

August 28, 2023

City of Mercer Island
Community Planning and Development
9611 Southeast 36th Street
Mercer Island, Washington 98040

Re: Cover Letter: Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, and Shoreline Variance Request for the Luther Burbank Park Waterfront Improvements Project (SHL22-025)

To Whom It May Concern:

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. This shoreline permit application was previously updated in response to comments received in February 2023 from the City and the City's third-party consultant reviewer.¹ This application has been updated to address additional comments received from the City in June 2023 requesting that separate variance applications be provided for each of the four requested Shoreline Variances.² Additional updates have been made in response to the June 2023 letter from the City and the July 2023 letter from the City's third-party reviewer.³

This application is intended to provide information about the Project and to request a Shoreline Substantial Development Permit (SSDP), Shoreline Conditional Use Permit (SCUP), and Shoreline Variance from the City under Mercer Island City Code (MICC) Chapter 19.13 – Shoreline Master Program (SMP). This cover letter includes an SSDP and SCUP request and demonstrates compliance with relevant City code. Separate applications are included in Exhibit 2, including variance requests for dock width, deck grating, pile spacing and diameter, and fixed pier height from the water surface. The following supporting materials are provided with this letter:

- Exhibit 1: City Development Application Forms
- Exhibit 2: Shoreline Variance Requests (four) for Dock Width, Grating, Pile Diameter, and Height from the Water Surface
- Exhibit 3: Analysis of Compliance with SMP (SSDP and SCUP)

¹ City of Mercer Island, 2023. Letter to: Paul West, City of Mercer Island. Regarding: Luther Burbank Waterfront Improvements Project (SHL22-023, SHL22-024, SHL22-025, CAO22-018, SEP22-019) Request for Information 1; 2048 84th Avenue Southeast, Mercer Island, Washington 98040. January 20, 2023.

² City of Mercer Island, 2023. Letter to: Paul West, City of Mercer Island. Regarding: SHL22-023, SHL22-024, SHL22-025, CAO22-018, SEP22-019 SUB2 Review Letter; 2048 84th Ave Southeast, Mercer Island, Washington 98040. June 26, 2023.

³ ESA, 2023. Memorandum to: Molly McGuire, City of Mercer Island. Regarding: Luther Burbank Park – Luther Burbank Shoreline Project; SHL22-023, SHL22-024, SHI22-025, SEP22-019, CAO22-018. July 28, 2023.

- Exhibit 4: Joint Aquatic Resources Permit Application (JARPA) for the Project
- Exhibit 5: JARPA for the Overwater Platform
- Exhibit 6: Analysis of Luther Burbank Impervious Surface (City of Mercer Island, Information and Geotechnical Services)
- Exhibit 7: Geotechnical Minimum Risk Statement

1 Project Overview

The Project includes repairing the north dock structure and replacing and reconfiguring the central and south dock structures to accommodate waterfront programming and current and projected watercraft uses at the park. 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 facilities and construct a new rooftop viewing deck; concession stand repairs; and waterfront plaza renovations and access upgrades. The Project will improve access to the waterfront by creating new Americans with Disabilities Act (ADA) and universally accessible routes from the plaza to the viewing deck on the existing Boiler Building annex restroom rooftop and to the expanded north beach area, which the Project will improve with fish habitat gravel and riparian plantings. The accessible route will connect to the adjacent future south shoreline trail that will be constructed as part of a separate project. The accessible route will also connect to the existing trail that continues north of the Project area. All proposed waterfront improvements, including the dock structures and gangways, will also meet accessibility requirements. The waterfront plaza renovations and access upgrades will incorporate low-impact development (LID) features that will provide stormwater buffering and biofiltration functions similar to a vegetated shoreline. An irrigation intake system will also be installed at the plaza.

A project description, containing a detailed narrative of each of the elements described previously and project drawings, is included as attachments to the JARPA (Exhibit 4).

2 Shoreline Master Program Compliance

The Project is located within the City's SMP jurisdiction, within the Urban Park shoreline environment on Lake Washington. Per the SMP, the Urban Park shoreline environment consists of shoreland areas designated for public access and active and passive public recreation. The purpose of the Project is to optimize public access, recreational uses, and public safety, including reconfiguring the waterfront park to better accommodate small boats and nonmotorized watercraft and to improve universal access to the docks, viewing deck, and beach, while avoiding and minimizing potential impacts to sensitive environments and resulting in no net loss of ecological function.

