are based on the information available at the time of report preparation, and are accurate and true to the best of our knowledge. The opinions and conclusions contained within this report are a reflection of our interpretation of applicable regulations and are not final until concurrence is provided by the appropriate agencies.

1. Report Purpose

1.1 Project Name and Purpose

The Chase Property is a 1.38-acre parcel (Parcel 7700100205) located on Lake Washington in Mercer Island, Washington. The parcel is developed with a single-family residence, a dock, shoreline rockery, landscaping, a long driveway, and associated infrastructure. The property contains a short segment of Lake Washington shoreline as well as portions of one (1) stream with both open and closed segments occurring onsite. Minor buffer averaging and a request to reduce the piped stream setback are proposed for this Project.

1.2 Applicant

The Applicant for the Chase Project is Brad & Judy Chase.

Brad & Judy Chase, 4525 Forest Ave SE, Mercer Island, WA 98040

Email: bradchase@live.com

1.3 Report Purpose

This report has been prepared to outline the existing conditions of the property and the constraints on the parcel as a result of critical areas.

This parcel is located within the limits of Mercer Island. This report has been prepared in accordance with the requirements of Mercer Island City Code (MICC) Title 19 – *Unified Land Development Code*. This report has also been prepared in light of applicable State and Federal regulations.

1.4 Preparer Qualifications

Field investigations and reporting were completed by Jennifer Marriott, PWS and Kristen Numata, PWS (**Appendix A**).

Jennifer Marriott has a Bachelor's Degree and a Master's Degree in Biology from University of Central Florida, and a second Master's Degree in Soil and Environmental Science from the University of Florida. She has 20 years of experience in wetland delineations and environmental permitting.

Kristen Numata has two Bachelor's Degrees in Biology and Environmental Science from Santa Clara University, and she has over seven years of experience in environmental consulting.

2. Project Site

2.1 Project Location

The Site is a single parcel located at 4525 Forest Ave SE in Mercer Island, Washington (**Figure 1, Appendix B**). The Public Land Survey System location is the SE ¼ of Section 13, Township 24 North, Range 4 East, Willamette Meridian (W.M.). The latitude/longitude for the center of the Site is 47.5648, -122.2315.

2.2 Project Site Description

The Site is developed with a single-family residence, dock, shoreline rockery, landscaping, a parking area near the water, and associated utility infrastructure. A detached shed is located south of the house. The landscaping includes a water feature that was obviously constructed south of the house that is not connected to the stream or lake. The zoning for the property and surrounding properties is R-15. The property is located within the urban residential environment shoreline designation.

The parcel slopes downhill from east to west, with elevations ranging from 10 feet to 12 feet above sea level.

More detail on the existing conditions of these parcels is provided below in **Chapter 3** and in **Table 2**.

3. Existing Site Conditions

In-depth analysis of existing conditions within the Project Site is described below.

3.1 Methodology

Prior to field investigations of the Site, a thorough review of existing publicly available databases was completed to determine what has been previously mapped over the Site. These findings are outlined in Section 3.2 below. During field investigations, the routine approach described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (U.S. Army Corps of Engineers, 2010) was used as a baseline for evaluating the Site for the presence of wetlands. This supplement is in addition to the 1987 Corps of Engineers Wetlands Delineation Manual, which serves as the baseline on which the regional supplements build. Wetlands were rated using the Washington State Wetland Rating System for Western Washington (Hruby 2014). The presence of streams onsite was determined using the methodology described in *Determining the Ordinary High Water Mark on Streams in Washington State* (Olson and Stockdale, 2010).

3.2 Database Review Summary

An in-depth review of Agency database results for this Project Site follows in **Table 1**, below. Databases were reviewed for features on the site and within 300 feet of the site. Copies of database results are provided in **Appendix C**. Databases referenced include:

- Natural Resource Conservation Service (NRCS), Websoils Survey (NRCS)
- US Fish and Wildlife (USFWS), Wetlands Online Mapper (National Wetlands Inventory, NWI) (USFWS)
- Washington State Department of Ecology (ECY) Water Quality Atlas
- Washington State Department of Fish and Wildlife (WDFW) Priority Species and Habitats
- Washington State Department of Natural Resources (WDNR) Forest Practices Application Mapping Tool (FPAMT)
- Statewide Integrated Fish Distribution (SWIFD) Web Map
- Salmonscape
- StreamNet
- Fish Passage Culverts Map
- Google Earth
- Historic Aerials, www.historicaerials.com

Table 1. Summary of Background Review of Publicly Available Databases (all accessed on 12 May 2023).

Database	Agency (Database Manager)	Data Checked
Township, Range, Section Map	WSDOT	SE ¼ of Section 13, Township 24 North, Range 4 East, W.M.
Watershed Boundaries	ArcGIS	HUC 8 (12) – 17110012(0400) WRIA 8 – Cedar-Sammamish Watershed – Cedar River/Lake Washington Drainage Basin – Mercer Island
NRCS Websoils	NRCS	Figure 2 KpB – Kitsap silt loam, 2 – 8% slopes KpD – Kitsap silt loam, 15 – 130% slopes Neither soil map unit are considered hydric.
National Wetlands Inventory	USFWS	Figure 3 L1UBHh (Lake Washington) – lacustrine limnetic unconsolidated bottom permanently flooded diked/impounded
Map Service Center	FEMA	FEMA does not map floodplain on this site.
Washington State Water Quality Atlas	ECY	No 303(d) listed waters or TMDLs mapped on or downstream of the property.
Priority Habitats and Species (PHS)	WDFW	No priority habitats were mapped within 300 feet of this Site.
Forest Practices Application Mapping Tool	WDNR	Lake Washington only mapped feature within study area.
Statewide Integrated Fish Distribution (SWIFD) Web Map	NWIFC	Lake Washington only mapped feature within study area.
Washington State Fish Passage	WDFW	Onsite culverts not mapped by WDFW. No culverts mapped within study area.
Mercer Island Interactive Parcel Viewer	Island County	Figure 5 Steep slopes, erosion and seismic hazards are mapped within study area, as is a single stream that correlates to the onsite stream.

3.3 Field Investigation Results

The Site was evaluated for critical areas on 12 May 2023. A summary of these findings is provided below and on **Figure 6, Appendix B**. A Photodocument is provided as **Appendix D**.

Table 2. Summary of Critical Areas

Critical Area ID	Wetland Category/Stream Typing	Standard Buffer (feet) (MICC 19.07.180/19.13.050)	Feature Type (Cowardin/Flow)
Lake Washington	Shoreline of the State	25 feet (with lot coverage restrictions beyond 25 ft)	Lacustrine
Stream A	Type Ns	60 feet	Seasonal flow
*Piped Stream segments	N/A	No buffer Setback – 45 feet	N/A

3.3.1 Wetlands

No wetlands were identified or observed on or near the Site through a review of aerial imagery and onsite evaluations. No hydrology or soils were identified that would indicate wetland conditions onsite. The lakefront lacks vegetation required for a lake fringe shoreline wetland, and enters deeper water rather quickly.

3.3.2 Streams

One (1) non-fish-bearing seasonally flowing stream was identified on the Site with both open and closed segments occurring onsite. Per the homeowner, the stream regularly goes dry through the summer months, sometimes longer. The ordinary high water mark (OHWM) for this stream for the open segments was consistently less than two (2) feet wide. The gradient of the stream to the lake was calculated to be greater than 16% with culverts making up the steeper sections, and the open channel portions being flatter generally.

Two (2) segments of this stream onsite are piped, including through to the outlet with Lake Washington. There is an isolated section of the lower reach of stream that originates from a system of pipes that are leaking. Previous conversations between the City and the Applicant’s Team discussed this section of stream to be treated as piped.

3.3.3 Native Vegetation

The Site contains a native canopy of big leaf maple, Douglas fir, shore pine, and Western redcedar. The midcanopy and shrub layer is limited onsite, but includes species such as vine maple and western hazelnut. Understory vegetation consists of a mix of grasses, dandelion, curly dock, and clovers, among others, particularly where there are gaps in the canopy. English ivy is prolific onsite, and Himalayan blackberry is sporadically present. The vegetation was consistent with a mesic upland forest. Soils were also consistent with common conifer forest soils in the area with a dark upper horizon above a bright lower horizon.

3.4 Wildlife

General observations on expected and observed wildlife usage is below.

3.4.1 General Wildlife Usage

Common urban wildlife such as small to medium mammals and birds are expected to use the Site, though connectivity for land-based wildlife is poor given the area is surrounded by intense urban development and on an island connected to the mainland only via highway bridges. Opportunities for listed species is very limited given

the dearth of available habitat on the Site. However, Lake Washington occurs adjacent to the Site and is noted for listed salmonids.

3.4.2 Federally Listed Species

No habitat occurs onsite that would support federally listed species. Listed salmonids and salmonid habitat are known to occur within Lake Washington, which is adjacent to the Site.

There is the potential of Bald Eagle flyovers or perching on trees within the Site especially given the proximity of the lake, but no evidence of nesting or roosting was observed, nor are any mapped on or adjacent to the Site. Bald eagles are mapped elsewhere on Mercer Island and regularly use Lake Washington for foraging.

