



February 2026  
Luther Burbank Park Waterfront Improvements

---

# Critical Areas Study

Prepared for City of Mercer Island

February 2026  
Luther Burbank Park Waterfront Improvements

# Critical Areas Study

**Prepared for**

City of Mercer Island Public Works  
9611 SE 36th Street  
Mercer Island, Washington 98040

**Prepared by**

Anchor QEA  
1201 3rd Avenue, Suite 2600  
Seattle, Washington 98101

## LIST OF REPORT CONTRIBUTORS

### **Report prepared by:**

Sara Noland, Senior Biologist/Planner, Anchor QEA

Josh Jensen, Senior Managing Planner, Anchor QEA

**Geotechnical review completed by Geoengineers (see Appendices C and D)**

# TABLE OF CONTENTS

<b>1</b>	<b>Introduction.....</b>	<b>1</b>
1.1	Project Purpose.....	1
1.2	Project Background and Description.....	1
1.3	Upland and Shoreline Improvements.....	2
1.3.1	Boiler Building Repairs.....	3
1.3.2	Boiler Building Restroom Annex Renovation.....	4
1.3.3	Concession Stand Repairs.....	4
1.3.4	Waterfront Plaza Renovations and Access Upgrades.....	4
1.3.5	Shoreline and Beach Enhancements.....	6
1.3.6	Waterfront LID.....	6
1.3.7	Irrigation Intake System Installation.....	6
1.4	In-Water and Overwater Activities.....	7
1.4.1	North Dock Repairs.....	7
1.4.2	Central Dock Reconfiguration.....	7
1.4.3	South Dock Reconfiguration.....	8
1.4.4	Overwater Platform.....	9
1.4.5	Derelict Dock Removal.....	9
1.4.6	Buoys.....	9
1.4.7	Summary of Pile and Overwater Cover Quantities.....	10
1.5	Vegetation Disturbance and Restoration.....	11
1.6	Project Schedule.....	12
1.7	Statement of Accuracy and Assumptions.....	13
1.8	Review of Existing Information.....	13
<b>2</b>	<b>Project Area Description .....</b>	<b>14</b>
2.1	Topography.....	15
2.2	Soils.....	15
2.3	Hydrology.....	16
2.4	Plant Communities.....	16
<b>3</b>	<b>Critical Areas Description.....</b>	<b>18</b>
3.1	Methods.....	18
3.2	Wetlands.....	18
3.3	Watercourses.....	19
3.4	Fish and Wildlife Habitat Conservation Areas.....	19

3.4.1	Vegetation and Shoreline Conditions.....	19
3.4.2	Wildlife and Habitat.....	20
3.4.3	Lake Washington.....	21
3.4.4	Priority Species and Habitats.....	21
3.4.5	ESA-Listed Species and Critical Habitat.....	22
3.5	Geologically Hazardous Areas.....	22
3.5.1	Erosion Hazard Areas.....	22
3.5.2	Landslide Hazard Areas.....	23
3.5.3	Seismic Hazard Areas.....	23
<b>4</b>	<b>Critical Areas Impacts Assessment and Mitigation .....</b>	<b>24</b>
4.1	Fish and Wildlife Habitat Conservation Areas.....	24
4.1.1	City Code Requirements.....	24
4.1.2	Project Impacts.....	24
4.1.3	Mitigation Measures.....	26
4.2	Geologically Hazardous Areas.....	26
4.2.1	Erosion Hazard Areas.....	27
4.2.2	Landslide and Seismic Hazard Areas.....	27
<b>5</b>	<b>Mitigation Sequencing and Best Management Practices .....</b>	<b>29</b>
<b>6</b>	<b>References.....</b>	<b>33</b>

## TABLES

Table 1	Impervious Surfaces Summary.....	5
Table 2	In-Water and Overwater Work Summary.....	10
Table 3	Areas of Vegetation Disturbance and Restoration.....	12
Table 4	Federally Listed Species and Critical Habitat Likely to Occur in the Project Vicinity..	22

## FIGURES

Figure 1	Vicinity Map
Figure 2	Aerial Photograph of Park and Project Area
Figure 3	Project Overview
Figure 4	In-Water and Overwater Construction Plan
Figure 5	Planting Plan

Figure 6	Plant Schedule
Figure 7	Project Area Boundary and Topography
Figure 8	USDA NRCS Soils
Figure 9	USFWS National Wetlands Inventory
Figure 10	Erosion Hazard Areas
Figure 11	Landslide Hazard Areas
Figure 12	Seismic Hazard Areas

## **APPENDICES**

Appendix A	Project Plan Set
Appendix B	Photographs
Appendix C	Geotechnical Report for Upland Improvements
Appendix D	Geotechnical Report for Dock Improvements
Appendix E	Wave and Wake Modeling Report
Appendix F	Tree Report

## ABBREVIATIONS

ADA	Americans with Disabilities Act
BMP	best management practice
CAS	Critical Areas Study
City	City of Mercer Island
DNR	Department of Natural Resources
DPS	distinct population segment
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FRP	fiberglass-reinforced plastic
FWHCA	fish and wildlife habitat conservation area
lf	linear feet
LID	low impact development
LWD	large woody debris
MICC	Mercer Island City Code
NAVD88	North American Vertical Datum of 1988
NMFS	National Marine Fisheries Service
OHWM	ordinary high water mark
Project	Luther Burbank Park Waterfront Improvements Project
sf	square foot
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
UST	underground storage tank
WDFW	Washington Department of Fish and Wildlife

# 1 Introduction

The City of Mercer Island (City) is proposing the Luther Burbank Park Waterfront Improvements Project (Project) to repair, maintain, and enhance the waterfront program at Luther Burbank Park in the City of Mercer Island, Washington (Figures 1 and 2).

This Critical Areas Study (CAS) has been prepared by Anchor QEA to support the local permitting and land use review for the Project consistent with the critical areas reporting requirements in the Mercer Island City Code (MICC) Chapter 19.07.110. The Project is located within the City's regulated shoreline area. According to MICC 19.13.010D, critical areas within shoreline jurisdiction are regulated by the critical areas code requirements in MICC 19.07.010 through and including MICC 19.07.190, Ordinance 19C-05.

This CAS evaluates the presence of existing critical areas within the Project area and potential impacts to the critical areas and regulated buffers as defined in MICC Chapter 19.07. Critical areas regulated by the City include wetlands, watercourses, fish and wildlife conservation areas (FWHCAs), and geologically hazardous areas. Per MICC 19.07.170, the site review also included a survey for bald eagle (*Haliaeetus leucocephalus*) nests within the Park to identify areas used by bald eagles for foraging, nesting, and roosting, or within 660 feet of a bald eagle nest.

Project staff gathered and reviewed existing information consistent with MICC Chapter 19.07 to assess existing critical areas. Anchor QEA performed a critical areas site visit on February 19, 2020. Subsequent site visits have occurred in 2021 and 2022 as part of this Project, confirming existing conditions within the Project area.

A Project plan set is provided as Appendix A. Site photographs are provided in Appendix B.

## 1.1 Project Purpose

Luther Burbank Park is a popular park used by the residents of Mercer Island and the greater Seattle-Bellevue metro area for many waterfront recreational activities. The dock structures in their current configuration were constructed in 1974 to accommodate small boats in a different shoreline and recreational setting than exists today. The purpose of the Project is to modernize and optimize public access, recreational uses, and public safety, including reconfiguring the waterfront park to better accommodate small boats and nonmotorized watercraft and improve Americans with Disabilities Act (ADA) and universal access to the docks and beach, while avoiding and minimizing potential impacts to sensitive environments and resulting in no net loss of ecological function.

## 1.2 Project Background and Description

The Project includes repairing and replacing portions of the existing dock structures, including repairs to the north dock structure, and replacing and reconfiguring the central and south dock

structures to accommodate waterfront programming and current and projected watercraft uses. Other waterside improvements include installing a grated overwater public access platform in the nearshore to improve access to the water along the existing plaza area.

The Project also includes upgrades to the waterfront plaza and Boiler Building. These include Boiler Building repairs (i.e., new roof, seismic retrofits, and new lighting); Boiler Building restroom annex renovation to improve the restroom; concession stand repairs; and waterfront plaza renovations and access upgrades.

The Project will improve access to the waterfront by creating a new ADA accessible route from the plaza to the expanded north beach that will be improved with fish habitat and gravel and riparian plantings as well as feature an ADA beach mat to enable access to the water. Additionally, an accessible route will be constructed from the South Shoreline Trail to the south of the restroom annex to facilitate future ADA pathway connections for a future elevated boardwalk and rooftop viewing deck (to be evaluated in Boiler Building Phase 2 Renovation currently planned to begin design in 2028). All proposed waterfront improvements, including dock structures and gangways, will also meet accessibility requirements.

Based on requirements provided by the Fire Department in an on-site meeting with KPFF Consulting Engineers in December 2022 and additional consultation in July-September 2025 during the 90% design phase, the project will add a new ductile fire water line, fire hydrants, and a fire department connection to an existing hydrant in the North Parking Lot. While installing that fire line, existing trees will be protected in place for the extent of the trenching, and the disturbed lawn and plant area will be renovated to match existing conditions.

The waterfront plaza renovations and access upgrades will incorporate low impact development (LID) features that will provide stormwater buffering and biofiltration functions like a vegetated shoreline. An irrigation intake system will also be installed at the south end of the plaza.

The Project includes upland, shoreline, in-water, and overwater work along Lake Washington. Figures 3 and 4 provide an overview of the project components. Appendix A provides a detailed plan set. Project details and construction methods are described in the following subsections.

