Ecological No Net Loss Assessment Report

Prepared for

Kavalok Residence
5908 East Mercer Way
Mercer Island, WA 98040

Prepared by

Northwest Environmental Consulting, LLC
600 North 36th Street, Suite 423
Seattle, WA 98103
206-234-2520

September 2024

Purpose

The purpose of this report is to fulfill the requirements of City of Mercer Island Shoreline Master Program by assessing overall project impacts and proposed mitigation to determine if the project meets the “No Net Loss” General Regulation of the Shoreline Master Program.

No Net Loss is defined as “An ecological concept whereby conservation losses in one geographic or otherwise defined area are equaled by conservation gains in function in another area.”

The property is being permitted for a pier repair and extension to improve moorage at the site.

Location

The subject property is located at a Tract Lot used by multiple families between King County parcel numbers 5826 and 5912 E Mercer Way in the City of Mercer Island, Washington (see Appendix A – Sheet A1.0). The parcel is on the waterfront of Lake Washington, which contains several endangered fish species listed under the Endangered Species Act and Washington State designated priority fish species.

Project Description

The work will repair will extend an existing pier and increase reconfigure the deck to remove a 45 degree angle that will add 13 square feet of new deck. The work will include removing 629 square feet of the existing deck. Repair of 9 of the existing piles will be completed using the sleeve repair method. The new dock extension will be supported by 4 new 8-inch steel epoxy piles. The new piles will be driven with a vibratory hammer. The 2 existing moorage piles will be removed with a vibratory hammer or dead pulled.

The deck will be repaired, and all new deck surfaces will be grated with ThruFlow decking. See sheet A2.0 to A13.0 for project plans and details.

During construction, a floating boom and silt curtain will surround the work barge and pier. See sheet A7.0.

A shoreline vegetation plan is proposed, adding 1 western red cedar, 1 shore pine, 1 Nootka rose, and two mock orange to provide shade and allow leafy material to enter the lake along the shoreline. (see Appendix A – Sheet A8.0 to A9.0)

Project drawings are included in Attachment A.

Approach

Northwest Environmental Consulting LLC (NWEC) biologist Brad Thiele conducted a site visit on September 18, 2024, to evaluate conditions on site and adjacent to the site. NWEC also consulted the following sources for information on potential critical fish and wildlife habitat along this shoreline:

- Washington Department of Fish and Wildlife (WDFW): Priority Habitats and Species online database (http://apps.wdfw.wa.gov/phsontheweb/)

- WDFW SalmonScape online database of fish distribution and ESA listing units (https://apps.wdfw.wa.gov/salmonscape/)

- Mercer Island GIS online database (https://chgis1.mercergov.org/Html5Viewer/Index.html?viewer=PubMaps&viewer=PubMaps)

Site Description

The subject property is a shoreline tract in a residential neighborhood. It has shoreline on its eastern boundary with single-family homes to the north and south.

The property is a tract used by multiple families to access the shoreline and the dock, the only existing structure on the property is the dock.

The parcel is maintained as lawn. The shoreline is armored with a basalt bulkhead with some herbaceous vegetation and Himalayan blackberry canes growing immediately landward of the bulkhead. The substrates along the shore are sand and gravel with interspersed cobble starting about 10 feet from shore. Patchy Eurasian milfoil was present starting about 15 feet from shore.

The neighboring shorelines are landscaped with bulkheads and docks with various landscaping. Both properties have beach coves adjacent to the subject property. A weeping willow is present on the corner of the lot to the north that overhangs the shoreline. See attached photos in Appendix B- Photos.

Species Use

WDFW's PHS mapping and SalmonScape mapping tools show the following salmonid species using Lake Washington for migration and/or rearing: residential coastal cutthroat (*Oncorhynchus clarkii*), winter steelhead (*O. mykiss*), Dolly Varden/bull trout (*Salvelinus malma*), sockeye salmon (*O. nerka*), fall Chinook (*O. tshawytscha*), coho salmon (*O. kisutch*), and kokanee (*O. nerka*). The SalmonScape database maps the site as accessible to the Endangered Species Units (ESU) of Threatened Chinook and steelhead. Juveniles migrate and may rear in the waters near the project when traveling from spawning sites on other lake tributaries to the lakes system's outlet at the Hiram M. Chittenden Locks. The project site is accessible to any fish migrating or rearing in the lake. The shoreline is not mapped as a Sockeye spawning location.

Priority Habitats and Species mapping does not map any features within 1,000 feet of the site.