3.4.3 State Listed Species

State priority habitats on the Site include the stream. No priority snags or logs occur on the Site but potentially occur near the Site given the heavy canopy in this area. It is expected that wildlife and state listed species that typically use these habitats have the very low potential to use the Site given the land-based connectivity constraints. No state listed species are known or were observed using the Site.

3.4.4 Local Species

Common urban wildlife are expected to use the Site, though the City of Mercer Island does not have its own list of local species of importance.

4. Regulatory Review

The Site falls under the jurisdiction of the City of Mercer Island, State of Washington, and the US Army Corps of Engineers. A summary of the relevant regulations follows.

4.1 Federal Regulations

Waters of the US, including the lake and stream, occur on or adjacent to the Site and may be subject to applicable Federal regulations. Lake Washington is regulated at the Federal level by Section 10 of the Rivers & Harbors Act, while the stream is regulated by Sections 404 and 401 of the Clean Water Act. The US Army Corps of Engineers (USACE) is responsible for administering compliance with Section 404 via the issuance of Nationwide or Individual Permits for any fill or dredging activities within wetlands under USACE jurisdiction. If no actions are proposed that would directly impact a wetland or stream, then no coordination with the USACE is necessary for Section 404 compliance.

To date the Project does not proposed impacts to Lake Washington or Stream A, thus no coordination with the USACE would be necessary.

4.2 State Regulations

No wetlands occur on the Site that would be subject to applicable State regulations. Lake Washington and Stream A would be subject to state regulations for direct impacts. However, City regulations retaining to wetlands and streams are based on state guidelines and will dictate critical areas protections.

4.2.1 Washington State Department of Ecology (ECY)

Any project that is subject to Section 404 permitting is also required to comply with Section 401 Water Quality Certification, which is administered by the Washington State Department of Ecology (ECY). If no actions are proposed that would directly impact a wetland or stream, then no coordination with the USACE is necessary for Section 404 compliance, which would also include Section 401 compliance.

4.2.2 Washington State Department of Fish and Wildlife (WDFW)

Hydraulic Project Application (HPA) permits are only required where impacts that have the potential to affect the bed and bank of streams or other waterbodies. No HPA will be required for this Project.

4.3 Local Regulations

The Site falls within the City of Mercer Island limits and is subject to the regulations of the Mercer Island City Code (MICC).

4.3.1 Shoreline Jurisdiction

The Site occurs within Shoreline jurisdiction in the Urban Residential shoreline environment and is subject to the regulations of MICC Chapter 19.13 – *Shoreline Master Program*.

4.3.2 Non-Shoreline Jurisdiction

Critical areas on the Site are subject to the regulations of MICC Chapter 19.07 – *Environmental*.

Wetlands

No wetlands were identified on or near the Site that would extend a buffer onto the parcel.

Streams

Stream A flows across the Site from the NE to SW and contains both open and closed segments onsite. The stream flows along the edge of the driveway for most of its open channel segment. The stream was typed as a non-fish-bearing seasonal stream (Ns) that carries a 60-foot standard buffer (MICC 19.07.180.C.1). The piped segments do not have a buffer, but do carry a 45-foot setback from the pipe (MICC 19.07.180.C.6).

Lake Washington

Lake Washington has a 25-foot setback with additional restrictions on impervious surfaces within a zone 25 to 50 feet from the OHWM of the lake.

Building/Structure Setback

The stream buffer requires a 10-foot building setback line to prevent encroachment into the critical areas following construction (MICC 19.07.180.C.7).

4.3.3 Flood Hazard Area

No 100-year floodplains are mapped on or adjacent to the Site.

5. Proposed Project

5.1 Proposed Project

The Project proposes to rebuild the house onsite with parking relocated away from the lakeshore (**Figure 7, Appendix B**). This shift requires a realignment of the lower segment of the driveway to accommodate the necessary road curves. Several retaining walls will be required to support the shifted house and driveway. The realigned driveway, including some of the new retaining walls, will require work within the stream buffer. A reduction of the piped stream setback is also requested to accommodate the new home design.

5.2 Stormwater Management

Stormwater will be upgraded as required by the MICC. A new dispersion trench in the upper limits of the lake buffer is proposed to discharge the site runoff to the lake. Stormwater will meet the City requirements for a single family home.

6. Critical Areas Impacts

6.1 Assessment of Development Impacts

No direct, permanent impacts to any wetlands or streams will result from this Project, though minor buffer modifications and temporary buffer impacts will be necessary for the stream. No work is proposed at or below the OHWM of Lake Washington.

6.1.1 Stream Buffer Impacts

The stream buffer will be impacted in several ways through both permanent and temporary impacts to remove the existing driveway and construct the new driveway alignment. Buffer intrusions, both permanent and temporary, will occur in the outer 25% of the stream buffer except where minor work is required around the existing driveway within the buffer south and east of the house. Buffer averaging is proposed to impact buffer within the outer 25% of the buffer and replace these impacted areas for no net loss of buffer area consistent with MICC 19.07.180.C.4. See below for an explanation.

A total of 760 square feet of buffer impacts are proposed. Permanent buffer impacts total 240 square feet for the new driveway that will need to swing further to the east to access the new garage and parking area. Temporary buffer impacts total 410 square feet for wall construction and grading that will be replanted after construction (see Landscape Plans). Pre-existing buffer impacts of 110 square feet occur where the existing driveway occurs within the buffer that will remain driveway within the buffer post-construction.

Mitigation for these impacts will be provided through restoration of the temporary buffer impacts; restoration of an additional 170 square feet of buffer that is under the existing driveway that will no longer be road with the new driveway alignment; and replacement buffer of 844 square feet to replace buffer reduced as part of this Project.

Buffer averaging is allowed pursuant to MICC 19.07.180.C.4:

4. Buffer averaging. Buffer width averaging shall be allowed provided the following requirements are met:

a. The applicant has demonstrated how impacts will be minimized and that avoidance has been addressed consistent with [section 19.07.100](#), mitigation sequencing;

Impacts have been avoided and minimized to the greatest extent possible and are only required to accommodate the realigned driveway. The realigned driveway is necessary to pull the parking area away from the shoreline to a more accessible location at the northeast corner of the house.

b. The applicant has demonstrated how all proposed impacts have been mitigated consistent with subsection E of this section, mitigation requirements, and will not result in a loss of ecological function;

Mitigation is provided through buffer replacement of in kind areas – the buffer to be impacted and replaced are both forested with native species.

c. The proposed buffer width is not less than 75 percent of the standard buffer width at any point; and

At no point is the buffer width less than 75% of the standard buffer.

d. The total area of the buffer is equal to the area required without averaging.

The Project proposes no net loss of buffer area with a net gain of 254 square feet of buffer area in addition to restoration of temporary buffer impacts.

No mitigation plan is proposed as full buffer replacement is provided to mitigate stream buffer impacts. Restoration plantings of areas that fall within a buffer are provided voluntarily and are beyond what is required by the City to mitigate for stream buffer impacts. These voluntary plantings are included on the Landscape Plans and are not outlined in this critical areas report.

6.1.2 Piped Stream Setback Impacts

The standard piped stream setback is 45 feet. However, this can be reduced to 10 feet on lots greater than 50 feet in width consistent with MICC 19.07.180.C.6.d. The piped stream setback is only proposed to be reduced for the lower piped stream segment at the west end of the property adjacent to the house location. The upper piped segment will retain a standard 45-foot setback.

d. Piped watercourse setback widths shall be reduced to: (i) ten feet on lots with a lot width of 50 feet or more, and (ii) five feet on lots with a width of less than 50 feet, when daylighting is determined by qualified professional(s) to result in one or more of the following outcomes:

i. Increased risk of landslide or other potential hazard that cannot be mitigated;

There is a steep slope immediately uphill of this location through which the pipe travels. The steep slopes in this area make opening this pipe into an open channel difficult. The City’s civil engineering department opined on this stream piped segment and expressed erosion concerns and noted that they would not support daylighting this specific segment of piped stream (Appendix E).

ii. Increased risk of environmental damage (e.g., erosion, diminished water quality) that cannot be mitigated;

See above comment on the City’s civil engineering department’s previous comments on this stream segment.

iii. The inability of a legally established existing lot to meet the vehicular access requirements of this title; or

Not applicable.

iv. The inability of a legally established existing lot to meet the building pad standards in [section 19.09.090](#).

Not applicable.

This piped stream segment at the lower reach is not a viable candidate for daylighting due to its location between a steep slope and the lake shoreline where sufficient land is not available to safely construct an open channel that would not put the lake and adjacent properties at risk from erosion issues that can also increase landslide risks. Increased sediment into the lake would be detrimental to the fish populations, especially of listed species, in the lake.

Based on the above, the setback off the lower piped stream segment is proposed to be reduced to 10 feet from the standard 45 feet.

6.1.3 Listed Species Impacts

The project is not likely to affect any listed species. No work is proposed in-water or along the shoreline. The stream buffer modifications will be fully mitigation for no net loss of area. Stormwater will be managed consistent with City regulations so water quality concerns should be reduced. The project will removed a parking area that occurs near the shoreline that will be a net improvement over the current condition.