### 1.3 Upland and Shoreline Improvements

The proposed upland and shoreline improvements include the following (Figure 3):

- **Boiler Building Repairs:** installing a new roof, seismic retrofits, and new lighting on the existing building (Project Phase completed in 2024)
- **Boiler Building Restroom Annex Renovation:** renovating the existing restrooms and installing new lighting on the existing building (Project Phase completed in 2024)

- **Concession Stand Repairs:** installing improvements and a new electrical panel within the concession area of the existing building (Project Phase completed in 2024)
- **Waterfront Plaza Renovations and Access Upgrades:**
  - Installing up to 5,432 sf of planting and irrigation
  - Installing 2,094 sf of plaza paving improvements
  - Installing three benches and one picnic table
  - Enhancing the north beach access with a new 190 lf ADA-accessible pathway connection and beach improvements, including an accessible beach mat
  - Installing a 1.5ft rock terrace along north beach pathway
  - Installing a new 140-lf on-grade pathway connection between the south shoreline trail, upland plaza, and future structural ramp behind the building (to be evaluated in Boiler Building Phase 2 Renovation currently planned to begin design in 2028)
  - Installing a ductile iron fire water line and fire hydrants
  - Installing concrete steps at the new on-grade pathway
  - Installing a new gathering plaza with rock terrace seating, swings, and viewing rail, on the north side of the Boiler Building (project element incorporated at 90% thanks to an anonymous donation; will be included in the bid package as an additive alternate)
- **Shoreline and Beach Enhancements:** improving the north beach by placing fish habitat gravel landward of the upland edge of the existing beach, relocating boulders and large woody debris (LWD) along the shoreline and enhancing riparian vegetation
- **Waterfront Drainage LID:** installing new site drainage improvements including 2,131 sf of pervious paver drainage design at the plaza, installing a silva cell biofiltration array with a new stormwater outfall to the lake, and complying with all associated storm drainage reporting and compliance requirements
- **Irrigation Intake System Installation:** replacing and installing a new irrigation intake, pump system, and supply lines
- **Fire Department Required Updates:** adding a fire water line, fire hydrants, a Fire department connection to an existing hydrant in the North parking lot, and a connection to support a future fire suppression for the Boiler Building (to be completed in Boiler Building Phase 2 Renovation currently planned to begin design in 2028)

### *1.3.1 Boiler Building Repairs*

Exterior repairs to the Boiler Building will include installing seismic retrofits, a new roof, and replacing and installing wall-mounted light fixtures to enhance public safety.

### *1.3.2 Boiler Building Restroom Annex Renovation*

The Boiler Building restroom annex rooftop will be repaired to facilitate future development of a rooftop viewing deck. The deck will be evaluated during the Boiler Building Phase 2 Renovation, currently planned to begin design in 2028.

### *1.3.3 Concession Stand Repairs*

The concession stand is located between the Boiler Building and restrooms and is approximately 160 sf in area. An existing casework area on the east side of the wall will be removed and replaced with a new 6-inch concrete wall with concrete counter above. A new sink will be installed in the southwest corner of the concession area, and a new electrical panel will be installed in the northwest corner.

### *1.3.4 Waterfront Plaza Renovations and Access Upgrades*

Table 1 describes each Project element and the impervious surface removed, replaced, or installed for each feature. Approximately 25% of the Project area is currently impervious surfaces (buildings, pavement, driveway, and docks).

Plaza renovations for the Project include removing 4,408 sf of concrete pavers, brick pavers, concrete paving, asphalt paving, and concrete retaining wall. Approximately 4,653 sf of existing impervious surface will be replaced, including 2,094 sf of new concrete paving in the western portion of the plaza by the Boiler Building and 841 sf of gravel driveway paving. Approximately 2,131 sf of pervious pavers will be installed in the eastern part of the plaza (not included in impervious surface calculations). Three benches are proposed along the exterior of the Boiler Building, within the plaza and at the north bulkhead bump-out, and one picnic table is planned at southern end of the plaza.

The Project also includes several shoreline trail access improvements (on-grade pathway, north beach pathway).

A new on-grade, crushed gravel switchback pathway will provide access to the plaza, docks, and south shoreline trail. The ADA-accessible pedestrian trail will include approximately 578 sf of terraced rock wall to achieve ADA-compliant slopes. Uphill, the pathway will connect to new concrete steps linking to an existing upland trail network. An existing stormwater outfall will be capped and relocated during construction.

North beach access will be enhanced with a new ADA accessible pathway connection. The existing path will shift upland approximately 5 feet and be replaced with a new concrete sidewalk supported by a rock terrace on the landward side. The new pathway will extend approximately 190 lf and reconnect to the existing ADA-accessible gravel path along the north shoreline, enhancing access from the upland area to the north beach and waterfront plaza. An ADA-accessible beach mat will

also be installed to provide a stable, universally accessible route to the water. Existing boulders and logs will be repositioned on the beach to support shoreline stability.

During the 90% design phase in summer/fall 2025, an anonymous donor came forward to the City with a proposal to add a gathering plaza element to the Project. The donor proposed creating a contemplative space on the north side of the Boiler Building where community members can take rest while walking down to the waterfront and enjoy views of the lake. This element has been incorporated into the final design as an additive alternate for consideration during the bidding process. It features two seating swings, stone seating, and rock terrace retaining walls as well as bronze inlay embellishments in a concrete plaza. Calculations related to impervious surface (Table 1) and vegetation (Table 3) have been added to reflect potential inclusion of this element.

**Table 1  
Impervious Surfaces Summary**

<b>Project Element</b>	<b>Impervious Surface Removed (sf)</b>	<b>Impervious Surface Replaced (sf)</b>	<b>New Impervious Surface Installed (sf)</b>
<b>Waterfront Plaza</b>			
Concrete pavers, brick pavers, and concrete paving at waterfront plaza	4,126	2,094	n/a
Asphalt paving at Boiler Building restroom annex breezeway	264	n/a	n/a
Concrete wall removal north of Boiler Building	18	n/a	n/a
Concrete stairs at end of asphalt pathway north of Boiler Building	n/a	n/a	160
<b>Driveway and ADA Trail</b>			
Gravel driveway paving	841	841	n/a
Gravel on-grade pathway south of plaza	n/a	n/a	1,323
Rock terrace at on-grade pathway	n/a	n/a	578
Concrete steps at on-grade pathway	n/a	n/a	119
<b>Fire Department Updates</b>			
Asphalt and concrete renovation at fire line	1,567	1,567	n/a
<b>North Beach Access</b>			
Gravel pathway	976	151	n/a
Concrete pathway at north beach	n/a	n/a	824
Rock terrace at north beach	n/a	n/a	258
<b>Add Alt 1: Gathering Plaza</b>			
Concrete plazas and stairs	n/a	n/a	702

<b>Project Element</b>	<b>Impervious Surface Removed (sf)</b>	<b>Impervious Surface Replaced (sf)</b>	<b>New Impervious Surface Installed (sf)</b>
Rock terrace retaining walls	n/a	n/a	126
Stone seating terrace	n/a	n/a	50
<b>Total</b>	<b>7,792</b>	<b>4,653</b>	<b>4,140</b>

### *1.3.5 Shoreline and Beach Enhancements*

In addition to improving public access and safety, the design includes shoreline and beach enhancements. The Project will expand the north beach by placing fish habitat gravel landward of the upland edge of the existing beach, relocate boulders and LWD along the shoreline, and enhance riparian vegetation. The beach improvement includes placing 649 sf of habitat gravel and cobble underlayment and relocating intermittent boulders and LWD along the existing beach and riparian buffer area. During relocation of existing boulders and LWD, angular rocks will be removed from the beach area to support fish habitat. The improved beach and riparian area will maintain nearshore habitat functions. The planting plan to replace removed riparian vegetation and trees is described in Section 1.5.

Habitat gravel will consist of naturally rounded material that complies with WDFW grain size criteria for Lake Washington. Gravel depth is a maximum of 2- to 3-foot thickness on the landward side, tapering on the waterward toe of placement. The material will be placed from the upland or by barge using a conveyor (e.g., telebelt or similar) to place the material precisely and evenly. All materials will be sourced from an approved off-site distributor.

### *1.3.6 Waterfront LID*

Approximately 4,126 sf of concrete and brick pavers at the plaza will be replaced with 2,131 sf pervious pavers along the eastern edge of the plaza. The pervious pavers will abut the new concrete paving on the western portion of the plaza and will end at the waterfront edge. A silva cell system will be installed under the south end of the plaza to provide biofiltration of stormwater. A new outfall from this system will be installed in the bulkhead south of the pedestrian plaza. A vegetated conveyance swale will be installed along the resurfaced gravel maintenance driveway.

### *1.3.7 Irrigation Intake System Installation*

The irrigation intake system includes installing a new water pump station south of the Boiler Building and a new freshwater intake screen in Lake Washington east of the pump station. The City will connect the proposed system to upland irrigation systems within the park. Upland work will include installing the pump station, trenching approximately 50 feet east from the pump station under the plaza to the intake screen located on the gangway to the docks, and installing pipe bedding material and piping in the trench.

A coring saw, or similar, will be used to core a hole through the existing retaining wall to insert the intake pipes through the wall and into the lake. A small portion of the lake, in and around the area where the pipe penetration will be constructed through the bulkhead wall, will be temporarily dewatered to allow for drilling through the bulkhead and installation of the screen in dry conditions. Once the penetration is sealed and grout has cured, the screen will be installed on the end of the pipe and the temporary cofferdam used to dewater that portion of the lake will be removed to allow the lake to submerge the fish screen.

The intake screen will be a self-cleaning suction screen designed to screen fish from entering the intake facilities in compliance with current fish screening guidelines from WDFW and the National Marine Fisheries Service. The irrigation intake system will draw water from Lake Washington at a maximum rate of 0.089 cubic foot per second (40 gallons per minute), as allowed by the approved water right change (Water Right Claim 158498AH).