The Project includes the following uses, which are allowed landward of the ordinary high water mark (OHWM) within the Urban Park shoreline environment per MICC 19.13.040 – Table A:

- Public parks and open space
- Noncommercial recreation areas
- Shoreland surface modification
- Restoration of ecological functions, including shoreline habitat and natural systems enhancement

The proposed public access trail connecting to the outdoor classroom along the south side of the Project area will be lined with rock revetment walls designed to bring the trail to elevation and support ADA accessible gradients. The rock revetment walls along the trail are not located adjacent to the shoreline; nor are they intended to provide shoreline stabilization functions. Because they are part of the public access trail design and not intended for shoreline stabilization purposes, they are not evaluated as shoreline stabilization features in this application and are considered an allowed use landward of OHWM within the Urban Park shoreline environment.

The following Project element located landward of the OHWM requires a SCUP per MICC 19.13.040 – Table A:

- New hard structural shoreline stabilization (for the rock revetment and sheet pile wall at the north beach expansion area)

The following Project elements are allowed waterward of the OHWM per MICC 19.13.040 – Table B:⁴

- Floating platforms
- Mooring piles
- Public access pier, dock, or boardwalk
- Restoration of ecological functions including shoreline habitat and natural systems enhancement

Although public access piers, docks, or boardwalks are allowed uses, the City is requesting a Shoreline Variance from MICC 19.13.050(H)(4) dock width requirements to allow the central and south dock structures to exceed the 6-foot width requirement; MICC 19.13.050(H)(5) grating requirements to allow a solid concrete float to be installed at the central dock; MICC 19.13.050(H)(7) to allow the first set of piles at the dock structure to be greater than 10-inch-diameter and the remaining piles to be greater than 12-inch-diameter maximum requirements; and MICC 19.13.050(H)(6) to support installation of the grated overwater access platform lower than the 1.5 minimum fixed pier height allowance. Additional details and justification for each Shoreline Variance are provided in Exhibit 2.

⁴ Buoys are anticipated to be allowed as accessory to the water-dependent uses described in this section.

2.1 *Shoreline Substantial Development Permit Analysis*

The Project includes allowed uses within the Urban Park shoreline environment that will require a SSDP from the City. Activities to be covered under the SSDP include the following in-water and overwater activities and upland improvements (see the project description for details).

2.1.1 **In-Water and Overwater Activities**

The in-water and overwater activities requiring a SSDP from the City include the following:

- North dock repairs
- Central and south docks reconfiguration (except float width, grating, and pile distance, which are being covered under separate applications)
- Installation of a wave attenuation float at the central dock to provide safe use and programming for the south dock and to protect shoreline ecological functions from erosion
- Installation of a waterfront gangway and overwater access platform (except for the overwater access platform height requiring a Shoreline Variance, which is being requested under separate application)
- Restoration of ecological functions, including shoreline habitat and natural systems enhancement (installation of cobble underlayment and habitat gravel below OHWM resulting in temporary impacts)

As discussed in the project description, the Project will replace and reconfigure the solid decking central and south fixed dock structures. The new central dock will be installed in deeper water and will consist of a grated gangway and a concrete wave attenuator/mooring float. The new south dock will be located nearshore and will include a grated gangway and floats.