7. Summary

The Chase Property is a 1.38-acre parcel located on Lake Washington in Mercer Island, Washington. The parcel is developed with a single-family residence, a dock, shoreline rockery, landscaping, a long driveway, and associated infrastructure. The property contains a short segment of Lake Washington shoreline as well as portions of one (1) stream with both open and closed segments occurring onsite. No wetlands occur on or near the Site.

No in-water work is proposed. Stream buffer modifications are proposed. The project will buffer average a portion of the outer 25% of the stream buffer to accommodate the realigned driveway with replacement provided for no net loss of buffer area. A net increase of buffer area will result. Voluntary plantings are proposed within some areas of the buffer that are provided outside of this critical areas report such that no performance monitoring is proposed over these areas due to the full mitigation through buffer replacement. The lower portion of the piped stream segment setback will be reduced from 45 feet to 10 feet as this reach is not viable for daylighting due to erosion and landslide concerns, as supported by the City's civil engineering department.

This Project will rebuild an existing home and modify the footprint and infrastructure accordingly, including a realigned driveway. All impacts to critical areas are fully mitigated consistent with the MICC.

8. References

1. Anderson, P. S., Meyer, S., Olsen, P., & Stockdale, E. (2016). *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State*. Lacey, WA: Washington Department of Ecology, Shorelines & Environmental Assistance Program.
2. Cowardin, L. M., Carter, V., Golet, F. C., & LaRoe, E. T. (1979). *Classification of Wetlands and Deepwater Habitats of the United States*. Washington, DC: U.S. Department of the Interior, Fish and Wildlife Service.
3. Environmental Laboratory. (1987). "*Corps of Engineers Wetlands Delineation Manual*," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
4. Hruby, T. (2014). *Washington State Wetland Rating System for Western Washington: 2014 Update* (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.
5. Lichvar, R. (2012). The National Wetland Plant List. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory. Retrieved from [http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=\\$N/1012381](http://acwc.sdp.sirsi.net/client/search/asset:asset?t:ac=$N/1012381)
6. Mercer Island City Code (MICC) Chapter 19.07 Environment and Chapter 19.13 Shoreline Master Program (accessed 1 June 2023).
7. U.S. Army Corps of Engineers. (2010, May). *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. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

APPENDIX A

Jennifer Marriott, PWS - Resume

Kristen Numata, PWS - Resume

Jennifer M. Marriott, PWS
8201 164th Avenue Northeast, Suite 200, PMB 141, Redmond, WA 98052
jen@wet.land
Work: 206-309-8100 | Cell: 813-846-1684



QUALIFICATIONS

- 🌿 Master of Science, Soil Science, University of Florida, Gainesville, FL, 2010
- 🌿 Master of Science, Biology (Ecology), University of Central Florida, Orlando, FL, 2003
- 🌿 Bachelor of Science, Biology, University of Central Florida, Orlando, FL, 2001
- 🌿 Professional Wetland Scientist (No. 1891)

FOCUS AND EXPERTISE

- 🌿 Project Management
- 🌿 Project Summaries and Rapid Environmental Due Diligence Reports
- 🌿 Wetland and Stream Delineations/Habitat Evaluation
- 🌿 Wetland (Critical Areas) Permitting
- 🌿 Mitigation Planning
- 🌿 Wetland Functional Assessment
- 🌿 Hydric Soil Determinations
- 🌿 Training and mentoring of Junior staff.

EXPERIENCE

- 🌿 Senior Ecologist/Owner; Wet.land, LLC; March 2020 - Present
- 🌿 Senior Ecologist/Project Manager; Talasaea Consultants, Inc.; June 2015 – March 2020
- 🌿 Senior Project Scientist; BL Companies, Inc.; July 2012 – July 2014
- 🌿 Environmental Scientist 3; RETTEW Associates, Inc.; March 2011 – February 2012
- 🌿 Ecologist; Cardno-ENTRIX, Inc. (formerly known as ENTRIX, Inc., fka Biological Research Associates); July 2003 – March 2011

SKILLS, TRAINING & PROFESSIONAL MEMBERSHIPS

- 🌿 Washington (Coastal Training Program Workshops)
 - Revised Washington State Wetland Rating System, 2014 (April 2015)
 - Using the Credit-Debit Method for Estimating Mitigation Needs (October 2015)
 - Using Field Indicators for Hydric Soils (November 2015)
 - Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats (March 2016)
 - How to Determine the Ordinary High Water Mark (September 2016)
- 🌿 Other Technical Training
 - Soil Workshop, PAPSS, 2011
 - Hydric Soils Workshops, 2004, 2008, 2009
 - FAESS Florida State Certification Short Course, March 12-13, 2009

Kristen Numata, PWS
8201 164th Avenue Northeast, Suite 200, PMB 141, Redmond, WA 98052
kristen@wet.land
Work: 206-309-8100 | Cell: 206-930-4845



QUALIFICATIONS

- Wetland Science and Management Certificate, University of Washington Professional Continuing Education, Seattle, WA, 2016
- Bachelor of Science, Biology, Santa Clara University, Santa Clara, CA, 2014
- Bachelor of Science, Environmental Science, Santa Clara University, Santa Clara, CA, 2014
- Professional Wetland Scientist (No. 3412)
- Certified Erosion and Sediment Control Lead (No. 70592)

FOCUS AND EXPERTISE

- Critical Areas Delineations and Site Assessments
- Wetland Functional Assessment
- Geographic Information Systems
- Critical Area Permitting
- Mitigation Planning and Performance Monitoring
- Environmental Compliance and Construction Oversight

EXPERIENCE

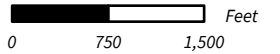
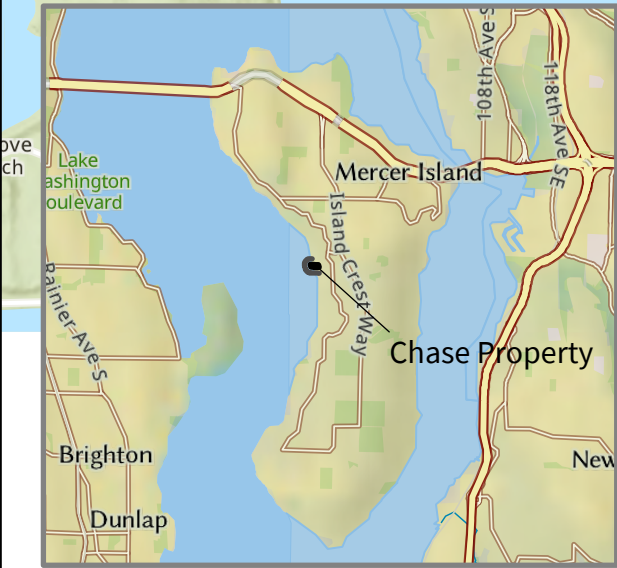
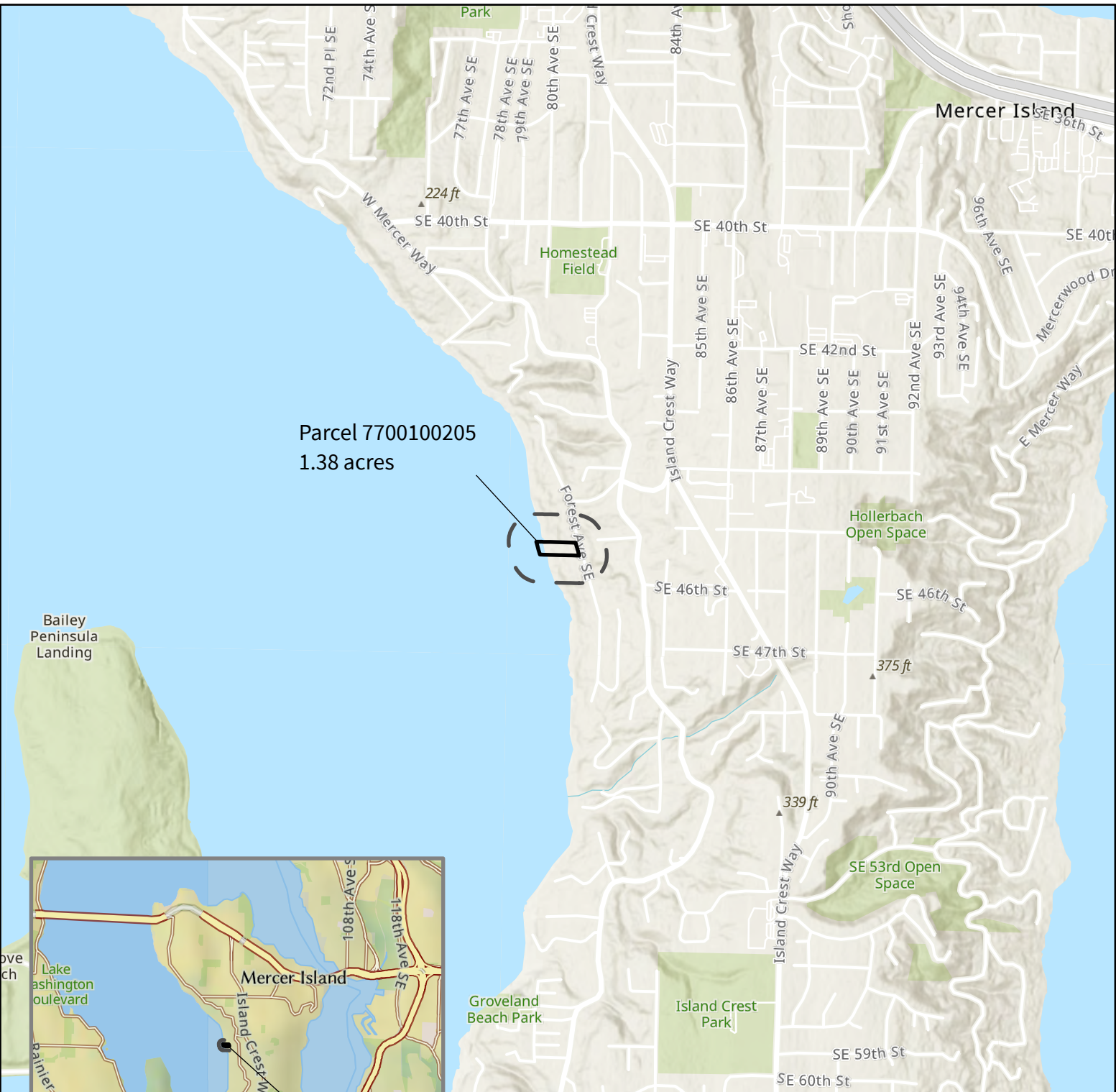
- Ecologist/Owner; Wet.land, LLC; January 2022 – Present
- Project Biologist; PBS Engineering and Environmental, Inc.; July 2019 – December 2021
- Biologist/Environmental Scientist; David Evans and Associates, Inc.; July 2018 – July 2019
- Ecologist; Talasaea Consultants, Inc.; July 2015 – July 2018