## **1.4 In-Water and Overwater Activities**

The in-water and overwater Project elements are described in this section and shown in Figures 3 and 4. A detailed plan set is provided in Appendix A.

### ***1.4.1 North Dock Repairs***

The Project proposes to retain and repair the northernmost segment of the dock (approximately 188 feet long and 8 feet wide). Approximately 261 sf of the existing concrete dock connecting to the waterfront plaza will be removed and replaced with fiberglass-reinforced plastic (FRP) grating. Approximately 120 sf of an existing wood finger dock will be removed.

Some timber piles supporting the north dock have decayed and need repair. The project includes removing and replacing the top portion of up to five decayed timber piles with ACZA-treated timber. The damaged portions of the pile will be cut away, and a new timber section will be attached to the remaining pile with steel straps.

As part of the north dock repairs, 38 creosote-treated timber piles will be wrapped with fiberglass jackets. The area around the bottom of each pile will be excavated a minimum of 2 feet deep to allow the jacket to be extended below the mudline. A marine epoxy grout will be injected between the pile and the jacket. The jackets will isolate the creosote-treated piles from the water to prevent further leaching of creosote into the water column, reducing a source of water pollution into the lake.

### ***1.4.2 Central Dock Reconfiguration***

The central dock, a fixed concrete structure, will be entirely removed and replaced in a new configuration. The reconfigured central dock will include a wave attenuator/mooring float attached to the existing fixed concrete dock by an ADA-compliant, FRP-grated gangway. The wave

attenuator/mooring float will be 10 feet wide with 2 feet of freeboard. To provide adequate wave attenuation, the float material will be concrete, with light penetration options where possible. The bulk of the structure is located as far offshore as practical in approximately 36 to 38 feet of water to reduce the effect of shading on the lake bottom. The float will attach to 16 new steel piles (24-inch diameter). Attached to the inside of the wave attenuator/mooring float will be two new FRP-grated finger floats, each 25 feet long with 1.5 feet of freeboard.

The intended use of the wave attenuator/mooring float is for small (up to 26-foot) powerboat moorage. The width is designed to attenuate passing vessel wakes and protect moored boats. The wave attenuation function is critical because the area is frequented by wake surfing boats, a recent boating trend that uses back-weighted boats designed to produce large wakes for surfing without the use of the tow rope that is typically required for waterskiing and wake boarding. In the last decade, wake surfing has become popular in Lake Washington. The large waves this generates cause floating docks to pitch excessively. The waves affect the docks intermittently, unpredictably, and without warning. These conditions create unstable surfaces on floating docks, posing a risk to dock users and prohibiting ADA-compliant access. The wave attenuation provided by this mooring float addresses this problem. This project will also install regulatory buoys offshore of the float to inform boaters of wake regulations in proximity to the shoreline (Section 1.4.6).

According to the Mercer Island Shoreline Master Program, breakwaters are prohibited, except for those structures installed to protect or restore ecological functions. These structures shall provide for mitigation according to the sequence defined in Washington Administrative Code 173-26-201(2)(e). The proposed wave attenuation float has been designed to reduce wave energy along both the south and north shorelines of the park. The float reduces wave energy from both storm waves present during winter months and large boat wakes present primarily during summer months. Wave modeling completed as part of the design process for the dock predicts that wave heights will be reduced between 0.5 and 1.0 foot along portions of the shoreline compared to adjacent shorelines (Appendix E). This reduction in wave height will subsequently reduce wave energy along the nearshore and shoreline areas of the park, thus reducing the erosion due to waves and boat wake in these areas. This will provide protection to the recently restored area that was supplemented by placement of habitat-grade gravel and LWD and the planting of native riparian plant species (permitted under City Permit Nos. SHL20-016 and SHL SHL21-009).

### *1.4.3 South Dock Reconfiguration*

The south dock is a fixed concrete structure that will be removed and replaced in a new configuration. As with the central dock, per MICC 19.13.050(H)(5), the south dock is required to have a grated surface that allows for 40% light transmittance over 100% of the dock. The new south dock is intended for nonmotorized watercraft—kayaks, canoes, rowboats, stand-up paddleboards, small sailboats, etc.—to accommodate public use and boating programs such as rentals, classes, and

camps. The design includes the reuse of an existing 10-foot by 50-foot, FRP-grated float and construction of a new 8-foot-wide-by-50-foot-long, 9-inch-freeboard general-purpose float. The proposed floating structures will connect to the existing fixed dock by an ADA-compliant, FRP-grated gangway. The floats will attach to five new steel piles (16-inch diameter).

The new general-purpose float will be constructed with a low freeboard to make the use of kayaks and stand-up paddleboards easier and with grated surfacing to meet light transmittance requirements. Two grated finger floats (each 15 feet long by 3 feet wide) will extend from the general-purpose float to provide areas for kayak launching, including one ADA-accessible kayak launch point.

#### *1.4.4 Overwater Platform*

The Project includes a new grated overwater platform as part of the goal to improve access to the waterfront. The platform will attach to the existing concrete bulkhead at the plaza as an overwater structure and will consist of FRP grating. Access to the water level will be provided by an ADA-compliant ramp on the south side of the bulkhead and a three-tiered, wide step terrace on the north side; neither element will extend to or rest on the beach substrate. Sections of chain from the *Handsome Bollards* public art installation will be removed to allow the public passage beyond the artwork and onto the platform for direct lake access at water level.

The platform is being permitted separately through the U.S. Army Corps of Engineers (USACE) but will be incorporated with the Project for other permit agencies.

As mitigation for the overwater platform, lakebed debris measuring 4 inches in diameter or greater will be removed within 14'-6" waterward of the existing bulkhead.

#### *1.4.5 Derelict Dock Removal*

Per the conditions of approval for Ecology permit no. 2024-NWRO-8260 (April 21, 2025), the Project will remove a decommissioned stub pier (also referred to as a derelict dock) located at the south property edge of the shoreline as project mitigation. Approximately 215 sf of concrete decking and 4 creosote-treated timber piles will be demolished and removed. Demolition shall be performed by barge, and all treated lumber will be transported and disposed of off-site in accordance with Ecology and EPA regulations. No replacement will be installed for this removal.

#### *1.4.6 Buoys*

To reduce the risks created by passing vessels, the City will replace one buoy and add two new buoys in the lake. Two will be "no wake" buoys located east and southeast of the docks, and one will be a "nonmotorized vessel" buoy located near the south dock. A shoreline exemption has been granted for the buoys by the City of Mercer Island per SHL26-001 (February 2, 2026).

### 1.4.7 Summary of Pile and Overwater Cover Quantities

Table 2 summarizes the in-water piles and overwater cover to be removed, repaired, and installed.

Up to seventy-one 12- to 14-inch creosote-treated timber piles and two 16-inch concrete encapsulated piles in total will be removed during dock demolition and repair. A total of 23 new steel piles (16- and 24-inch diameter) will be installed for the replaced docks, and six new pin piles (6-inch diameter) will be installed for the overwater platform. The Project will result in a net reduction of up to 44 piles in Lake Washington, and removal or fiberglass encapsulation of remaining creosote-treated timber piles.

Piles will be installed using a water-based pile driver and a vibratory and/or impact hammer. It is anticipated that impact pile driving will be limited to proofing or if obstructions are encountered during vibratory pile driving. During all impact driving, sound-attenuation devices such as wooden cushion blocks or similar devices will be employed to minimize sound-related impacts.

The Project will result in a net reduction of approximately 140 sf of overwater cover (4,790 sf of existing removed, 4,650 sf new/replaced installed). Approximately 1,470 sf of the new overwater cover will consist of FRP-grated material that will allow light penetration.

**Table 2  
In-Water and Overwater Work Summary**

Project Portion	Element	Features Removed	Features Replaced	Net Change
North Dock Repairs <sup>1</sup>	In-water piles	One 12- to 14-inch creosote-treated timber pile <sup>1</sup>	Not applicable	Net decrease of one in-water pile
	Overwater cover	Approximately 381 sf of overwater cover (261 sf of existing concrete dock; 120 sf of one wood finger dock)	261 sf FRP-grated gangway from bulkhead to existing north dock	Net decrease of 120 sf overwater cover
Central Dock Reconfiguration	In-water piles	Approximately twenty-six 12- to 14-inch creosote-treated timber piles)	Approximately 17 piles (sixteen 24-inch steel piles; one 16-inch steel pile)	Net decrease of nine in-water piles
	Overwater cover	Approximately 1,384 sf fixed concrete dock	Approximately 3,162 sf of new overwater cover (2,612 sf of wave attenuator float, 175 sf of two FRP-grated finger floats, 349 sf of FRP-grated gangway, 26 sf of gangway abutment)	Net increase of 1,778 sf overwater cover
South Dock Reconfiguration	In-water piles	Approximately 42 piles (forty 12- to 14-inch creosote-treated timber piles; two 16-inch concrete encapsulated piles)	Approximately six 16-inch steel piles	Net decrease of 36 in-water piles

Project Portion	Element	Features Removed	Features Replaced	Net Change
	Overwater cover	Approximately 2,810 sf existing cover (1,930 sf of fixed concrete dock; 40 sf of aluminum ramp; seven 120-sf wood finger docks)	Approximately 714 sf of new overwater cover (381 sf of grated general-purpose float, 90 sf of two grated finger floats, 214 sf of grated gangway, 29 sf of concrete gangway abutment)	Net decrease of 2,096 sf overwater cover
Overwater Access Platform	In-water piles	Not applicable	Approximately six pin piles (6-inch steel piles)	Net increase of six in-water piles
	Overwater cover	Not applicable	Approximately 513 sf of grated overwater cover	Net increase of 513 sf overwater cover
Derelict Dock Removal	In-water piles	Four 12-inch creosote-treated piles removed	n/a	Net decrease of four in-water piles
	Overwater cover	Approximately 215 sf of concrete dock	n/a	Net decrease of 215 sf overwater cover
<b>Total</b>	<b>In-water piles</b>	<b>Approximately 73 piles removed</b>	<b>Approximately 29 piles installed</b>	<b>Net decrease of 44 in-water piles</b>
	<b>Overwater cover</b>	<b>Approximately 4,790 sf of existing cover removed</b>	<b>Approximately 4,650 sf of new overwater cover installed</b>	<b>Net decrease of approximately 140 sf of overwater cover</b>

Notes:

1. Table does not include repair and fiberglass encapsulation of existing north dock piles. Up to five 14-inch decayed creosote-treated timber pile tops will be removed and replaced with ACZA treated timber piles and wrapped with fiberglass jacket.
2. Approximately 1,470 sf of new overwater cover will consist of FRP grating.
3. An existing floating wood dock will be removed from the south dock during demolition, temporarily stored on site, and replaced for reuse as part of the reconfigured south dock. This floating wood dock is not included in the overwater cover calculations shown here.