The City of Mercer Island GIS Portal does not indicate any watercourses at the site. No upland work will be completed on the site except for the planting plan.

Project Impacts and Conservation Measurements

Direct Impacts:

Sediments: Sediment disturbance will occur below the OHWM and along the shoreline of Lake Washington. Additionally, the tug and barge propwash may disturb sediments temporarily when making trips to/from the site. Some sedimentation may also be caused during removal of the existing piles and driving of new piles.

Sediments have been shown to be minimally disturbed during pile driving activities. Juvenile salmonids could be temporarily displaced or stressed by increased turbidity. A floating boom will be placed around the pier to contain floating debris to the project site and a floating silt boom will be installed around inwater work areas to prevent turbidity from leaving the work area should it occur. The project will meet state water quality standards.

Shoreline: Planting native vegetation will increase the habitat functions of the shoreline by creating vertical structure that will be an improvement from the existing baseline habitat conditions at the project site. These plants will provide overhanging cover for fish, structural diversity for birds and wildlife, detritus for aquatic invertebrates and long-term recruitment of woody material and other allochthonous food sources. The existing vegetation is essentially lawn for most of the shoreline. The proposed planting plan is included (see Appendix A - Sheet A8.0 A9.0).

Lakebed: The project will remove 2 10-inch piles from the lake and add 4 8-inch piles pile to the lake. The pile work will result in displacement of 1.1 square feet of lakebed. Pile splicing will not change lakebed coverage.

Noise: Construction equipment and pile driving will create noise audible to neighbors and in-water. Noise disturbance will be short-term and should have negligible effects on fish and wildlife in the area because work will be completed during the in-water work window when juveniles are not likely to be present.

Potential spills: Short-term risks include the potential for spills that can occur with any equipment operation. The potential harm to the aquatic environment is minimized because a trained crew will be onsite that will implement spill containment measures should a spill occur. If a spill should occur, the Department of Ecology will be notified per permit conditions.

Indirect Impacts:

The proposed dock will increase overwater coverage by 117 square feet. The proposed decking will be ThruFlow grated decking. Grated decking allows light to penetrate the waters below the dock, which can increase productivity in the water column, and reduce the full shade favored by salmonid predators. Salmonid predators are known to use hard shadowing under solid-decked docks to ambush juvenile salmonids. Reducing these hard shadows limits their ability to effectively hunt salmonids. In addition, hard shadowing may increase juvenile salmonid outmigration times when encountered along the shoreline.

ThruFlow grated decking has a measured performance at 43 percent light penetration (ThruFlow, 2021). Thus, the increase in lighting under the pier is effectively 57% of the area of a solid decked structure. Table 1 provides a summary of effective coverage:

Table 1 – Effective coverage

	Existing/ Proposed	Proposed grated	Conversion	Effective coverage	Reduction in effective coverage
Existing Dock (SF)	665		n/a		
Existing dock expansion		13	0.57	7	6

Proposed Dock (SF)		746	0.57	425	321
TOTAL (SF)	665	759		432	327

The use of grated decking at the site reduces the effective coverage of the new and existing structure by 327 square feet reducing the effective overwater coverage at the site by 196 square feet.

In addition, the new dock configuration will place moorage into water 19 to 22 feet deep. Juvenile salmonids often follow the shoreline while migrating so placing the moorage in the deep shore environment is the least impacting to the salmonid using the Lake.

Recreational Boating: The project supports continued recreational boating, which has been identified as a limiting factor for salmonid populations in Lake Washington. The pier will not introduce additional boating to Lake Washington, as the owners could still access the lake from a public boat launch or private moorage facility.

Other Conservation measures:

Work window: The work will be completed during the prescribed in-water work window for this area of Lake Washington (July 16 to April 30). Operating within this time frame helps protect Chinook salmon, steelhead, bull trout and other salmonid fish species by doing work when juvenile fish are not expected to be present.

Best Management Practices: Applicable BMPs will be used such as a floating boom around the in-water work area that will contain any floating debris that may escape during demolition and construction. The barge will have a perimeter containment sock to absorb oil and grease that may wash from the barge during construction.

Hazardous material containment materials such as spill absorbent pads, and trained personnel will be required onsite during any phase of construction where machinery is in operation near surface waters.