SKILLS, TRAINING & PROFESSIONAL MEMBERSHIPS

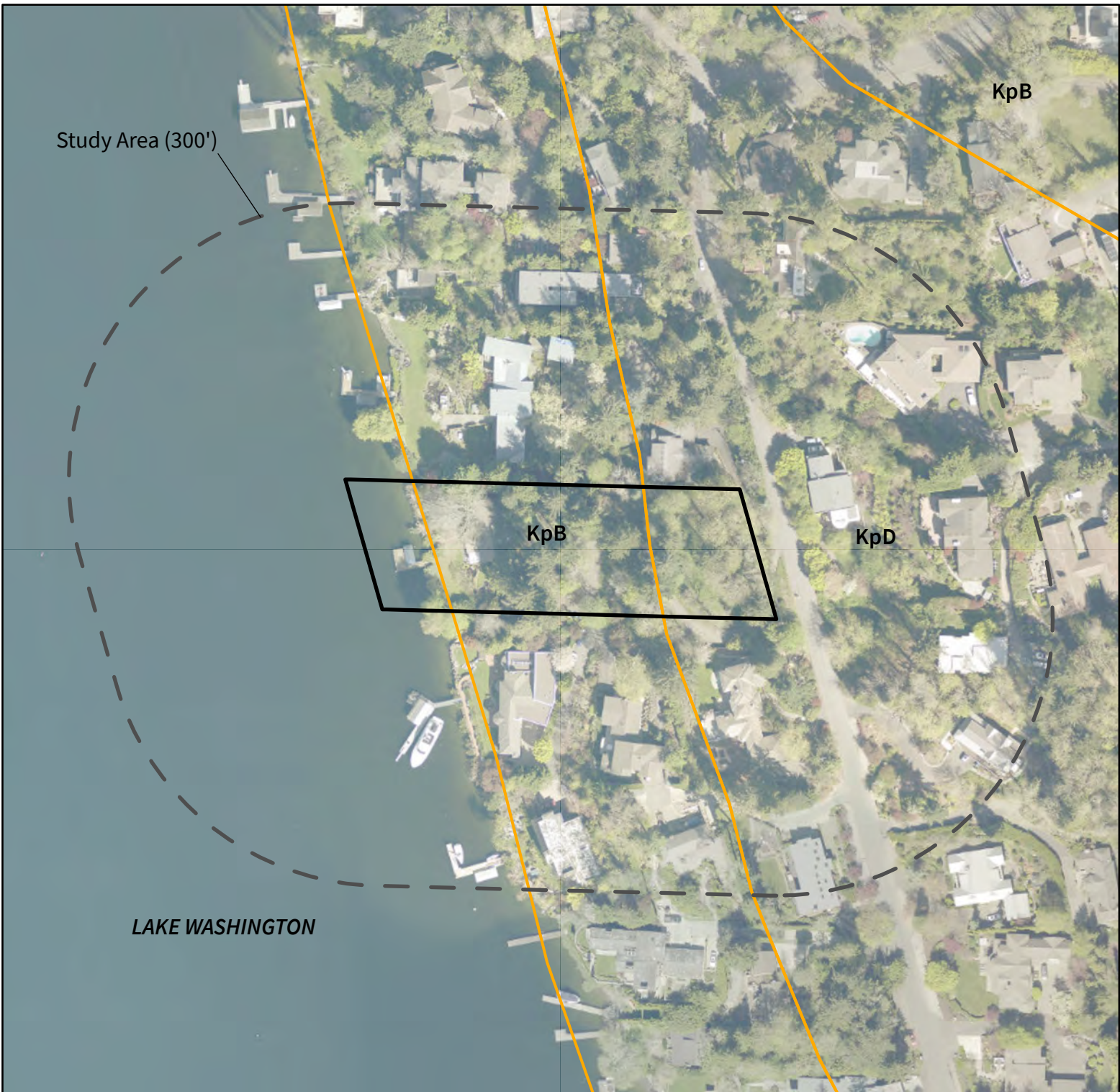
- Washington (Coastal Training Program Workshops)
 - Revised Washington State Wetland Rating System, 2014 (March 2016)
 - Using the Credit-Debit Method for Estimating Mitigation Needs (April 2017)
 - How to Determine Ordinary High Water Mark (June 2017)
 - Grass, Sedge, and Rush Identification for Western WA Puget Lowland Habitats (February 2018)
 - Winter Tree and Shrub Identification for Western WA Puget Lowland Habitats (February 2019)
 - Navigating SEPA (March 2019)
- Other Technical Training
 - Junior Author, Washington State Department of Transportation (WSDOT) Biological Assessment Preparation for Transportation Projects Training (March 2020)
 - Fish Passage: Inventory and Assessment, Washington Department of Fish and Wildlife, (WDFW) (August 2020)
 - Fish Passage: Habitat Survey, WDFW (August 2020)

APPENDIX B




Figures



SOURCE: ESRI TOPOGRAPHY AND HILLSHADE



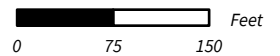
LEGEND

-  Subject Property
-  Study Area (300')
-  Soil Map Units

Soil Map Units Within Study Area

- KpB - Kitsap silt loam, 2 - 8% slopes
- KpD - Kitsap silt loam, 15 - 30% slopes

Neither soil map unit are considered hydric.



SOURCE: KING COUNTY AERIAL 2021, WEB SOIL SURVEY GIS



WEB SOIL SURVEY MAP




Chase Property
 Critical Areas Report
 4525 Forest Avenue SE, Mercer Island, Washington

#0130
 MAY 2023

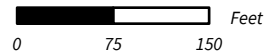
FIGURE 2



LEGEND

-  Subject Property
-  Study Area (300')
-  Lake

National Wetlands Inventory Wetlands Within Study Area
 L1UBHh - lacustrine limnetic unconsolidated bottom
 permanently flooded diked/impounded