## 1.5 Vegetation Disturbance and Restoration

To construct the new access pathways, plaza paving, and expanded north beach, up to 13 trees located along the shoreline and in the uplands will be removed and replaced with up to 21 new trees (Table 3; Figures 5 and 6). Approximately 8,298 sf of invasive native and non-native riparian and upland vegetation will be removed during construction, and 5,432 sf of native shrub and groundcover vegetation will be installed, including shoreline riparian, upland, and stormwater swale vegetation.

All planting areas will be irrigated and maintained per the park maintenance plan to establish and support species growth. Table 3 summarizes the proposed tree and vegetation removal and replacement activities. All plant installations will occur above the ordinary high-water mark (OHWM).

**Table 3  
Areas of Vegetation Disturbance and Restoration**

<b>Project Component</b>	<b>Location</b>	<b>Quantity or Area</b>
Vegetation removal	North beach	4,097 sf
	South on-grade pathway	3,031 sf
	Add. Alt. 1: Gathering Plaza	1,170 sf
	<b>Total</b>	<b>8,298 sf removed</b>
Overall revegetation	North beach	3,214 sf
	South on-grade pathway	1,706 sf
	Add. Alt. 1: Gathering Plaza	512 sf
	<b>Total</b>	<b>5,432 sf installed</b>
Tree removal	North beach	7 trees (deciduous)
	South on-grade pathway and ramp	3 trees (deciduous) – Previously removed during Boiler Building Phase 1 Renovation in 2024
	Plaza	3 trees (deciduous) – Previously removed during Boiler Building Phase 1 Renovation in 2024
	<b>Total</b>	<b>13 trees removed</b>
Tree installation	North beach	17 trees
	South on-grade pathway	3 trees
	Plaza	1 tree
	<b>Total</b>	<b>21 trees installed</b>

## 1.6 Project Schedule

The Project is anticipated to be constructed in two phases and will occur over 14 months beginning in or around July 2023, or once all permits and approvals are issued. In-water work will occur during the approved regulatory work window for Lake Washington, which is July 16-September 30 for the Project. Overwater or upland activities may occur outside of the in-water work window. The following construction phase and sequences are proposed:

### 2. Phase 1: July 2023 to December 2024

- a. Boiler Building Repairs
- b. Boiler Building Restroom Annex Renovation
- c. Concession Stand Repairs

### 3. Phase 2: May 2026 to October 2027

- a. North Dock Repairs

- b. Central Dock Reconfiguration
- c. South Dock Reconfiguration
- d. Removal of Derelict Dock
- e. Overwater Access Platform and Lakebed Debris Removal
- f. Waterfront Plaza Renovation and Access Upgrades
- g. North Beach Enhancements
- h. Waterfront LID
- i. Irrigation Intake System
- j. Fire Water Line and Other Utilities Improvements

## 1.7 Statement of Accuracy and Assumptions

The information provided in this CAS has been prepared by professional biologists, planners, and engineers using the best available science to provide an evaluation of critical areas and potential impacts. This CAS documents that there are no wetlands or watercourses present in or near the Project area. In addition, no bald eagle nests were identified within 660 feet of the Project area, as identified per U.S. Fish and Wildlife Service (USFWS) bald eagle nest disturbance management guidelines (USFWS 2007). The Project area contains geologic hazard areas and FWHCAs as defined by MICC 19.07.160 and 17.07.170, respectively. Discussion of risk mitigation through design and construction, and no net loss of ecological functions, is provided.

## 1.8 Review of Existing Information

Anchor QEA reviewed the following sources of information to support field observations:

- City of Mercer Island GIS mapping (City of Mercer Island 2022)
- King County interactive mapping (King County 2022)
- National Marine Fisheries Service and U.S. Fish and Wildlife Service information about federally listed species (NMFS 2022, USFWS 2022a)
- Natural Resources Conservation Service soils mapping (NRCS 2020)
- National Wetland Inventory mapping (USFWS 2022b)
- Washington Department of Fish and Wildlife Priority Habitats and Species and salmonid mapping (WDFW 2022a, 2022b)
- Geotechnical reports prepared by GeoEngineers for the Project (Appendices C and D)
- Wave and Wake Modeling Report prepared by Blue Coast Engineering for the Project (Appendix E)
- Tree Report prepared by the City for the Project (Appendix F)
- Pre-Construction Subsurface Investigation Results Summary (Appendix G)
- Luther Burbank Park Waterfront Improvements Shoreline Vegetation Plan (Appendix H)

## 2 Project Area Description

Existing structures in the Project area include the dock and Boiler Building. The Boiler Building is located within the waterfront plaza west of the dock and is currently used for park storage and restrooms. The shoreline is defined by a vertical concrete bulkhead spanning approximately 200 lf. The bulkhead delineates the plaza area, which includes concrete paving and pavers. To the north of the dock along the plaza's shoreline bulkheads is the *Handsome Bollards* public art installation, which includes a series of bollards approximately 6 feet apart with bronze hands that hold a metal chain. Access to the plaza is currently provided via three routes: the gravel maintenance driveway at the south end of the Project; the asphalt pathway at the north end; and the ADA-accessible gravel switchback trail that runs adjacent to the Off-Leash Dog Area and connects to the existing trail along the north shoreline.

Existing stormwater features include a stormwater conveyance swale that abuts the western edge of the gravel maintenance driveway and drains to an existing catch basin. The catch basin drains to the lake through a 6-inch PVC storm drain to an outfall south of the plaza. Two additional catch basins located north of the plaza, between the asphalt pathway and Boiler Building, drain to the lake through a 6-inch PVC storm drain and outfall in the north end of the plaza. The northern outfall runs underneath the plaza and through the existing bulkhead to the lake.

Two decommissioned underground storage tanks (USTs) associated with previous boiler plant operations are located in the Project area. These are registered with the Washington State Department of Ecology. Petroleum hydrocarbons and polycyclic aromatic hydrocarbons associated with the tanks and former boiler have been detected in site soil and groundwater (GeoEngineers 2022), with some concentrations above Model Toxics Control Act Method A cleanup levels (see Appendix G). The City has engaged an environmental consultant to develop a remediation plan to implement with construction of the proposed Project. Any contaminated materials removed from the site will be properly disposed of at an approved upland landfill.

The existing dock is a fixed 5,500-sf dock structure with wood and concrete decking, supported by 107 creosote-treated timber piles (14- to 16-inch-diameter). The deck is solid concrete with no grating and currently impedes light transmission to the aquatic environment. The existing dock structure includes three main segments, each measuring 8 feet wide. Eight narrow (22-by-4-foot) timber fixed dock fingers provide moorage opportunities for small powerboats along the existing dock. A 500-sf float and gangway (ramp) flank the existing dock structure. The float is intended to be reused in the new design.

Shoreline structures within the Project area include the concrete bulkhead, brick and concrete pavers at the plaza, and the gravel maintenance road. The concrete bulkhead is in good condition; however, the brick pavers and the maintenance road present hazards. The brick pavers are a potential tripping

hazard with uneven surfaces, and the maintenance road shows signs of erosion from runoff on the road and adjacent areas. Overwater structures within the Project area include the concrete dock, finger docks, derelict dock, and timber piles. The concrete dock and creosote-treated timber piles are in good condition. However, the timber cap beams and mooring piles on the south end of the dock show signs of decay and need repair. The derelict dock at the southern edge of the property line is assumed to have been built at or around the same time as the main dock facility adjacent to the Boiler Building. The derelict dock was decommissioned by the City at least 10 years ago and is not planned for replacement or redevelopment in the future. Removal of the dock was added to this project per the conditions of Ecology permit no. 2024-NWRO-8260 issued on April 21, 2025.

Outside of the Project area, portions of the Park have been left undeveloped as wildlife habitat. Wetlands are located at the north and south ends of the Park. The Park also contains areas with maintained lawns surrounded by stands of trees.

As described in Section 3 of this CAS, the critical areas analysis for wetlands, watercourses, FWHCAs, and geologically hazardous areas was completed within the Project area, and the bald eagle nest survey area was expanded to include the entire Park.

## **2.1 Topography**

The topography of the Park and Project area slopes down from the inland side of the Park to the Lake Washington shoreline. Topographic maps identify the highest elevation in the Project area at approximately 44 feet North American Datum of 1988 (NAVD88), sloping down toward the shoreline (Figure 7).

GeoEngineers completed a geotechnical assessment and report for the upland portions of the Project area (Appendix C). The report describes that the Boiler Building and restroom annex are constructed into the toe of an upland slope that grades downward from the higher elevation portions of the Park to the west to shoreline of Lake Washington. The slope behind the buildings is on the order of 50 to 60 feet tall and is inclined between 2 Horizontal to 1 Vertical (2H:1V) and 1.25H:1V (50% to 80% slopes). There is about a 1-foot gap between the back (western) sides of the building and the slope except for the lower 4 to 5 feet of the slope toe where the western walls of the building retain the lower portion of the slope.