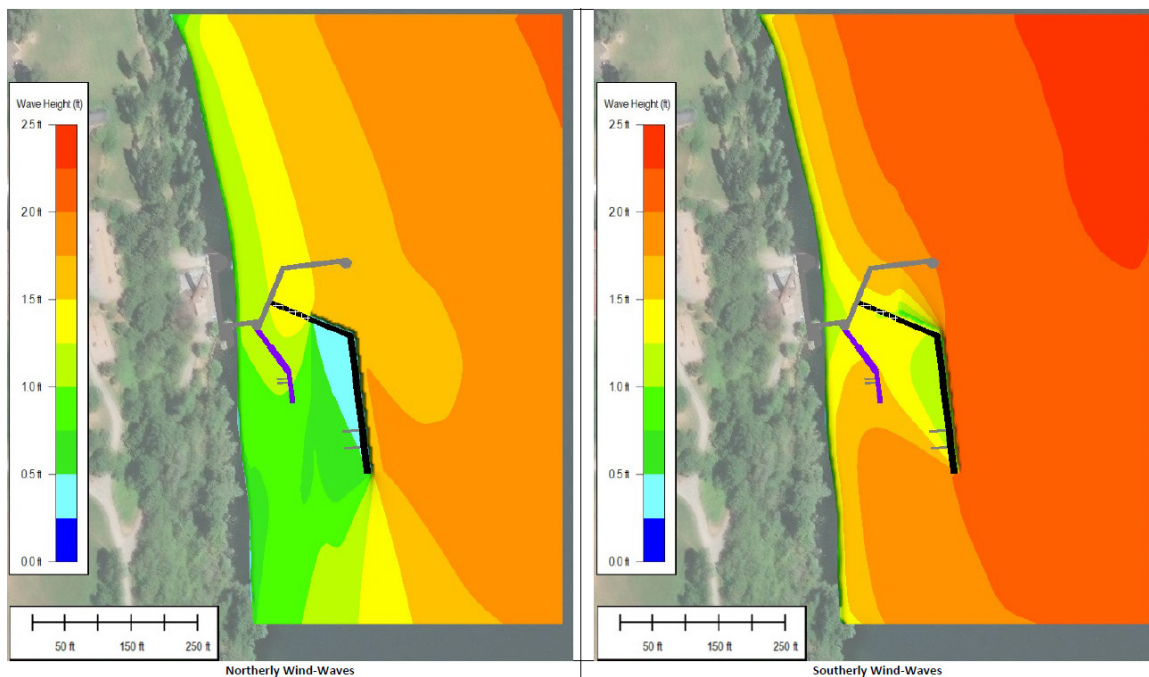
Per MICC 19.13.050(H)(5), new docks are required to have a grated surface that allows for 40% light transmittance over 100% of the dock. The Project will meet this requirement for the south dock and the new overwater access platform adjacent to the waterfront plaza. To provide adequate wave attenuation and protection for users of the south dock structure and to protect shoreline ecological functions from erosion, the float material will be concrete. Because 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, a variance is required to cover this deviation (a Shoreline Variance is being requested under separate application).

Per MICC 19.13.050(G), "Breakwaters, jetties, groins, weirs, and similar structures are prohibited, except for those structures installed to protect or restore ecological functions, such as woody debris installed in streams. Breakwaters, jetties, groins, and weirs shall be designed to protect critical areas and shall provide for mitigation according to the sequence defined in the Washington Administrative Code (WAC) 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.⁵ This reduction in wave height will subsequently reduce wave energy at the nearshore and along the 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 large woody debris (LWD) and the planting of native riparian plant species (permitted under City Permit Nos. SHL20-016 and SHL SHL21-009).

Figures 2 and 3 include a graphic depiction of modeling results for both wave and boat wake modeling completed for the proposed design that demonstrate a reduction of energy at the nearshore and the waterward dock facilities from installation of the proposed wave attenuation float.

Figure 2
Plan View of Resulting 100-Year Significant Northerly and Southerly Wind-Wave Heights



⁵ Blue Coast (Blue Coast Engineering), 2022. Memorandum to: Andy Bennett and Will Cyrier, KPFF Consulting Engineers. Regarding: Luther Burbank Marina Design: Wave and Wake Modeling. Prepared by Eduardo Sierra and Kathy Ketteridge, Blue Coast Engineering. January 9, 2022. Available as Appendix E in the Critical Areas Report (Attachment 3 of Exhibit 4).

Figure 3
Plan View of Resulting Boat Wake Heights Relative to Northerly and Southerly Boat Wakes