In-lieu Fee: The shoreline on the subject property will be planted with native, overhanging vegetation. The project also requires approval from the National Marine Fisheries Service (NMFS). NMFS has developed a calculator to determine appropriate mitigation costs for proposed in-water structures in Lake Washington. This calculator has established a fund that owners can pay into if they are not willing or cannot find mitigation to offset impacts from the project. The owner is not able to complete the required mitigation at the subject property required by NMFS and the property owners will pay into the in-lieu fee program to mitigate project impacts. An in-lieu fee program is defined as follows:

> "A program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements... Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor." (Fed. Reg. 40 CFR Part 230)

The fee has been determined using the Restoration And Permitting (RAP) Calculator for Lake

Washington and will be paid to King County Water & Land Resources Division. This funding has been used to remove 350 derelict piles from the mouth of the Cedar River in Lake Washington.

Conclusion

Juvenile Chinook salmon, and other salmonids, rear and migrate along the Lake Washington shoreline. Lake Washington is a Shoreline of the State.

There will be temporary impacts from noise and disturbed sediments during construction. Increasing overwater coverage by 130 square feet will degrade ecological conditions at the site.

The new and existing dock will use grated decking to reduce the effective overwater coverage resulting in a decrease of effective overwater coverage of 196 square feet at the site. The grating reduces the hard shadows favored by salmonid predators and increases productivity under the pier. Overwater structures may slow juvenile salmonid outmigration times. Using grated decking may reduce the chances of delaying outmigrating juvenile salmonids.

The project will minimize construction effects on the environment by following the prescribed fish window and using applicable BMPs to prevent construction spills, turbidity, and floating debris from escaping the area. The construction crew will retrieve all dropped items from the bottom and dispose of them properly. The effects of construction will be short term.

A shoreline planting plan will be implemented that will add 2 native trees and 3 native shrubs to the shoreline that will provide natural shading, allochthonous food sources and will eventually be a source of woody materials improving shoreline conditions at the site in the long-term. The owner has also opted to pay into the In Lieu Fee program that will be used for conservation projects that benefit salmon in King County.

This project has been designed to meet current residential dock standards and will use Best Management Practices to reduce project impacts. The conservation measures are designed to improve ecological functions or prevent further degradation of habitat **and will result in No Net Loss of ecological functions**.

Document Preparers

Brad Thiele	Biologist	30 years of experience	Northwest Environmental Consulting, LLC. (NWEC)

The conclusions and findings in this report are based on field observations and measurements and represent our best professional judgment and to some extent rely on other professional service firms and available site information. Within the limitations of project scope, budget, and seasonal variations, we believe the information provided herein is accurate and true to the best of our knowledge. Northwest Environmental Consulting does not warrant any assumptions or conclusions not expressly made in this report or based on information or analyses other than what is included herein.

REFERENCES

ThruFlow. 2020. Legacy Series. Online. Accessed September 2020 at https://thruflow.com/products/legacy/.