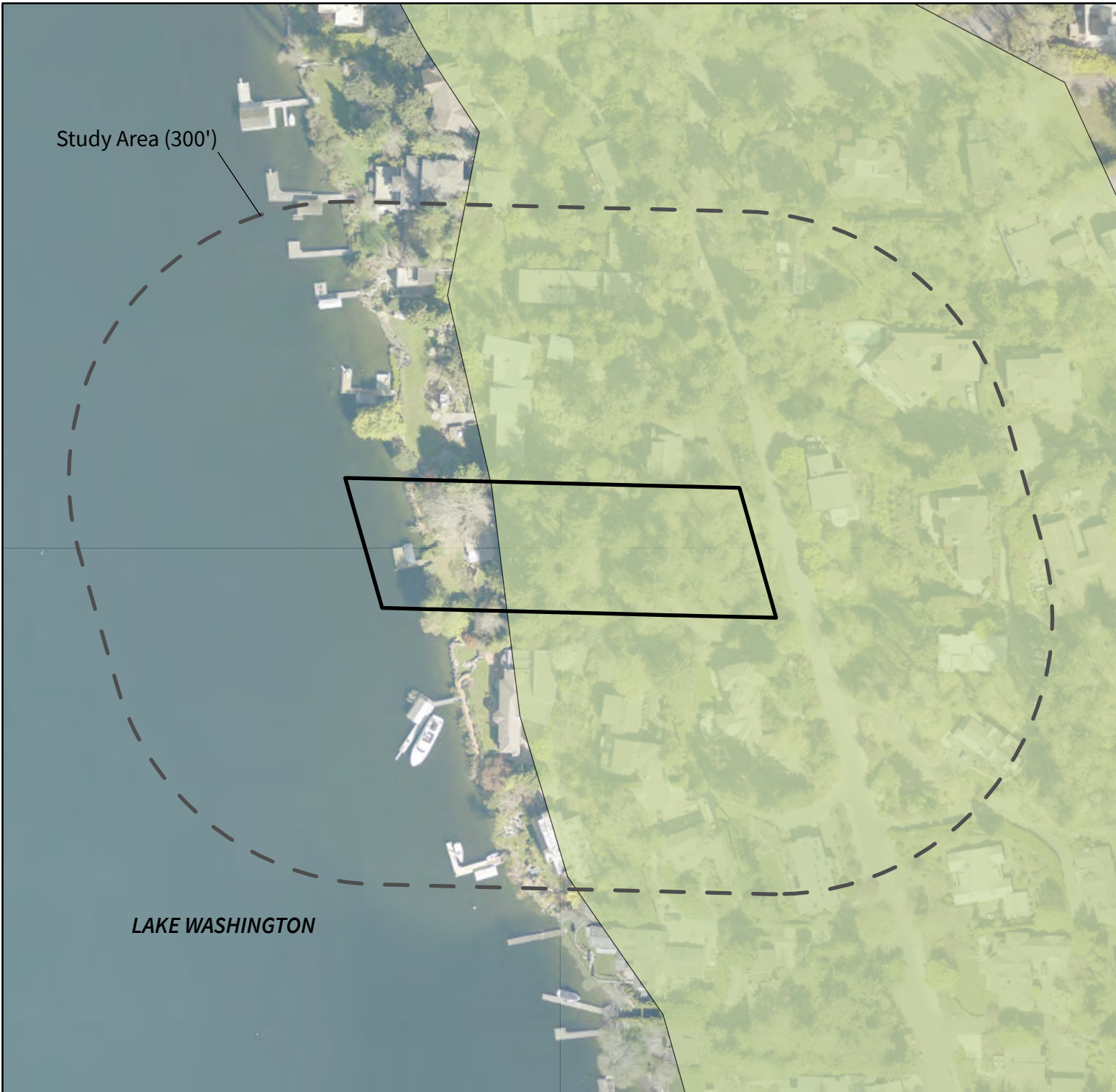
SOURCE: KING COUNTY AERIAL 2021, NATIONAL WETLANDS INVENTORY GIS






NATIONAL WETLANDS INVENTORY MAP
 Chase Property
 Critical Areas Report
 4525 Forest Avenue SE, Mercer Island, Washington

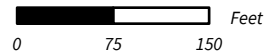
#0130
 MAY 2023

FIGURE 3



LEGEND

-  Subject Property
-  Study Area (300')
-  Erosion Hazard



SOURCE: KING COUNTY AERIAL 2021, KING COUNTY GIS

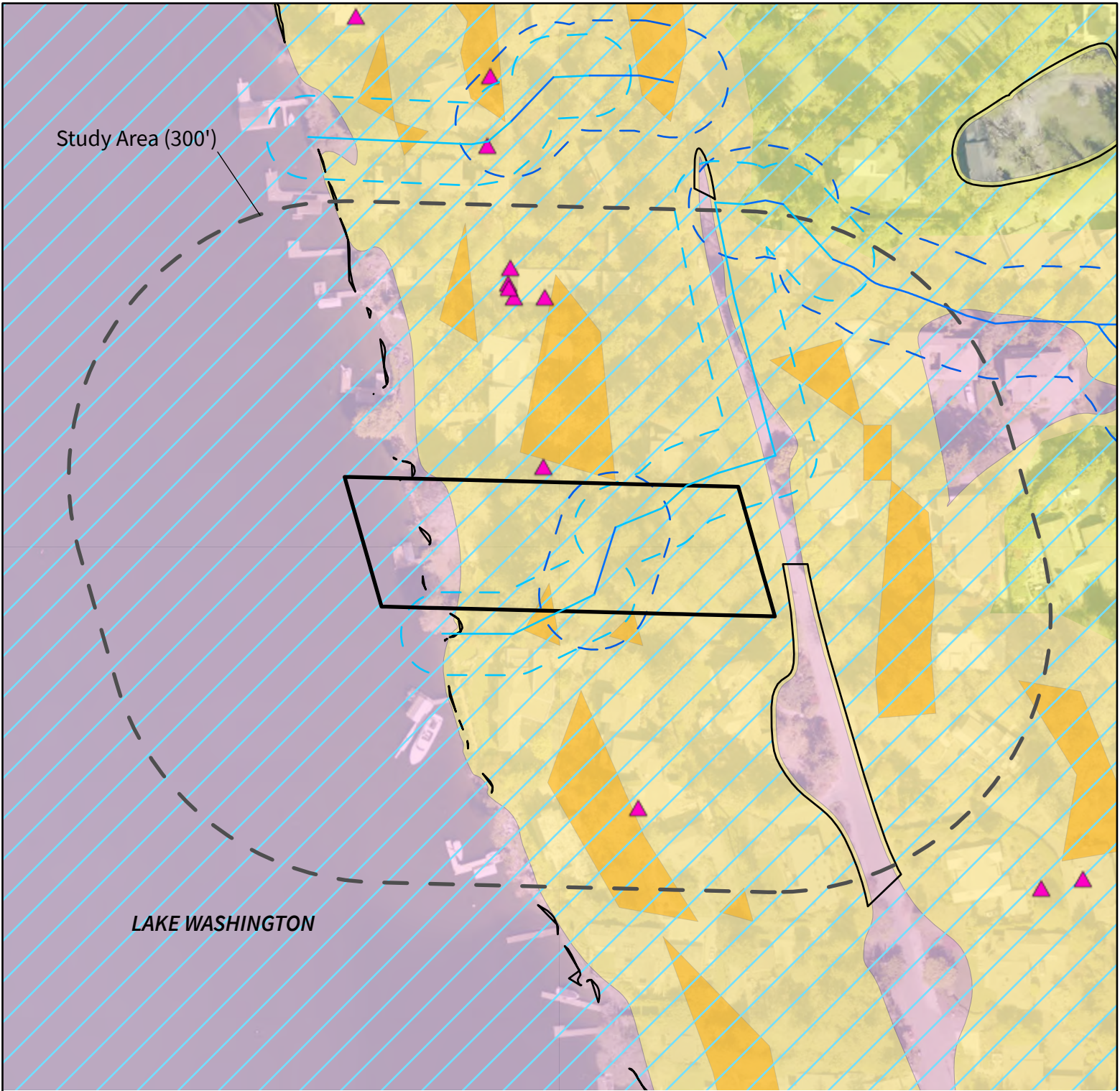


KING COUNTY GIS MAP

Chase Property
 Critical Areas Report
 4525 Forest Avenue SE, Mercer Island, Washington

#0130
 MAY 2023

FIGURE 4

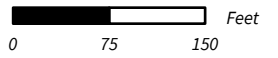


Study Area (300')

LAKE WASHINGTON

LEGEND

- | | | |
|-------------------|----------------------------|-----------------------|
| Subject Property | Watercourse Buffer/Setback | Steep Slope |
| Study Area (300') | 45 | Erosion |
| Watercourse | 60 | Seismic |
| Open Watercourse | Landslide Locations | Potential Slide Areas |
| Piped Watercourse | | |