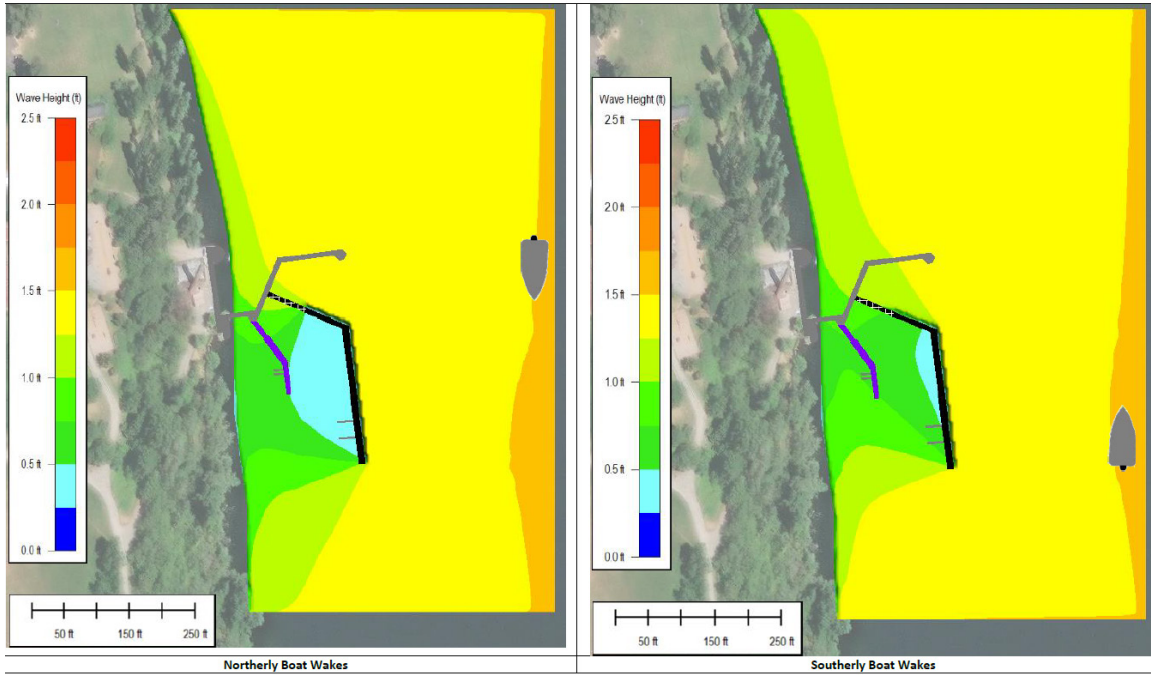


Table 1 provides a summary of the proposed changes to overwater cover. Overall, the Project would slightly reduce the total amount of overwater cover and would use light-penetrating grating materials to the maximum feasible extent.

Table 1
Existing and Proposed Overwater Coverage

Description	Removed Overwater Cover (sf)	New or Relocated Overwater Cover (sf)	Net Change (sf)
Existing solid wood decking	960	--	--
Existing fixed concrete dock	3,665	--	
Existing aluminum ramp	40	--	
Proposed concrete gangway abutment	--	18	
Proposed two grated gangways	--	600	
Proposed four finger floats	--	265	
Proposed grated floats	--	615	
Proposed wave attenuator float	--	2,610	
Proposed grated overwater platform	--	552	
Total Overwater Cover Change	4,665	4,660	-5

Notes:
Approximately 2,000 sf of new overwater cover will consist of fiberglass-reinforced plastic grating.

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.
--: not applicable
sf: square foot

The Project includes elements in nearshore areas with up to 12 feet of water depth and in offshore, or deep-water, areas with approximately 40 feet of water depth (measured from OHWM or 18.67 North American Vertical Datum of 1988 [NAVD88]).⁶ Lake Washington shorelines provide habitat for Chinook salmon, sockeye salmon, coho salmon, and cutthroat trout. The nearshore area (up to a water depth of 12 feet) provides habitat opportunities for migrating juvenile Chinook salmon.

Reducing solid overwater cover in these areas will reduce opportunities for predatory fish to congregate and improve light and dark transitions and habitat conditions for the migrating salmonids. In deeper water where adult Chinook and juvenile sockeye salmon are found, the design has fewer impacts to habitat because overwater cover in deep water for the wave attenuator/mooring float is less likely to harbor predator species, and there would be less impact on light penetration and shadowing. The proposed design aims to minimize impacts to the nearshore area at the south dock and overwater platform with the use of grated overwater surfacing.

2.1.2 Upland Improvements

The upland improvements to be covered under an SSDP include the following:

- Boiler Building repairs
- Boiler Building restroom annex renovation
- Concession stand repairs
- Waterfront plaza renovations and access upgrades, including public access trail features
- Waterfront drainage LID
- Restoration of ecological functions, including shoreline habitat and natural systems enhancement
- Fire Department-required updates, including adding a fire water line, fire hydrants, and a fire access apparatus access road and renovating an existing gravel trail