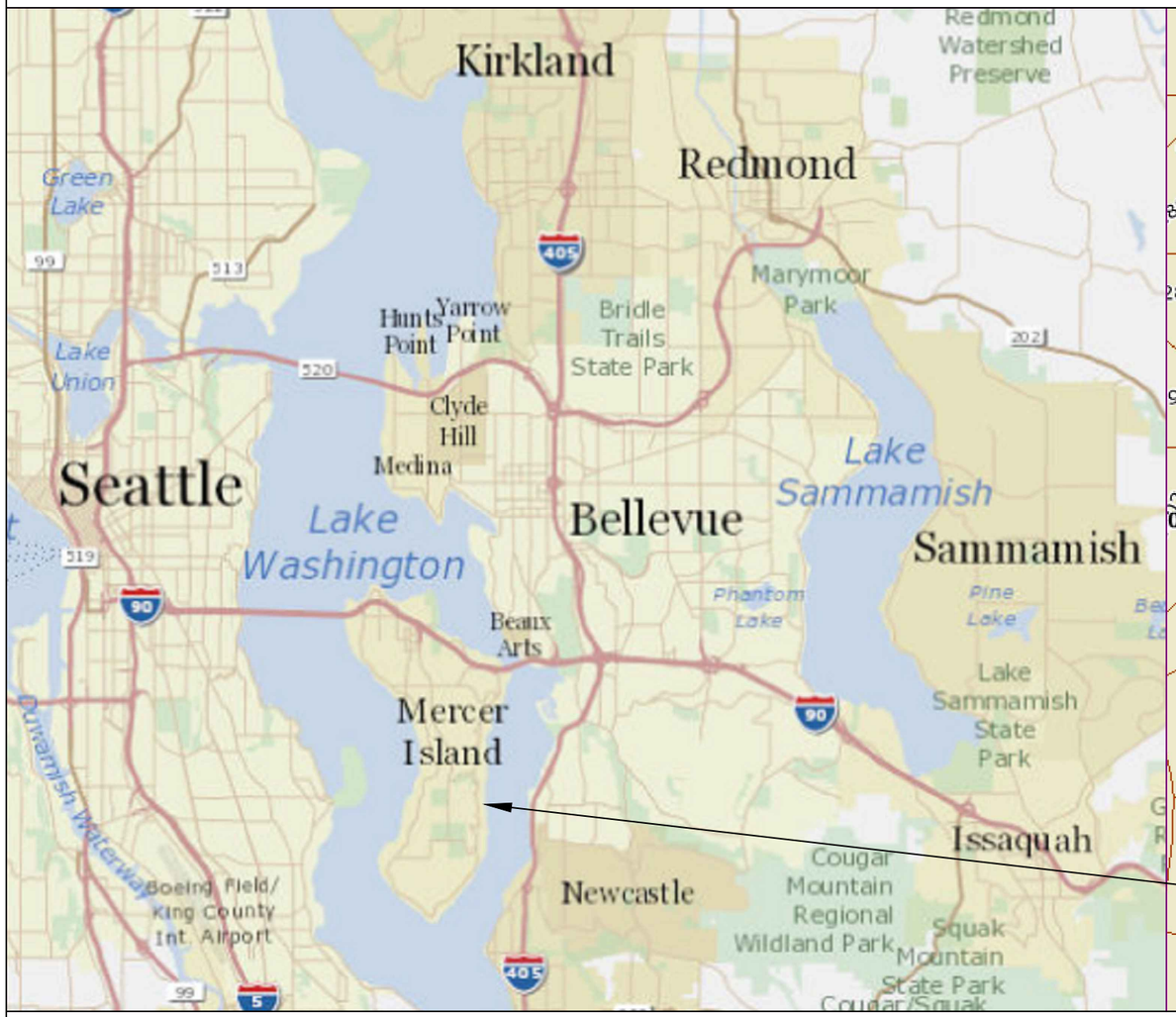
US Army Corps of Engineers (USACE). 2004. Final Biological Evaluation, Regional General Permit: Construction of New or Expansion of Existing Residential Overwater Structures and Driving of Moorage Piling. Lake Washington, Lake Sammamish, the Sammamish River and Lake Union, Including the Lake Washington Ship Canal, in the State of Washington.