SOURCE: KING COUNTY AERIAL 2021, MERCER ISLAND GIS

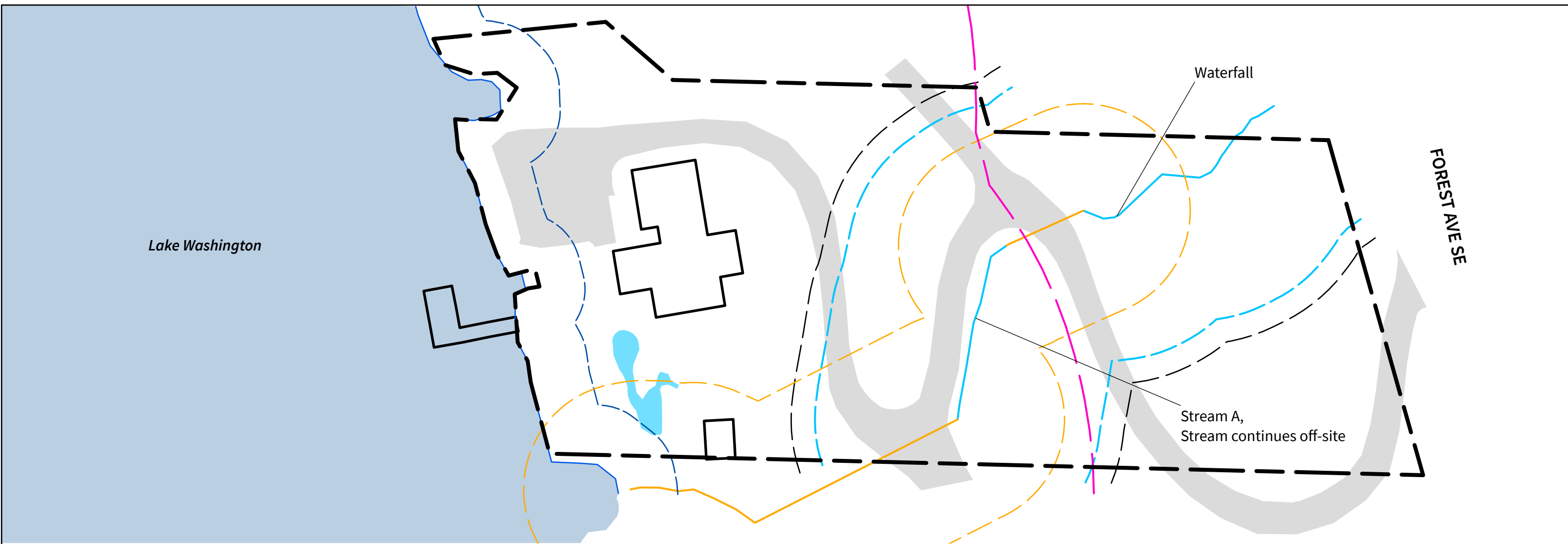


MERCER ISLAND GIS MAP



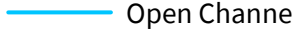



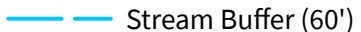




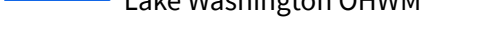

Chase Property
 Critical Areas Report
 4525 Forest Avenue SE, Mercer Island, Washington

#0130
 MAY 2023

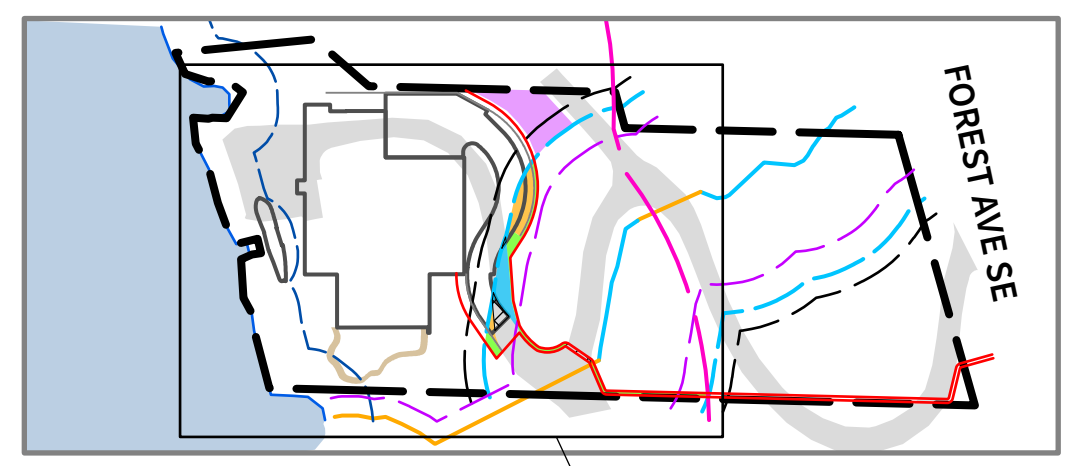
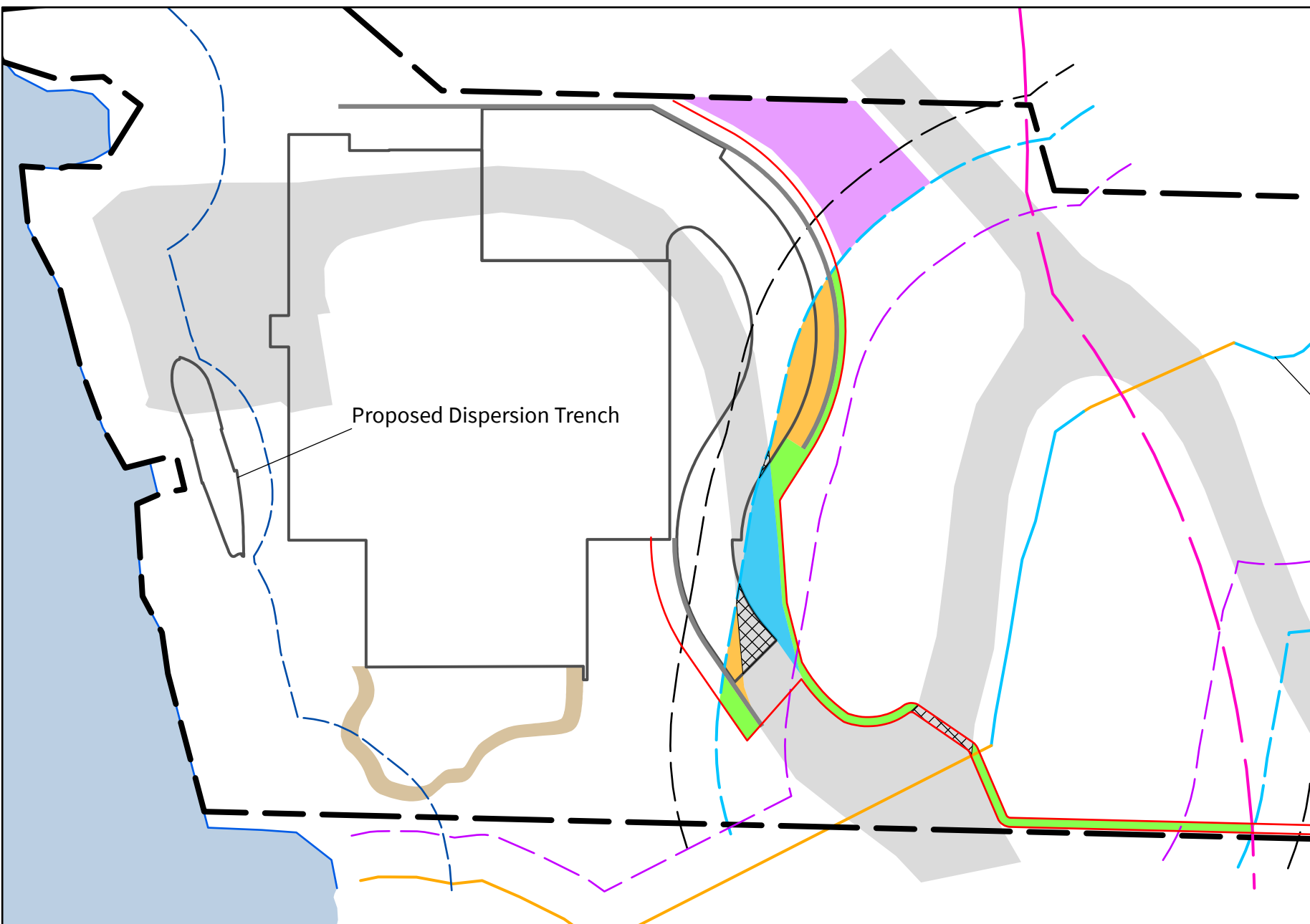
FIGURE 5



LEGEND

- | | |
|---|--|
|  Subject Property | Stream Type |
|  Existing House, Shed, and Dock |  Open Channel |
|  Existing Pond |  Piped |
|  Existing Driveway |  Stream Buffer (60') |
|  Lake Washington |  Critical Area Setback (10') |
|  Lake Washington OHWM |  Standard Piped Stream Setback (45') |
|  Lake Washington Setback (25') |  Shoreline Management Zone (200') |

SOURCE: CAD PROVIDED BY OLSON KUNDIG



Stream A
 Standard buffer may be averaged per MICC 19.07.180.4 and piped watercourse setbacks may be reduced per 19.07.180.6.

IMPACTS & MITIGATION LEGEND

	Pre-existing Buffer Impacts	110 SF
Buffer Reductions		
	Permanent Buffer Impacts	240 SF
	Temporary Buffer Impacts	410 SF
TOTAL REDUCTION:		760 SF
	Buffer Replacement	844 SF
	Buffer Restoration	170 SF
TOTAL MITIGATION:		1,014 SF
NET GAIN:		254 SF

LEGEND

	Subject Property		Limit of Work		Piped
	Existing Driveway		Lake Washington		Reduced Buffer
	Proposed House and Driveway		Lake Washington OHWM		Critical Area Setback (10')
	Retaining Walls		Lake Washington Buffer (25')		Shoreline Management Zone (200')
	Proposed Path	Stream Type			
			Open Channel		