The Boiler Building repairs, Boiler Building restroom annex renovation, and concession stand repairs all include installing improvements to the existing Boiler Building. Per MICC 19.13.050(A), Table C (A) and (B), development for structures landward of the OHWM requires a 25-foot setback and must not exceed a height of 35 feet above average building elevation. The Boiler Building is an existing nonconforming 80-foot-tall structure located partially within the 25-foot setback. The Boiler Building was constructed in 1928. The addition, which contains men's and women's toilet rooms and

⁶ Lake Washington deep-water habitat defined via on-site personal conversation with Lalena Amiotte (Washington State Department of Natural Resources).

concessions, was constructed in 1974. The proposed repairs will not increase its nonconformity and will be completed consistent with the requirements in Table C. Exterior repairs include installing a new roof and replacing wall-mounted light fixtures. The Boiler Building restroom annex renovation proposes to construct a viewing deck on the existing restroom roof and will be constructed to an elevation of 29 feet and 10 inches compared to the existing elevation of 29 feet and 2 inches. The structure will not exceed a height of 35 feet above average building elevation. The rooftop viewing deck will be located in the existing building location approximately 35 feet from the OHWM. The concession stand repairs will occur under the rooftop viewing deck within the same footprint, located between the restrooms and Boiler Building on the ground floor.

Based on requirements provided by the Fire Department in an on-site meeting with KPFF Consulting Engineers in December 2022, the Project will add a new ductile fire water line, fire hydrants, and a fire access apparatus access road (hammerhead). While installing that fire line, the Project will excavate an existing gravel trail (1,235 square feet [sf]) and replace it with an in-kind gravel trail (1,235 sf). The Project will also take advantage of some existing paved areas and expand it with permeable geogrid (2,384 sf) to create the hammerhead. 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 propose to replace existing plaza hardscape with concrete paving and pervious paving as part of the Project's waterfront drainage LID. Two new trails, one in the north beach area and one in the south, will provide additional public access to the waterfront that is currently limited to an asphalt pathway at the north and a gravel maintenance driveway in the south. The hardscapes proposed in the design are consistent with MICC 19.13.050(A), Table C, (C) and (D), which states that the maximum hardscape between 0 and 25 feet from the OHWM shall be 10% and that the area between 25 and 50 feet from the OHWM shall be 30% (see Exhibit 6 to this letter).

The existing gravel north beach area above OHWM will be expanded with additional habitat-grade gravel, and native riparian plantings will be installed near the shoreline to maintain ecological functions.

2.2 Shoreline Conditional Use Permit Analysis

New hard structural shoreline stabilization activities at the north beach include the installation of a rock revetment and 6-foot-long sheet pile wall landward of the OHWM. The rock revetment will be located adjacent to the public access trail, landward of OHWM and an existing in-water strip of cobble material that was placed by the City as part of a separate project. The rock revetment will be installed at a 2:1 slope between OHWM and the public access pathway to the expanded beach area. The purpose for the rock revetment in this area is to provide an engineered solution to provide a competent slope in the area between OHWM to the public access pathway within a narrow, constrained area. The rock revetment also allows the City to locate the ADA accessible public access

pathway as close to the shoreline as possible while maximizing the area available for the expanded beach and habitat restoration area.

The 4-foot-long sheet pile wall is located at the north beach area at the transition from the ADA accessible public access trail to the expanded beach and habitat restoration area. The sheet pile wall will be approximately 6 feet deep and installed underground. A concrete pile cap will be installed on top of the sheet pile wall to provide a transitional point to the beach and water's edge. The sheet pile wall concept is common in Lake Washington for protecting upland areas in a dynamic beach environment. It is anticipated that gravel will shift along the sheet pile wall without eroding the beach. The smaller footprint of the sheet pile wall will also maximize the area available for the expanded beach and habitat restoration area.

Per Table A in MICC 19.13.040, new hard structural shoreline stabilization measures are permitted with a SCUP within the Urban Park environment. These structures will help protect the new north beach universally accessible public access trail, and the existing expanded and restored beach area, which includes a native riparian planting area designed to improve ecological function.