## **2.2 Soils**

The Natural Resources Conservation Service (NRCS) Web Soil Survey identifies one soil series, Kitsap silt loam, 2% to 8% slopes, within the Project area (NRCS 2020; Figure 8).

The Washington State Department of Natural Resources (DNR) Geologic Information Portal (DNR 2020) identified nearby hand augers conducted for the former steam plant. These investigations indicate the subsurface consists of alluvial sand overlying glacial drift deposits of silty clay.

Geotechnical testing conducted for the upland portion of the Project (Appendix C) included three upland borings that revealed the following:

- B-1 and B-2: 6 inches of sod above glacial till
- B-3: 10 inches of concrete and base course over 7 feet of fill, over glacial till

Three in-water borings revealed “lake sediments underlain by weathered glacially consolidated soil” (Appendix D).

## 2.3 Hydrology

The Project is located in the Cedar-Sammamish Basin Water Resource Inventory Area 8 (Ecology 2020). Hydrologic characteristics in the Park are influenced by regional groundwater, direct precipitation, surface water runoff, wetlands, and Lake Washington. Wetlands and watercourses are located in the Park but are not present within the Project area, as described in Sections 3.2 and 3.3.

No stream channels, areas of inundation, or seeps were identified in the Project area during the February 19, 2020, site visit. However, based on conversations with the project team we understand that groundwater seepage is routinely observed on the face of the hillside in some areas. This is not unusual on slopes composed of glacially consolidated soils. Perched groundwater tends to accumulate within portions of the deposits that contain higher percentages of sand and gravel and lower percentages of silt and clay, or within areas that have higher degree of weathering. Perched groundwater volumes tend to fluctuate throughout the year, typically being highest during winter and spring months and during periods of prolonged precipitation (Appendix C).

Lake Washington is hydraulically controlled by USACE, as described in Section 3.4.3. WDFW mapping does not identify any freshwater surface stream channels to Lake Washington within the Project area (WDFW 2022a, 2022b).

## 2.4 Plant Communities

The Project area includes trees, mowed lawn, developed recreational facilities, a small gravel beach with adjacent shrubs, and the dock. No wetlands are located within the Project area, as described in Section 3.2. In Lake Washington, areas of dense non-native aquatic vegetation, Eurasian milfoil (*Myriophyllum spicatum*), can be found intermittently along the shoreline of the Park.

Freshwater emergent wetland habitat is mapped several hundred feet north of the Project area (Figure 9). These wetland features were reviewed during the bald eagle survey. No freshwater

wetland habitat is mapped within the Project area (USFWS 2022a; WDFW 2022a; King County 2022; City of Mercer Island 2022). Anchor QEA ecologists did not identify any freshwater wetlands in the Project area during the site visits, substantiating the online data.

## 3 Critical Areas Description

This section describes the presence of critical areas within the Project area as defined under MICC Chapter 19.07. Critical areas evaluated include wetlands, watercourses, FWHCAs, and geologically hazardous areas.

### 3.1 Methods

To document and describe wetlands, watercourses, FWHCAs, and geologically hazardous areas within the Project area, Anchor QEA reviewed existing information (Section 1.8) and performed an aerial photograph assessment. Additionally, Anchor QEA conducted a critical areas site visit at the Project area on February 19, 2020. Subsequent site visits have occurred in 2021 and 2022 as part of this Project, confirming existing conditions within the Project area. The entire Project area was accessible during the site visits. During the site visits, Anchor QEA documented general information regarding habitats and dominant plant species and communities. Potential wetland features were evaluated based on MICC wetland delineation criteria; however, no wetland conditions were observed within the Project area.

Visible wildlife species, tracks, and other signs observed during the site visits were documented. The bald eagle nest survey was performed by walking and scanning trees within the Park using binoculars.

The OHWM of Lake Washington was not delineated during the site visit because Lake Washington is hydraulically controlled, and the low- and high-water elevations are established. Photographs taken to document vegetation and habitat conditions are included in Appendix B.

### 3.2 Wetlands

No wetland conditions were observed within the Project area during the February 2020 site visit, subsequent site visits, or as identified by online mapping. Within the Park, USFWS (2022b) and WDFW (2022a) identify wetlands located in the northern and southern parts of the park, more than 800 feet away from the bulk of the Project area. These wetlands were observed during the site visit but not delineated because they are well outside of the Project area. Because there are no wetlands within the Project area, and no impacts to wetlands or wetland buffers will result from the Project, no further evaluation of wetlands is provided in this CAS.

Per the conditions of approval for Ecology permit no. 2024-NWRO-8260 (April 21, 2025), the Project will remove a decommissioned stub pier (also referred to as a derelict dock) located at the south property edge of the shoreline as project mitigation. This dock is located adjacent to the south wetland, which was last delineated in 2014. The wetland is located landward above the OHWM, and demolition of the derelict dock will be completed from the water by barge only, with no disruption to the landward side of the dock, including the wetland, anticipated. Given that this Project element was

added late in the process and no disturbance to the wetland is anticipated, the south wetland was not delineated again as part of this project.

### 3.3 Watercourses

No streams, drainage channels, areas of inundation, seeps, or associated riparian habitat were observed within the Project area during the February 2020 site visit, subsequent site visits, or as identified by online mapping. Two riverine channels are mapped south of the Park boundary and are more than 1,000 feet from the primary Project area (Figure 9; USFWS 2022a; WDFW 2022a). Because there are no streams or other watercourses within the Project area, and no impacts to streams or stream buffers will result from the Project, no further evaluation of watercourses is provided in this CAS.

### 3.4 Fish and Wildlife Habitat Conservation Areas

Per MICC Chapter 19.07.170, FWHCAs include the following:

- Areas where state or federally listed endangered, threatened, sensitive, or candidate species, or species of local importance, have primary association
- Priority habitats and areas associated with priority species identified by the WDFW
- Areas used by bald eagles for foraging, nesting, and roosting, or within 660 feet of a bald eagle nest
- Watercourses and wetlands and their buffers
- Biodiversity areas

The only FWHCA within the Project area is Lake Washington, which contains federally listed and state priority fish species, and potential bald eagle habitat.

#### 3.4.1 *Vegetation and Shoreline Conditions*

The Project area contains a mixture of native and non-native trees and shrubs, mowed lawn areas, developed recreation facilities, concrete bulkheads, and a small beach. Photographs of the Project area are included in Appendix B.

North of the Boiler Building, riparian vegetation near the lake shoreline includes deciduous trees (e.g., big-leaf maple and Lombardy poplar), native shrubs, and invasive Himalayan blackberry. Upslope from the shoreline, vegetation includes coniferous and deciduous trees, native shrubs, abundant Himalayan blackberry, and areas of mowed lawn. The area in front of the Boiler Building consists of the waterfront plaza and shoreline supported by concrete bulkheads, with no riparian vegetation. Also north of the Boiler Building is a narrow nearshore (beach) area with a gravel substrate, chained logs, and boulders. Dense non-native aquatic vegetation, Eurasian milfoil, is present in the lake around the dock facility.

South of the waterfront plaza is an existing gravel access driveway running through a mixed coniferous-deciduous forest. Native shrubs and Himalayan blackberry are also present in this area. The South Shoreline Trail Restoration Project, which was permitted separately, begins south of the waterfront plaza and is located between the gravel access driveway and the lake shoreline.

Vegetation around the derelict dock at the south edge of the Park is overgrown and consists of deciduous trees, native shrubs, and invasive species such as Himalayan blackberry and English ivy.

### *3.4.2 Wildlife and Habitat*

Vegetation communities within the Project area provide a range of habitat for terrestrial wildlife. Wildlife relies on vegetation for food, shelter, and cover from predators. Wildlife diversity is generally related to the structure and composition of plant species within vegetative communities. In general, vegetation communities that contain few species or vegetative layers (herbaceous vegetation, shrubs, or trees) support a low diversity of wildlife, whereas vegetation communities that are more complex and contain a wide variety of plant species and vegetative layers can support a greater diversity of wildlife. The dominant presence of non-native vegetation and high level of human activity reduce the overall quality of potential habitat for wildlife species. The Park is surrounded by residential development, so vegetated corridors connecting habitat within the Project area to undisturbed habitats are limited.

Although a comprehensive wildlife survey has not been conducted within the Project area, except for the bald eagle survey, vegetation communities within the Project area likely provide habitat for a variety of terrestrial wildlife species common to King County and western Washington that are adapted to park settings within urban residential areas. The Project area provides habitat for native and non-native bird, amphibian, reptile, insect, and small mammal species to breed, forage, and rest.

Portions of Lake Washington provide quality habitat for aquatic species, as described in Section 3.4.3. Within the Project area, the shoreline condition, categorized by the south, central, and north areas, includes the following:

- The south Project area shoreline is located south of the waterfront plaza. This area consists of small areas of lawn, shrubby riparian vegetation along the lake shore, a gravel driveway, and trees/shrubs and invasive vegetation farther upslope. Improvements to the south shoreline trail (outside the Project area) are being permitted as part of a separate project. Further south toward the derelict dock, a beaver dam exists in the small pond located within the south wetland. The dam is more than 1,000 feet away from the primary Project area and approximately 200 feet away from the derelict dock.
- The central Project area shoreline, adjacent to the waterfront plaza, has a vertical bulkhead slope. The lake bottom substrate contains sand and silt with small rocks and remnant concrete and timber debris from past uses. The central shoreline is mostly developed, and vegetation is

limited to dense non-native aquatic vegetation, Eurasian milfoil (*Myriophyllum spicatum*), found near the park's shoreline.