SOURCE: CAD PROVIDED BY OLSON KUNDIG

APPENDIX C

Agency Database Results

Agency Database Websites

Database	Agency (Database Manager)	Website
Township, Range, Section Map	WSDOT	https://www.arcgis.com/home/webmap/viewer.html?useExisting=1&layers=97a5ae98d8d04458860f64e201d155c4
Watershed Boundaries	ECY	https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Fhydro.nationalmap.gov%2Farcgis%2Frest%2Fservices%2Fwbd%2FMapServer&source=sd
Websoils	NRCS	https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx
National Wetlands Inventory	USFWS	https://www.fws.gov/wetlands/data/Mapper.html
Map Service Center	FEMA	https://msc.fema.gov/portal/home
Washington State Water Quality Atlas	ECY	https://apps.ecology.wa.gov/waterqualityatlas/wqa/map
Priority Habitats and Species (PHS)	WDFW	https://geodataservices.wdfw.wa.gov/hp/phs/
Forest Practices Application Mapping Tool	WDNR	https://fpamt.dnr.wa.gov/default.aspx
Statewide Integrated Fish Distribution (SWIFD) Web Map	NWIFC	https://geo.nwifc.org/swifd/
SalmonScope	WDFW	https://apps.wdfw.wa.gov/salmonscape/map.html
Washington State Fish Passage	WDFW	https://geodataservices.wdfw.wa.gov/hp/fishpassage/index.html
StreamNet Mapper	The Pacific States Marine Fisheries Mapper	https://psmfc.maps.arcgis.com/apps/webappviewer/index.html?id=3be91b0a32a9488a901c3885bbfc2b0b



Priority Habitats and Species on the Web



Buffer radius: 300 Feet

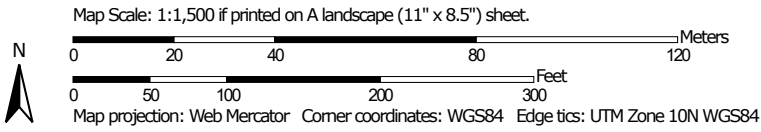
Report Date: 05/16/2023, Parcel ID: [7700100205](#)

The Priority Habitats and Species (PHS) datasets do not contain information for your project area. This does not mean that species and habitats do not occur in your project area. PHS data, points, lines and polygons are mapped only when occurrences of these species or habitats have been observed in the field. Unfortunately, we have not been able to comprehensively survey all sections in the state and therefore, it is important to note that priority species and habitats may occur in areas not currently known to the Department.

DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive

surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

Soil Map—King County Area, Washington



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: King County Area, Washington

Survey Area Data: Version 18, Sep 8, 2022

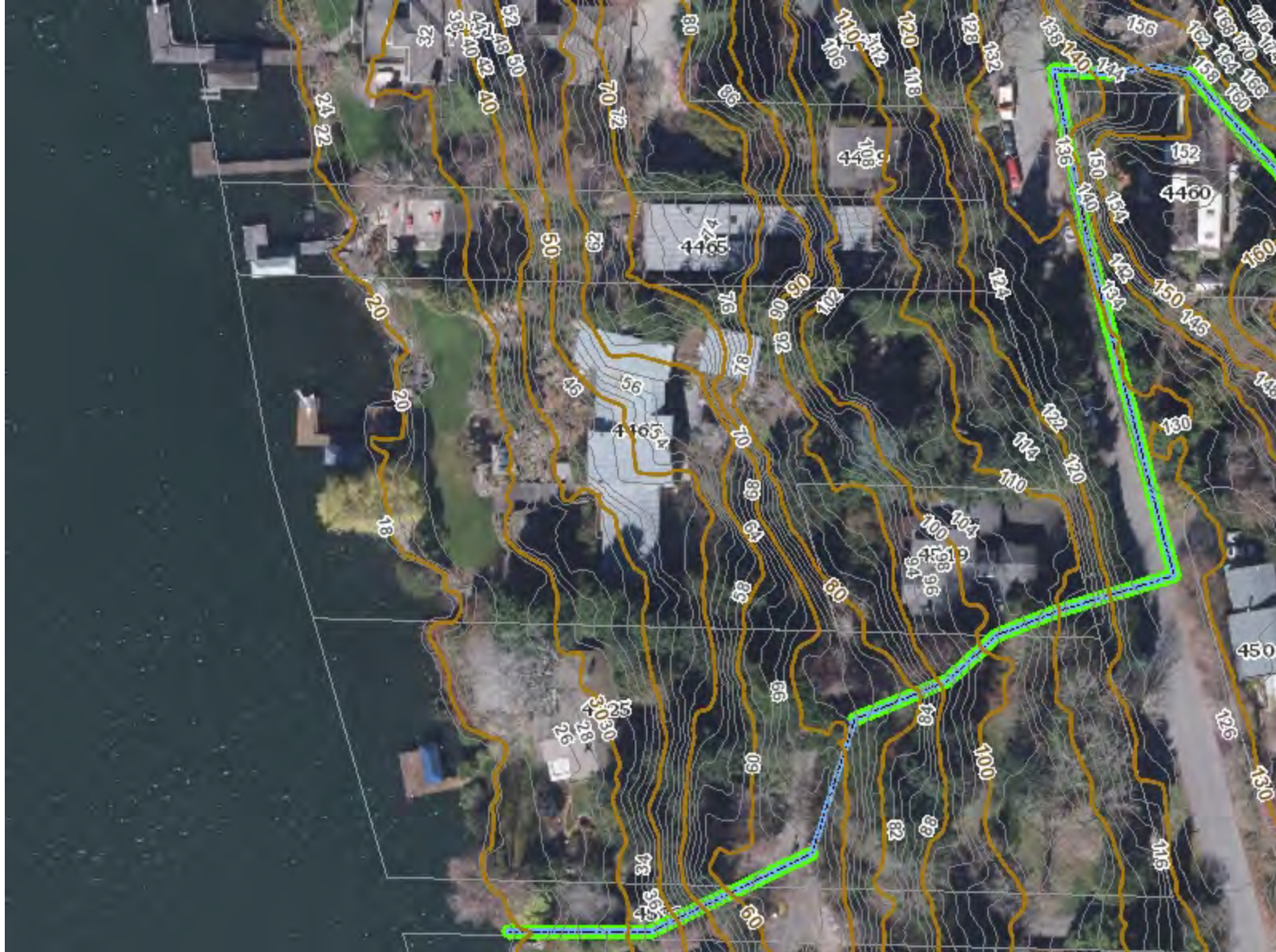
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 31, 2022—Aug 8, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

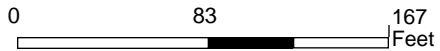
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KpB	Kitsap silt loam, 2 to 8 percent slopes	3.5	29.0%
KpD	Kitsap silt loam, 15 to 30 percent slopes	4.7	39.0%
Totals for Area of Interest		12.0	100.0%



Legend

- 10ft Lidar Contours (2016)
- 2ft Lidar Contours (2016)
- Unpiped Watercourse
 - Type "F" = Fish
 - Type "Np" = Non-Fish
 - Type "Ns" = Non-Fish Seasonal
 - Type "Np" (Unverified)
 - Type "Ns" (Unverified)
- Piped Watercourse
- Address
- Property Line
- March 2020
 - Red: Band_1
 - Green: Band_2
 - Blue: Band_3



1 inch =
166.666666666667
feet



Disclaimer: These maps were developed by the City of Mercer Island and are intended to be a general purpose digital reference tool. These maps are not an accepted legal instrument for describing, establishing, recording or maintaining descriptions for property concerns or boundaries. The City makes no representation or warranty with respect to the accuracy or currency of these data sets, especially in regard to labeling of surveyed dimensions, or agreement with official sources such as records of survey, or mapped locations of features.

Notes

APPENDIX D

Photodocument



View of house from dock showing lake shoreline and forested slope above house.



Existing driveway where new driveway alignment will begin. Area located within stream buffer & piped stream setback.



Onsite stream adjacent to driveway before final curve.
Photo facing SW.



Upper segment of culvert under driveway



Upper meadow—northern half encumbered by stream
buffer, southern half unencumbered by critical areas.



View from west edge of meadow facing west downhill
towards road—showing typical conditions under the
canopy.



Typical understory within stream buffer near driveway where buffer modifications are proposed.



Stream buffer near center of photo facing uphill from south of house.



Shoreline setbacks between house and lake shoreline, facing north.



Lake shoreline facing south from north end of Site.

APPENDIX E

Email chain with City of Mercer Island

Patricia Flores

From: Elisa Renouard
Sent: Wednesday, May 17, 2023 10:46 AM
To: Patricia Flores
Subject: Fw: 4525 Forest Ave SE - Watercourse Land Use Code questions

From: Elisa Renouard
Sent: Wednesday, June 22, 2022 12:59 PM
To: Molly McGuire <molly.mcguire@mercerisland.gov>
Subject: RE: 4525 Forest Ave SE - Watercourse Land Use Code questions

Hi Molly,
Thanks for the feedback! This is very helpful.
Best,
Elisa

From: Molly McGuire <molly.mcguire@mercerisland.gov>
Sent: Wednesday, June 22, 2022 10:27 AM
To: Elisa Renouard <elisa@olsonkundig.com>
Subject: RE: 4525 Forest Ave SE - Watercourse Land Use Code questions

Hi Elisa,

Apologies for the delayed response, I have been under the weather and out of office for the past several days. I appreciate your patience while I get caught up.

I was able to talk with our civil engineering department regarding daylighting the piped watercourse on city owned property. They determined that daylighting this watercourse would likely require removal of city trees and since the property is very steep, it would likely cause some erosion issues that would send sediment into the lake. The civil engineering department would not support daylighting this piped watercourse.