MICC 19.13.050(B)(5) allows for new structural stabilization measures to be installed that "protect projects for the restoration of ecological functions." The proposed rock revetment feature will protect the proposed accessible public access trail and restoration areas located landward of the beach. Nonstructural shoreline stabilization measures are also used to the north of the proposed rock revetment where LWD and rootwads will be installed or relocated. The rock revetment is located generally parallel to and landward of the OHWM and does not encroach waterward of the OHWM. This wall functions to provide shoreline stabilization to protect the public access trail to the beach and will absorb wake energy to reduce the risk of erosion at this location.⁷ Rock size for the rock revetment was calculated using summer water levels and winter storm wave heights. Scour depth was calculated using maximum boat wake height, and the summer water level used the wave and wake modeling completed for the Project.⁸ The design of the rock revetment is intended to withstand 100-year wind and wave conditions and is based on standard design methodology for material stability.^{9,10}

The sheet pile wall is a shore stabilization feature; the sheet pile wall will be 4 feet long and extend 6 feet below grade to address potential scour from impacting the public access trail and protect the native riparian planting area designed to improve ecological function. The dynamic forces of wave,

⁷ Blue Coast 2022

⁸ Blue Coast 2022

⁹ Hudson, R. Y., 1959. "Laboratory Investigation of Rubble-Mound Breakwaters." *Journal of the Waterways and Harbors Division* 85:10-659. September 1, 1959.

¹⁰ U.S. Army Corps of Engineers, 1992. *The Seismic Design of Waterfront Retaining Structures*. U.S. Army, Technical Report ITL-92-11. November 1992.

wake, and currents could otherwise shift the habitat gravels placed on the beach. The sheet pile wall is installed at this depth to protect against toe scour, which is calculated at approximately 2 feet. Installing a 6-foot-deep feature here will prevent water from undercutting the sheet wall at the public access trail, and the depth will prevent wall rotation and partial or full failure over time.¹¹ This sheet pile wall will absorb wake energy to reduce the risk of erosion at this location, providing shoreline stabilization support to the landward public access trail and protection of the habitat restoration area and expanded beach.

The beach design includes removing invasive species and replanting the upland area with native riparian plant species. The existing beach cobbles, habitat gravels, and logs will be temporarily removed for construction and then replaced after the rock revetment is installed, abutting these existing features, landward of the OHWM. This feature will protect restored ecological function in this area and will accommodate public access to the expanded beach area. LWD provides refuge for juvenile and adult fish, creates pools for juvenile fish, and adds hydraulic complexity and roughness along the bank. It provides food sources and habitat for aquatic insects and wildlife along shorelines and helps stabilize shorelines and reduce excessive erosion due to wave action. The beach enhancement, also installed above the OHWM, will increase beach area by 204 sf. The increased beach and nearshore area (up to a water depth of 12 feet) provides increased and improved habitat opportunities for migrating juvenile salmonids during higher water levels. It is anticipated that these benefits will offset Project impacts and result in no net loss of ecological function.

3 SCUP Compliance

The Washington State Department of Ecology (Ecology) promulgates the Shoreline Management Act at a state level and reviews SCUPs once they are approved by the local jurisdiction. To support City and Ecology review, the tables in Exhibit 3 describe the Project's consistency with SCUP criteria per WAC 173-27-160.

4 Conclusion

Overall, it is anticipated that the Project will result in no net loss of shoreline ecological function as demonstrated in the Critical Areas Report (Attachment 3 of Exhibit 4) provided with this application. The Project's upland improvements at the shoreline and plaza are consistent with existing shoreline uses per Table A in MICC 19.13.040. The Project includes LID measures to improve stormwater management.

New hard structural shoreline stabilization is compliant with SCUP criteria as described above and in Exhibit 3. Placing habitat-grade gravel, expanding the beach area, and installing riparian plantings at

¹¹ Blue Coast 2022

the shoreline as part of the beach expansion will restore the shoreline and provide ecological functions as permitted under MICC 19.13.040.

The Project will adequately offset temporary construction impacts and avoid or minimize long-term impacts consistent with MICC 19.13.020(C) and critical areas mitigation sequencing requirements per MICC 19.07.100. The Project minimizes impacts to the nearshore environment through the use of grated surfacing to the maximum extent feasible.

Through implementation of avoidance and minimization measures, it is expected that the Project will comply with MICC 19.13.040 for allowed activities, including public parks and open space, and restoration of ecological functions including shoreline habitat and natural systems enhancement. Therefore, we believe that the Project as proposed meets the intent of the SMP and complies with SCUP criteria per WAC 173-27-160.

Thank you in advance for your attention to this Project. Please feel free to contact me by phone at (206) 903-3374 or by email at jjensen@anchorqea.com with any questions.