- The north Project area shoreline consists of a small gravel beach with fringing trees and shrubs, with a trail, grass lawn areas, and trees located farther upslope.

### 3.4.2.1 Bald Eagle Survey

One bald eagle nest was observed in the north portion of the Park in a Douglas fir tree, about 1,400 feet from the Project area boundary. During the 2020 site visit, a pair of bald eagles were observed perched on the nest tree and on adjacent Douglas fir trees.

Trees within the Project area are generally less than 40 feet tall, and not of a size typically associated with bald eagle perching and roosting. Overall, no potential bald eagle nest trees were observed within the Project area and no bald eagle nests were identified within 660 feet of the Project area, the minimum distance identified under USFWS bald eagle nest disturbance management guidelines to avoid disturbances to nesting bald eagles (USFWS 2007) and as regulated per MICC 19.07.170.

### 3.4.3 Lake Washington

Lake Washington is a FWHCA per the criteria in MICC 19.07 (Critical Areas). The OHWM of Lake Washington was not delineated during the February 2020 site visit, or more recently, because the lake is hydraulically controlled by USACE at the Hiram M. Chittenden Ballard Locks. USACE lowers the lake in the winter months (typically in December) to a low-water elevation of 16.67 feet NAVD88 to allow for flood storage. In the summer (typically in June), the lake level is raised to a high-water elevation of 18.67 feet NAVD88. Therefore, the Project defines the OHWM as 18.67 feet NAVD88 and the ordinary low water mark as 16.67 feet NAVD88.

Lake Washington provides habitat for a variety of aquatic species. Salmonids documented in Lake Washington include bull trout (*Salvelinus confluentus*), Chinook salmon (*Oncorhynchus tshawytscha*), Puget Sound steelhead (*O. mykiss*), sockeye salmon (*O. nerka*), coho salmon (*O. kisutch*), and kokanee (*O. nerka*) (WDFW 2022a, 2022b). Other fish species that are present in Lake Washington include coastal cutthroat trout (*O. clarkii clarkii*), largemouth and smallmouth bass (*Micropterus salmoides* and *M. dolomieu*), yellow perch (*Perca flavescens*), and black crappie (*Pomoxis nigromaculatus*).

### 3.4.4 Priority Species and Habitats

The WDFW Priority Habitats and Species data (WDFW 2022a) do not document occurrences of any terrestrial species or priority habitats in the Project area or the Park. South of I-90, several areas are mapped as priority habitat biodiversity corridors. Priority fish species documented in Lake Washington are described in Section 3.4.3. Analysis of federally listed species and critical habitats is described in Section 3.4.5.

### 3.4.5 ESA-Listed Species and Critical Habitat

Species and critical habitats listed under the federal Endangered Species Act (ESA) and under National Marine Fisheries Service (NMFS) and USFWS jurisdiction in western Washington are referenced on the agencies' websites. The NMFS identifies ESA-listed species that occur or may occur within a broad geographic area, such as an evolutionarily significant unit (ESU) or a distinct population segment (DPS), rather than a project-specific location (NMFS 2022). The USFWS identifies ESA-listed species that may occur within a specific location where a project is proposed (USFWS 2022a). Table 4 lists species and critical habitat that are likely to occur in the vicinity of the Project. A separate Biological Evaluation has been prepared for the Project that describes these species in detail (Anchor QEA 2022).

**Table 4  
Federally Listed Species and Critical Habitat Likely to Occur in the Project Vicinity**

Species	Jurisdiction	ESA Status	Critical Habitat
Chinook salmon ( <i>Oncorhynchus tshawytscha</i> ) Puget Sound ESU	NMFS	Threatened	Designated
Steelhead ( <i>O. mykiss</i> ) Puget Sound DPS	NMFS	Threatened	None designated within the action area
Bull trout ( <i>Salvelinus confluentus</i> ) Coastal-Puget Sound DPS	USFWS	Threatened	Designated
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	USFWS	Threatened	None designated within the action area

## 3.5 Geologically Hazardous Areas

MICC 19.07.160 describes three categories of geologically hazardous areas subject to critical areas review: 1) erosion hazard areas, 2) landslide hazard areas, and 3) seismic hazard areas. Information about these features in the Project area is described in the following sections, based on City and resource agency mapping and code definitions. Geotechnical engineering review of the area is summarized from the Project geotechnical reports in Appendices C and D (see also Section 4).

### 3.5.1 Erosion Hazard Areas

As defined in MICC 19.16.010, erosion hazard areas are those areas greater than 15% slope and subject to a severe risk of erosion due to wind, rain, water, slope, and other natural agents, including those soil types or areas identified by the NRCS as having a "severe" or "very severe" rill and inter-rill erosion hazard.

The upland portion of the Project area is located within a mapped erosion hazard area (Figure 10). Mapped soils in the Project area consist of Kitsap silt loam, 2% to 8% slopes (Figure 8). This soil type has a slight to moderate erosion hazard (SCS 1973).

### 3.5.2 *Landslide Hazard Areas*

Per MICC 19.16.010, a landslide hazard is defined as an area with one or a combination of the geologic, topographic, and hydrologic factors as follows:

1. Areas of historic failures
2. Areas with all three of the following characteristics:
  - a. Slopes steeper than 15%
  - b. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock
  - c. Springs or groundwater seepage
3. Areas that have shown evidence of past movement or that are underlain or covered by mass wastage debris from past movements
4. Areas potentially unstable because of rapid stream incision and streambank erosion
5. Steep slopes consisting of any slope of 40% or greater calculated by measuring the vertical rise over any 30-foot horizontal run.

The upland portion of the Project area is located within a mapped landslide hazard area (Figure 11). The Project area contains slopes greater than 15% and 40%, meeting the above code definitions.

The City's development standards for landslide hazard areas require the following buffers (when more than one condition applies to a site, the largest buffer shall be applied):

- Steep slope buffer widths shall be equal to the height of a steep slope, but not more than 75 feet, and applied to the top and toe of slopes.
- Shallow landslide hazard areas shall have minimum 25-foot buffers applied in all directions.
- Deep-seated landslide hazard areas shall have 75-foot buffers applied in all directions.

Portions of the Project would be located within landslide hazard areas (based on slope and potential seepage near the boiler building and restroom annex) and toe-of-slope buffer areas.

### 3.5.3 *Seismic Hazard Areas*

Seismic hazard areas are defined by the City as areas subject to severe risk of damage because of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction, or surface faulting (MICC 19.16.010).

The upland shoreline in the Project area is mapped within a seismic hazard area and is in the vicinity of the Seattle Fault zone (Figure 12).

## 4 Critical Areas Impacts Assessment and Mitigation

This section provides a summary of potential impacts to FWHCAs and geologically hazardous areas, and mitigation to avoid and minimize impacts. As discussed in Section 3, these are the only types of critical areas that occur within the Project area and that could potentially be affected by the Project.

The applicant must avoid, minimize, and mitigate impacts to environmentally critical areas and associated buffers consistent with mitigation sequencing described in MICC 19.07.100. Mitigation sequencing and best management practices (BMPs) are described further in Section 5.

### 4.1 Fish and Wildlife Habitat Conservation Areas

#### 4.1.1 City Code Requirements

The City's regulations for FWHCAs (MICC 19.07.170.C) state that development proposals shall implement wildlife and habitat protection measures identified in the wildlife habitat assessment and follow the USFWS (2007) National Bald Eagle Management Guidelines.

#### 4.1.2 Project Impacts

The primary potential construction impact on fish and wildlife species and associated habitat is temporary disturbance and removal of vegetation (Section 1.5). Temporary disturbance during construction will include in-air noise generated by heavy construction equipment such as small excavators and bulldozers, dump trucks, and other standard construction equipment, and both in-air and underwater noise created by pile driving. Small areas of the shoreline below the OHWM will need to be dewatered during installation of the irrigation intake and stormwater outfall. Construction also has the potential to impact water quality through potential spills of fuels or other petroleum products used in construction equipment, and through increased turbidity during removal and installation of piles.

These potential impacts are discussed in this section. A separate Biological Evaluation has been prepared for the Project to address impacts on federally listed fish species and marbled murrelet that may use the Project area (Anchor QEA 2022). Measures to address these impacts are described in Section 5.

##### 4.1.2.1 Construction Noise and Disturbance

In-air noise will occur periodically throughout the construction period described in Section 1.6. Underwater noise generated by pile driving will be limited to the approved in-water work period (July 16 to September 30) to minimize impacts on salmonid species.

Noise associated with construction could result in avoidance behavior by some fish and wildlife species. Areas near the pile driving location could experience underwater noise levels injurious to

fish, as described in the Biological Evaluation prepared for the project. Fish would be able to move out of affected areas, and in-water work would be limited to the agency-approved work windows to minimize impacts on listed fish species.

The Project area is within a popular park that experiences ongoing human disturbance, and it is expected that wildlife would resume use of the Project area once construction is complete. No bald eagle nests are located within the 660-foot minimum distance identified under USFWS bald eagle management guidelines to avoid disturbances to nesting bald eagles (USFWS 2007) and as regulated per MICC 19.07.170 (2020). The noise levels associated with operation of the Park after construction are expected to be consistent with current noise levels.

The small areas of the shoreline below the OHWM that will be dewatered during installation of the irrigation intake and stormwater outfall are located along the existing waterfront plaza where habitat has been degraded by past land use. Given the short period of dewatering required, small area affected, and low habitat quality, impacts to aquatic habitat would be minor.

As mitigation for the project, debris (trash, bricks, angled rocks, etc.) that is 4 inches in diameter or greater will be removed within 14'-6" waterward of the existing bulkhead prior to construction of the new overwater platform. Divers will perform this work during the approved in-water work window to minimize impacts on salmonid species.