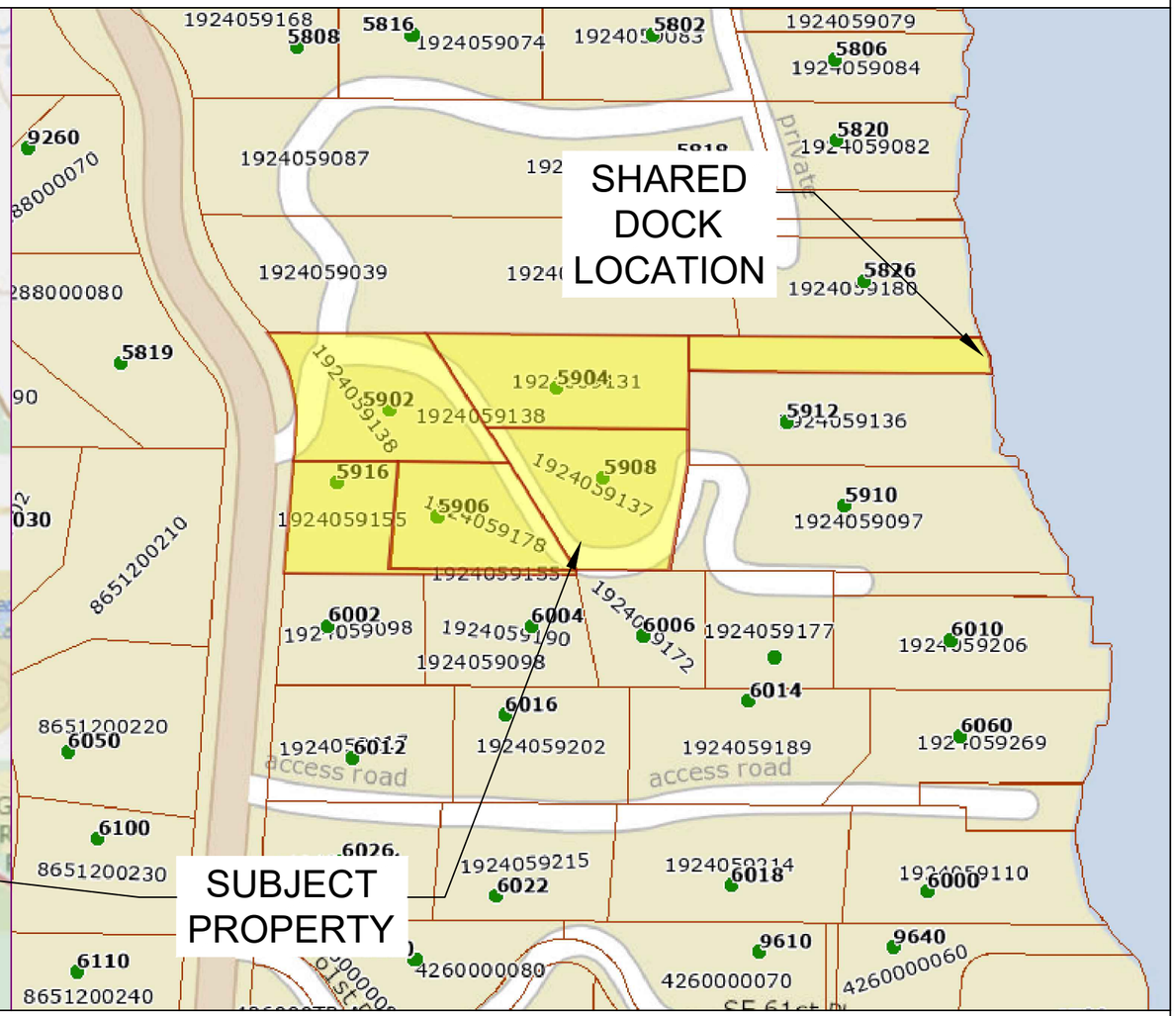
Washington Department of Fish and Wildlife (WDFW). 2024. Priority Habitats and Species. Online database. Accessed September 2024 at http://apps.wdfw.wa.gov/phsontheweb/

WDFW. 2024. SalmonScape. Online database. Accessed September 2024 at http://apps.wdfw.wa.gov/salmonscape/

Appendix A:
Figures and Project Drawings

SITE PLAN





Pin: 192405-9137

Legal Description: POR GL 3 BEG AT PT ON ELY MGN OF E MERCER WAY 1300 FT N OF S LN OF SEC TH E 345 FT TH N 01-26-58 E 120 FT TO TPOB TH N 01-26-58 E 80 FT TH W 225 FT TH S 31-34-28 E 95.42 FT TH E 173 FT TO TPOB TGW UND 1/5 INT IN FOLG-BEG AT PT ON ELY MGN OF E MERCER WAY 1300 FT N OF S LN OF SEC TH E 345 FT TH N 01-26-58 E 170 FT TO TPOB TH N 01-26-58 E 30 FT TH E TO SH OF LK TH SLY TO PT E OF TPOB TH W TO TPOB TGW SH LDS ADJ

Plat Block:
Plat Lot:

Parcel	Dock
LAT: 47.5497	LAT: 47.549791
LONG: -122.21125	LONG: -122.209921

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Scope of Work: We propose to repair (9) existing piles, remove (2) existing mooring piles, repair the existing dock, install (1) new boat lift, install (1) new dock mounted PWC lift, install (4) new epoxy coated steel piles, and install a dock extension.

County: King County
Location: Lake Washington

Applicant: Kavalok Residence
5908 E MERCER WAY
Mercer Island, WA 98040

Datum: CORPS OF ENGINEERS 1919
SE Quarter Of Section 19, Township 24, Range 05

Adjacent Owners:
ANDREWS ROBERT T
5826 E MERCER WAY
SEDA ROBERT J
5912 E MERCER WAY 98040

Created: 04/04/24
Last Updated: 8/15/2024 1:37 PM Zion

SHEET 1.0

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Appendix B:
Site Photographs

Photo 1 - Existing dock looking waterward.

Photo 2 - Existing dock looking landward.

Photo 3 - Existing shoreline north of the dock.

Photo 4 - Existing shoreline south of the dock.

Photo 5 - Existing conditions north of the site.

Photo 6 - Existing conditions south of the site.