Sincerely,



Josh Jensen
Senior Managing Environmental Planner
Anchor QEA, LLC

cc: Paul West, City of Mercer Island

Attachments

- Exhibit 1 City Development Application Form
- Exhibit 2 Shoreline Variance Requests (four) for Dock Width, Grating, Pile Diameter, and Height from the Water Surface
- Exhibit 3 Analysis of Compliance with SMP (SSDP and SCUP)
- Exhibit 4 JARPA Form for Project
- Exhibit 5 JARPA Form for Overwater Platform
- Exhibit 6 Analysis of Luther Burbank Impervious Surface (City of Mercer Island, Information and Geotechnical Services)
- Exhibit 7 Geotechnical Minimum Risk Statement

Exhibit 1

City Development Application Form

Exhibit 2

Shoreline Variance Requests (four) for Dock Width, Grating, Pile Diameter, and Height from the Water Surface

Exhibit 3

Analysis of Compliance with Shoreline Master Program (SSDP and SCUP)

Consistency with WAC 173-27-160, Review Criteria for Conditional Use Permits

Code Reference	Development Standard Compliance
(1) Uses which are classified or set forth in the applicable master program as conditional uses may be authorized provided that the applicant demonstrates all of the following:	The City is applying for a SCUP as required for new hard structural shoreline stabilization in shoreline environments landward of the OHWM, per Table A in MICC 19.13.040. The new hard structural shoreline stabilization landward of the OHWM will consist of the rock revetment and sheet pile wall at the north beach expansion area.
(a) That the proposed use is consistent with the policies of RCW 90.58.020 and the master program;	The Project complies with the City's shoreline policies as demonstrated throughout this application. The proposed use of the Project will be consistent with RCW 90.58.020 by preserving the natural character of the shoreline. The new rock revetment and sheet pile wall landward of the OHWM will also protect the expanded beach and restoration areas and the ADA accessible public access trail to the expanded north beach area.
(b) That the proposed use will not interfere with the normal public use of public shorelines;	The new rock revetment and sheet pile wall landward of the OHWM will not interfere with the normal public use of the shoreline and are designed to protect public access features that will increase public access to the waterfront, including increasing ADA accessibility.
(c) That the proposed use of the site and design of the project is compatible with other authorized uses within the area and with uses planned for the area under the comprehensive plan and shoreline master program;	The Project will improve existing waterfront recreational opportunities and access. It complies with the authorized use of the Urban Park environment per MICC 19.13.040 for public parks and open space. The proposed rock revetment and sheet pile wall landward of the OHWM will support the north beach access and new on-grade pathway.
(d) That the proposed use will cause no significant adverse effects to the shoreline environment in which it is to be located; and	The new rock revetment and sheet pile wall will not cause significant adverse effects to the shoreline. This work will be landward of the OHWM and will have required measures in place to prevent water quality impacts. The project description included with the JARPA (Exhibit 4) includes a list of BMPs to be implemented during construction to avoid or minimize potential impacts on the shoreline environment. The Biological Evaluation and Critical Areas Report describe conservation measures proposed to avoid or minimize potential impacts on federally listed species and critical habitat. With these measures in place, no net loss of ecological functions will occur.
(e) That the public interest suffers no substantial detrimental effect.	The Project will enhance public access to the existing waterfront plaza and shoreline and enhance the user experience by improving accessibility, including ADA accessible improvements. Proposed activities will protect public access

Code Reference	Development Standard Compliance
	features and are integrated into the public access design. These features will not cause substantial detrimental effects to the public.
(2) In the granting of all conditional use permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if conditional use permits were granted for other developments in the area where similar circumstances exist, the total of the conditional uses shall also remain consistent with the policies of RCW 90.58.020 and shall not produce substantial adverse effects to the shoreline environment.	The City is not aware of other conditional use permits that have been issued in the area for similar circumstances.
(3) Other uses which are not classified or set forth in the applicable master program may be authorized as conditional uses provided the applicant can demonstrate consistency with the requirements of this section and the requirements for conditional uses contained in the master program.	Not applicable. All uses are classified within the City's SMP and consistent with permitted uses per MICC 19.13.040. Proposed elements for which the City is seeking a variance are analyzed in the table for WAC 173-27-170 in Exhibit 2.
(4) Uses which are specifically prohibited by the master program may not be authorized pursuant to either subsection (1) or (2) of this section.	Not applicable. All uses are classified within the City's SMP and consistent with permitted uses per MICC 19.13.040. Proposed elements for which the City is seeking a variance are analyzed in the table for WAC 173-27-170 in Exhibit 2.