#### **4.1.2.2 Water Quality Impacts**

The use of construction equipment over, in, and near the waters of Lake Washington has the potential to release petroleum products into the water if a leak or accidental spill occurs. The risk of such impacts is low provided that contractors adhere to the BMPs listed in Section 5.

Removal, repair, and installation of piles could result in temporary minor increased turbidity in Lake Washington. This would be localized to the areas near the piles. Fish would be able to move away from the construction area to avoid turbidity. In-water work will be restricted to the approved in-water work period (July 16 to September 30) to minimize impacts on salmonid species.

The potential for soil erosion from upland areas is discussed in Section 4.2.1 and BMPs are discussed in Section 5. With implementation of these measures, it is unlikely that eroded soil would enter nearby surface waters during construction or operation of the Project.

#### **4.1.2.3 Vegetation Removal**

Construction will require the removal of native and non-native vegetation as described in Section 1.5. While this represents a relatively small amount of vegetation removal relative to vegetation throughout the Park, it is a loss of potential habitat for terrestrial wildlife species. Removal of riparian vegetation would reduce the amount of shade and sources of invertebrate prey for fish species in the area north

of the waterfront plaza. This impact is considered temporary because additional native plantings will be installed in the Project area, as described in Section 5. The replacement of non-native vegetation with native riparian plants will improve ecological function from existing conditions.

### **4.1.3 Mitigation Measures**

With implementation of the mitigation sequencing and construction BMPs described in Section 5, and the planting plan, nearshore habitat restoration, and aquatic habitat improvements discussed below, the Project would result in no net loss of fish and wildlife habitat functions in the Project area.

#### **4.1.3.1 Planting Plan**

As described in Section 1.5, construction will include the removal of up to 13 trees (6 of which were removed during the Boiler Building Phase 1 Renovation) and replacement with 18 new trees (Table 3; Figures 5 and 6). Approximately 6,025 sf of native and non-native riparian and upland vegetation will be removed during construction, and 5,350 sf of native shrub and groundcover vegetation (including tree plantings) will be installed, including shoreline riparian, upland, and stormwater swale vegetation. Installation of the stormwater swale along the driveway will help to filter stormwater. A portion of the vegetation to be removed consists of non-native invasive species, which will be replaced with native plants that provide more diversity and habitat value for wildlife.

The Tree Report in Appendix F describes compliance with MICC 19.10 – Trees.

#### **4.1.3.2 Nearshore and Aquatic Habitat Restoration**

The Project will enhance the area of nearshore habitat along the lake to approximately 649 sf. Western red cedars will be installed near the north beach, providing additional shading for the lake.

The completed Project will provide a minor benefit to aquatic habitat in Lake Washington. A net reduction of 44 piles and 140 sf of overwater cover would occur. Creosote-treated piles will be replaced with steel piles or encapsulated in fiberglass, improving water quality. Existing concrete decking will be replaced with grating, allowing better light penetration. The center and south docks will be demolished and replaced in deeper water to open the nearshore habitat for use by salmonids. Debris (trash, bricks, angled rocks, etc.) sized 4" in diameter and larger will be removed from the lakebed within 14'-6" of the bulkhead prior to construction of the overwater platform.

## **4.2 Geologically Hazardous Areas**

The Project will alter existing geologically hazardous areas and their associated buffers. These impacts can be effectively mitigated through Project design and application of BMPs, as discussed in this section.

## 4.2.1 *Erosion Hazard Areas*

### 4.2.1.1 **City Code Requirements**

The City's development standards for erosion hazard areas (MICC 19.07.160.E) require all development proposals to demonstrate compliance with MICC 15.09, stormwater management program, and to show that the proposed work will not create a net increase in geological instability on or off site.

### 4.2.1.2 **Project Impacts**

Construction of the Project will include removal of existing concrete and pavers; clearing of vegetation; trenching to install irrigation piping, fire water piping, electrical conduit, and sewer/stormwater lines; and excavation of soils to install ADA-accessible features, stormwater improvements, and utility upgrades/additions. There is potential for disturbed soils to erode and potentially be washed into Lake Washington unless proper measures are taken.

### 4.2.1.3 **Mitigation Measures**

The Project geotechnical report indicates that the Project area should not be susceptible to erosion hazards with implementation of geotechnical engineering recommendations (Appendix C). Additional BMPs are described in Section 5. With these measures in place, no impacts to erosion hazard areas are anticipated during construction. All disturbed areas will be revegetated or resurfaced, as applicable, and stormwater management measures meeting applicable requirements will be installed, as discussed in Section 1.3. Therefore, the Project will not create a net increase in geological instability on or off site that would result in additional erosion.

## 4.2.2 *Landslide and Seismic Hazard Areas*

### 4.2.2.1 **City Code Requirements**

The Project will be constructed consistent with City code requirements for landslide and seismic hazard areas. City code (MICC 19.07.160.B) contains the following requirements for alteration of landslide and seismic hazard areas:

1. Alteration of landslide hazard areas and seismic hazard areas and associated buffers may occur if the critical area study documents find that the proposed alteration:
  - a. Will not adversely impact other critical areas;
  - b. Will not adversely impact the subject property or adjacent properties;
  - c. Will mitigate impacts to the geologically hazardous area consistent with best available science to the maximum extent reasonably possible such that the site is determined to be safe; and
  - d. Includes the landscaping of all disturbed areas outside of building footprints and installation of hardscape prior to final inspection.

2. Alteration of landslide hazard areas, seismic hazard areas and associated buffers may occur if the conditions listed in subsection (B)(2) of this section are satisfied and the geotechnical professional provides a statement of risk matching one of the following:
  - a. An evaluation of site-specific subsurface conditions demonstrates that the proposed development is not located in a landslide hazard area or seismic hazard area;
  - b. The landslide hazard area or seismic hazard area will be modified or the development has been designed so that the risk to the site and adjacent property is eliminated or mitigated such that the site is determined to be safe;
  - c. Construction practices are proposed for the alteration that would render the development as safe as if it were not located in a geologically hazardous area and do not adversely impact adjacent properties; or
  - d. The development is so minor as not to pose a threat to the public health, safety and welfare.

#### **4.2.2.2 Project Impacts**

Construction will include grading on steep slopes and within toe-of-slope buffer areas (MICC 19.07.160.C) for construction of trails, ADA ramp, and stormwater conveyance. Grading in these areas has the potential to increase the likelihood of a landslide during construction.

While the Project area is located within a seismic hazard area, the geotechnical reports (Appendices C and D) found that the Project area is underlain by dense to very dense glacially consolidated soils with a low risk of liquefaction. Liquefaction occurs during vibration or shaking of the ground, usually during an earthquake, when soils lose strength and become more like a liquid than a solid, posing risks to structures. Another potential risk during earthquakes is lateral spreading, which occurs when large blocks of soil on the surface move when an underlying soil layer loses strength. Due to the low liquefaction risk at the Project area, the geotechnical reports conclude there is also a low risk of lateral spreading occurring at this site (Appendices C and D).

The Project area is in the vicinity of the Seattle Fault zone. However, because bedrock in this area is covered by hundreds of feet of glacial soils, it is unlikely that movement of the fault would result in significant surface rupture at the ground surface (Appendices C and D).

#### **4.2.2.3 Mitigation Measures**

The Project will incorporate the geotechnical engineering design and construction recommendations described in Appendix C to avoid and minimize potential impacts to landslide hazard areas.

The Project will be designed to meet current seismic design standards and geotechnical engineering recommendations (Appendices C and D). The Boiler Building will be retrofitted to withstand a seismic event, and the dock piles will be driven to depth to meet a competent soil criterion based on design structural loads. Additional construction BMPs are described in Section 5.

## 5 Mitigation Sequencing and Best Management Practices

The City requires Projects to implement mitigation sequencing as described in MICC 19.07.100. The following summarizes how the Project fulfills each step in the mitigation sequencing process:

- A. Avoiding the impact altogether by not taking a certain action or parts of an action.** The Project is designed to include the minimum necessary impacts to critical areas to support the purpose and need. Therefore, other potential impacts from material expansion of structures, use of less environmentally friendly materials, or further encroachment into critical areas have been avoided through Project design. For example, the new float is the least impactful option for providing the necessary wave attenuation, as compared to other alternatives, including in-water fill to construct more traditional attenuation components such as jetties, weirs, or similar.
- B. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.** The Project design limits vegetation removal and soil disturbance to the minimum needed. New overwater structures will allow for light penetration to the water to the maximum extent feasible, minimizing shading impacts to aquatic habitat, and there will be no net increase in overwater cover. The wave attenuator float was relocated further offshore from where the existing concrete pier is located in response to feedback from the Washington Department of Fish and Wildlife to minimize nearshore shading impacts of the overwater structure. The wave attenuator float minimizes impacts to the shoreline environment by providing protection from wave and wake energy to the recently restored shoreline area that was supplemented by placement of habitat grade gravel and LWD and the planting of native riparian plant species.
- C. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.** Areas that are disturbed during construction and that are located outside of pathways, plaza surfacing, and other developed facilities will be revegetated. The minor impacts to the shoreline environment from replacing the existing central dock with a wave attenuator float are offset by avoidance and minimization measures described above.

To rehabilitate and restore the affected environment, the City prepared a shoreline vegetation plan to monitor and manage vegetation within 20 feet of the shoreline. Management activities proposed in the plan include removal of invasive species and planting with a variety of groundcover, shrubs, and trees native to the Central Puget Sound lowlands as needed. The vegetation plan is included in Appendix H.

Additionally, the current condition of the lakebed within 14'-6" of the bulkhead will be rehabilitated with the removal of trash, bricks, angled rocks, and other debris currently sitting on the lake bottom. This removal will be completed by divers and take place during the approved in-water work window (July 16-September 30) to ensure minimal disruption to salmonid species.