Another option that you could explore can be found in [MICC 19.07.180\(C\)\(6\)\(d\)](#). If you can meet all of the requirements in this section, the piped watercourse setback could be reduced to 10 or 5 feet depending on lot width. This would require a [CAR2](#) permit.

Sincerely,

Molly McGuire

Planner

City of Mercer Island - Community Planning & Development

206.275.7712 | mercerisland.gov/cpd

Notice: Emails and attachments may be subject to disclosure pursuant to the Public Records Act (chapter 42.56 RCW).

Due to the regional COVID-19 outbreak, many City of Mercer Island staff are now working remotely. Responses to emails and phone calls may take additional time as we have modified our operations. Thank you for your patience.

From: Elisa Renouard <elisa@olsonkundig.com>

Sent: Tuesday, June 21, 2022 11:36 AM

To: Molly McGuire <molly.mcguire@mercerisland.gov>; LandUse Planning <landuse.planning@mercergov.org>

Subject: RE: 4525 Forest Ave SE - Watercourse Land Use Code questions

Hi Molly and Land Use Planning Department,

I am writing to follow up on the email below from June 2nd, regarding a project for a new single family residence at 4525 Forest Ave SE.

The property has a small Type NP watercourse that flows through and off the site. The City of Mercer Island Land Use GIS maps show the watercourse as piped at the western end of the parcel. The pipe has broken down over the years, but segments of the pipe are clearly visible.

We need to move forward with the design and application process so, barring any different feedback from you, we are going to treat this as a piped watercourse with a 45' setback.

We are still interested in doing a watercourse restoration plan but can discuss this more at our pre-application meeting.

Please let us know if you have any thoughts in the meantime.

Thank you!

Best,
Elisa

Elisa Renouard, Associate AIA (*she/her*)
Architectural Designer

OLSON KUNDIG Seattle | New York
P 206.624.5670 D 206.438.1407 M 206.788.7876 F 206.624.3730
olsonkundig.com | [Instagram](#) | [LinkedIn](#)

From: Holly Simon <holly@olsonkundig.com>

Sent: Monday, June 13, 2022 2:36 PM

To: Molly McGuire <molly.mcguire@mercerisland.gov>; LandUse Planning <landuse.planning@mercergov.org>

Cc: Elisa Renouard <elisa@olsonkundig.com>

Subject: RE: 4525 Forest Ave SE - Watercourse Land Use Code questions

Hello Molly and the Land Use Planning Department,

I'm writing to follow up on this email question I sent over on June 2nd. I'm actually leaving my post at Olson Kundig and want to make sure that Elisa Renouard, the new project manager, is copied on any responses. I understand you are short staffed. Thank you in advance for answering our email when you are able.

Best wishes,

Holly
Holly Simon, (*she/her*)
Architect

OLSON KUNDIG Seattle | New York

From: Holly Simon

Sent: Thursday, June 2, 2022 12:58 PM

To: Molly McGuire <molly.mcguire@mercerisland.gov>; LandUse Planning <landuse.planning@mercergov.org>

Subject: 4525 Forest Ave SE - Watercourse Land Use Code questions

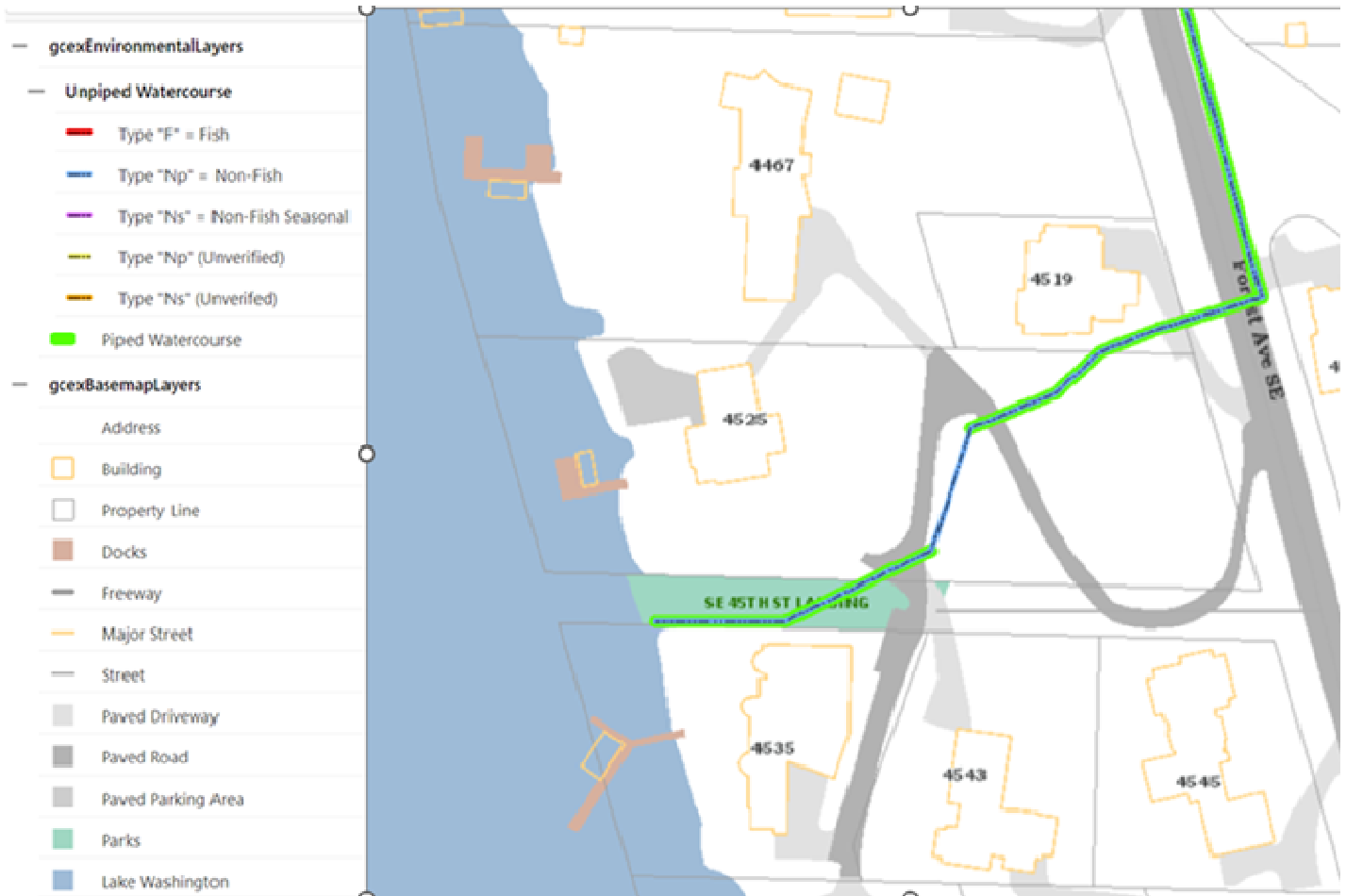
Hello Molly and M.I. Land Use Planning Department,

Molly, we spoke previously about some questions on the pre-application process. We have a follow up question and I'm hoping you can guide us or point us in the right direction.

I am an architect working on a new single family residence on Mercer Island (4525 Forest Ave SE). We have a question about the watercourse buffer and setback requirements. There is a small Type NP watercourse that flows on and off the site. There are segments that are piped and segments that are open. At the south lot line of the property is a 30' City owned right of way (SE 45th Street Landing). The watercourse finishes up in this City right of way where it ends at the lake. The City of Mercer Island Land Use maps show the final segment closest to the lake as piped, which by the code, would necessitate a 45' setback and no buffer. However, at some point the pipe appears to have broken down. The end of a broken pipe, with water flowing from it, is visible. There are portions that are definitely piped, and portions where water is visible, and it's not clear if it's partially piped in some of or all of these areas. We assume the City's maps, which show this area as piped, can be relied upon, even if some of the pipe has broken up over the years.

Our clients are planning to create a new house that is 4000-5000 sf, close to, but somewhat larger than, the footprint of the existing house on the property (and will of course abide by the shoreline setbacks and exceptional tree guidelines). We are interested in learning what interpretation of the watercourse setbacks and buffers we can apply to maximize the lot coverage available. In addition, we would be open to working with a well regarded natural resource company to develop a proposal to the City to daylight the watercourse on the relevant section of SE 45th Street Landing, even though it is City property, if the City agrees the daylighting effort would make the proposed project eligible for the 15' buffer in the code offered as an incentive to encourage daylighting. As a part of that project we would also offer to remediate the area around the watercourse that has not had any attention for many decades. See below the GIS map of the watercourse and the property and a photo of one broken pipe found in the SE 45th Street Landing.

We do intend to request a pre-application meeting but are trying to get our bearings for siting the house so we have enough information to have a thorough pre-app review. Can you please advise us how to interpret the requirements for setback/buffers on the lower portion of the watercourse shown below in the SE 45th Street Landing just to the south of our client's site. Thank you in advance!





Holly Simon, *(she/her)*
Architect

OLSON KUNDIG Seattle | New York
P 206.624.5670 **D** 206.438.1435 ext. 3235 **F** 206.624.3730
olsonkundig.com | [Instagram](#) | [LinkedIn](#)