**D. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.** Creosote-treated pilings will be either removed or encapsulated in fiberglass to reduce leaching to the water. New pilings will be steel, reducing future maintenance needs. The Project includes LID measures to improve stormwater management. The new irrigation intake will be screened to prevent entrapment of fish, per agency requirements.

This Project proposes removing 7,128 sf of primarily invasive and non-native vegetation and replacing with 4,920 sf of new native vegetation. (Note that inclusion of the additive alternate gathering plaza increase removal to 8,298 sf and revegetation to 5,432 sf.) Approximately 2,131 sf of new permeable paving will be added to the plaza, and the north beach improvements, installed above the OHWM, will increase the beach area to 649 sf. The improved beach and nearshore area increase habitat opportunities for migrating juvenile salmon and other aquatic habitats. Public access to the water is also significantly increased with the installation of ramps and universal walkways to the OHWM; although these contribute to the impermeable surface areas, it is a significant improvement because it will create universal access to the water for all members of the public.

**E. Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.** The Project is a dock replacement project intended to provide added functionality and safety for park users while also providing protection to shoreline restoration areas. The dock replacement will result in a net reduction of 140 sf in overwater cover, will shift dock infrastructure away from the nearshore shoreline environment, and is designed to result in no net loss of shoreline ecological functions. Riparian and upland vegetation will be planted and the north beach nearshore will be improved to enhance lakeshore habitats. The 13 trees proposed to be removed by the Project will be replaced by up to 21 new trees. Approximately 7,128 sf of riparian and upland vegetation will be removed during construction to accommodate expanded public access opportunities, including increasing the size of the north beach area. Approximately 4,920 sf of new native shrub and groundcover vegetation (including trees) will be installed around these areas and will include riparian, upland, and stormwater swale vegetation. (Note these numbers increase to 8,298 sf removed, 5,432 sf revegetated with the construction of the gathering plaza additive alternate).

Though there is no prescriptive mitigation ratio given in MICC 19.07 for vegetation removal within a FWHCA, vegetation will be replaced at a ratio of less than 1:1 due to the placement of habitat gravels within the north beach expansion area. This action meets the overall standards of no net loss of shoreline or habitat function by reducing overall vegetation and increasing nearshore aquatic habitat and public access opportunities with the placement of these gravels and replacement of non-native vegetation with native plant species. The Tree Report in Appendix F describes compliance with MICC 19.10 – Trees.

**F. Monitoring the impact and taking appropriate corrective measures to maintain the integrity of compensating measures.** The City will develop a maintenance and monitoring plan for all installed plantings to ensure success. The City will also obtain a financial guarantee from the contractor to cover mitigation plantings in the form of a performance bond.

To avoid or minimize potential adverse impacts to the aquatic environment, the following BMPs will be employed during construction:

- Applicable permits for the Project will be obtained prior to construction. Work will be performed according to the requirements and conditions of these permits.
- In-water work will occur during the approved regulatory work window for Lake Washington; expected to be July 16 to September 30.
- The contractor will be responsible for the preparation and implementation of a spill plan to be used for the duration of construction, which will include spill prevention, control, and response BMPs. In addition, the spill plan will outline roles and responsibilities, notifications, inspections, and response protocols to be implemented in the event of an inadvertent spill during construction.
- The contractor will supply to the Project Engineers a Temporary Erosion and Sediment Control (TESC) Plan and/or a Construction Stormwater Pollution Prevention Plan (SWPPP) that will use BMPs to prevent erosion and sediment-laden runoff from leaving the site. These plans will be implemented prior to the start of ground-disturbing activities. All areas disturbed by Project construction will be stabilized as soon as possible to prevent erosion and re-vegetated as soon as practicable post-construction and prior to the removal of TESC/SWPPP measures.
- Excess or waste materials will not be disposed of or abandoned waterward of the OHWM or allowed to enter waters of the state.
- No petroleum products, chemicals, or other toxic or deleterious materials will be allowed to enter surface waters.
- Barges will not be allowed to ground out during construction.
- A temporary floating debris boom will be installed around the work area. The contractor will be required to retrieve any floating debris generated during construction using a skiff and a net. Debris will be disposed of at an appropriate upland facility.
- Demolition and construction materials will not be stored where wave action or upland runoff can cause materials to enter surface waters.
- No uncured concrete or grout will be in contact with surface waters.
- Piles will be removed as practicable, using best efforts, equipment preferences, and BMPs identified in Washington Department of Natural Resources *Puget Sound Initiative Derelict Creosote Piling Removal: Best Management Practices for Pile Removal and Disposal* (WDNR 2017).

- All creosote-treated materials will be disposed of in a landfill or recycling facility approved to accept these types of materials.
- Vibratory pile driving will be used to the maximum extent practicable, with limited impact pile driving to reach required pile depths and for pile proofing. During all impact driving, sound-attenuation devices such as a wooden cushion blocks or similar devices will be employed to minimize sound-related impacts, as determined through federal Endangered Species Act consultation.
- No new light fixtures are proposed for the overwater structures. The one light pole that will be replaced in the plaza area will be directed away from the water to the extent practicable to minimize impacts on aquatic species.
- Geotechnical engineering recommendations will be incorporated into the Project (Appendices C and D).
- The City has developed an environmental construction contingency plan for soil management for Luther Burbank Park, with GeoEngineers as a geotechnical consultant. This identifies and provides direction on how to handle any contaminated soils encountered in the vicinity of the two decommissioned USTs.
- Any additional measures required by the agencies during ESA review will be incorporated into the Project to avoid impacts on federally listed species.

## 6 References

- Anchor QEA, 2022. *Biological Evaluation, Luther Burbank Park Waterfront Improvements Project*. Prepared for City of Mercer Island. 2022.
- City of Mercer Island, 2022. City of Mercer Island GIS Portal. Accessed May 2022. Available at: <https://chgis1.mercergov.org/Html5Viewer/Index.html?viewer=PubMaps&viewer=PubMaps>.
- DNR (Washington Department of Natural Resources), 2017. "Derelict Creosote Piling Removal Best Management Practices for Pile Removal & Disposal." Accessed May 2022. Available at: [https://www.dnr.wa.gov/publications/aqr\\_rest\\_pileremoval\\_bmp\\_2017.pdf](https://www.dnr.wa.gov/publications/aqr_rest_pileremoval_bmp_2017.pdf).
- DNR, 2020. Geologic Information Portal. Accessed February 2020. Available at: <https://geologyportal.dnr.wa.gov/>.
- Ecology (Washington State Department of Ecology), 2020. "Environmental Information; Water Resource Inventory Area Maps, Cedar-Sammamish Basin WRIA 8." Accessed February 18, 2020. Available at: [https://fortress.wa.gov/dfw/score/score/maps/map\\_details.jsp?geocode=wria&geoarea=WRIA08\\_Cedar\\_Sammamish](https://fortress.wa.gov/dfw/score/score/maps/map_details.jsp?geocode=wria&geoarea=WRIA08_Cedar_Sammamish).
- GeoEngineers, 2022. *Environmental Construction Contingency Plan for Soil Management. Luther Burbank Park Mercer Island, Washington*. Prepared for City of Mercer Island. 2022.
- King County, 2022. King County iMap Interactive Mapping Tool. Accessed May 2022. Available at: <https://gismaps.kingcounty.gov/iMap/>.
- NMFS (National Marine Fisheries Service), 2022. "ESA Section 7 Consultations on the West Coast." Accessed May 2022. Available at: [https://www.fisheries.noaa.gov/west-coast/consultations/esa-section-7-consultations-west-coast#puget-sound-\(central-and-south\)](https://www.fisheries.noaa.gov/west-coast/consultations/esa-section-7-consultations-west-coast#puget-sound-(central-and-south)).
- NRCS (U.S. Department of Agriculture Natural Resources Conservation Service), 2020. "Natural Resources Conservation Service (NRCS) Web Soil Survey." Accessed February 18, 2020. Available at: <http://websoilsurvey.nrcs.usda.gov/app>.
- SCS (Soil Conservation Service), 1973. *Soil Survey of King County Area, Washington*. November 1973. Accessed May 2022. Available at: [https://www.nrcs.usda.gov/Internet/FSE\\_MANUSCRIPTS/washington/KingWA1973/KingWA\\_1974.pdf](https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/washington/KingWA1973/KingWA_1974.pdf).

USFWS (U.S. Fish and Wildlife Service), 2007. *National Bald Eagle Management Guidelines*. May 2007. Accessed June 2022. Available at: [https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines\\_0.pdf](https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf).

USFWS, 2022a. iPAC – Information for Planning and Consultation. Accessed May 2022. Available at: <https://ipac.ecosphere.fws.gov/location/62S6O2PYEFB35N56QNISZXCIAQ/resources>.

USFWS, 2022b. National Wetland Inventory Wetlands Mapper. Accessed May 2022. Available at: <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>.

WDFW (Washington Department of Fish and Wildlife), 2022a. Priority Habitats and Species Mapping. Accessed May 2022. Available at: <https://geodataservices.wdfw.wa.gov/hp/phs/>.

WDFW, 2022b. "SalmonScape." Accessed May 23, 2022. Available at: <http://apps.wdfw.wa.gov/salmonscape>.

## Figures

---

# Appendix A

## Project Plan Set

---

This appendix is submitted under a separate cover.

Appendix B  
Photographs

---

Appendix C  
Geotechnical Report for Upland  
Improvements

---

Appendix D  
Geotechnical Report for Dock  
Improvements

---

## Appendix E

# Wave and Wake Modeling Report

---

# Appendix F

## Tree Report

---

## Appendix G

# Pre-Construction Subsurface Investigation Results Summary

---

Appendix H

Luther Burbank Park Waterfront

Improvements Shoreline Vegetation Plan