Consistency with MICC 19.13.050(A) Table C – Requirements for Development Located Landward from the OHWM

Code Reference	Development Standard Compliance
<p>Setbacks for All Structures (Including Fences over 48 Inches High) and Parking</p> <p>A. 25 feet from the OHWM and all required setbacks of the development code, except 1) light rail transit facilities; and 2) shore access structures less than 30 inches above the existing or finished grade, whichever is lower. If a wetland is adjacent to the shoreline, measure the shoreline setback from the wetland's boundary</p>	<p>The Project complies with this development standard. The Boiler Building is an existing nonconforming 80-foot-tall structure located partially within the 25-foot setback. The proposed repairs will not increase its nonconformity and will be completed consistent with the requirements in Table C. Exterior repairs include installing a new roof and replacing wall-mounted light fixtures. The Boiler Building restroom annex renovation proposes to construct a viewing deck on the existing restroom roof and will be constructed to an elevation of 29 feet and 10 inches compared to the existing elevation of 29 feet and 2 inches. The structure will not exceed a height of 35 feet above average building elevation. The rooftop viewing deck will be located in the existing building location approximately 35 feet from the OHWM. The concession stand repairs will occur under the rooftop viewing deck within the same footprint, located between the restrooms and Boiler Building on the ground floor.</p> <p>No new structures will be installed within 25 feet from the OHWM.</p>
<p>Height Limits for All Structures</p> <p>B. Shall be the same as height limits specified in the development code but shall not exceed a height of 35 feet above average building elevation, except light rail transit facilities</p>	<p>The Project complies with this development standard. No new or replacement structures will exceed 35 feet above average building elevation.</p>
<p>Maximum Hardscape and Lot Coverage</p> <p>C. 10%: between 0 and 25 feet from the OHWM</p> <p>D. 30%: between 25 and 50 feet from the OHWM</p>	<p>The Project complies with these development standards. A total area of 7,083 sf or 0.71% of impervious surface is proposed between 0 and 25 feet from the OHWM. Per the development standards, no greater than 10% new hardscape coverage will be installed between 0 and 25 feet from the OHWM. A total of 6,255 sf or 0.63% of impervious surface is proposed between 25 and 50 feet from the OHWM. Per the development standards, no greater than 30% new hardscape coverage will be installed between 25 and 50 feet from the OHWM.</p>
<p>Minimum Land Area Requirements</p> <p>E. All semiprivate commercial and noncommercial recreational tracts and areas shall have a minimum land area of 200 sf per family, but not less than 600 sf, exclusive of driveways or parking areas. Screening of the boundaries with abutting properties will be required.</p>	<p>Not applicable.</p>

Code Reference	Development Standard Compliance
Height Limits for Light Rail Transit Facilities within the Existing I-90 Corridor: The trackway and overhead wires, support poles, and similar features necessary to operate light rail transit facilities may be erected upon and exceed the height of the existing I-90 bridges.	Not applicable.

Consistency with MICC 19.13.050(B) – Bulkheads and Shoreline Stabilization Structures

Code Reference	Development Standard Compliance
<p>1. An existing shoreline stabilization structure may be replaced with a similar structure if there is a demonstrated need to protect principal uses or structures from erosion caused by currents or waves, and the following conditions shall apply:</p>	<p>Not applicable. The Project is not proposing replacing an existing shoreline stabilization structure.</p>
<p>2. <i>New structures for existing primary structures.</i> New or enlarged structural shoreline stabilization measures for an existing primary structure, including residences, are not allowed unless there is conclusive evidence, documented by a geotechnical analysis, that the structure is in danger from shoreline erosion caused by currents or waves. Normal sloughing, erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis, is not demonstration of need. The geotechnical analysis should evaluate on-site drainage issues and address drainage problems away from the shoreline edge before considering structural shoreline stabilization. New or enlarged erosion control structure shall not result in a net loss of shoreline ecological functions.</p>	<p>Not applicable. The Project is not proposing to install new or enlarged structural shoreline stabilization measures for an existing primary structure.</p>
<p>3. New development on steep slopes or bluffs shall be set back sufficiently to ensure that shoreline stabilization is unlikely to be necessary during the life of the structure, as demonstrated by a geotechnical analysis, in compliance with subsection (B)(7) of this section and building and construction codes.</p>	<p>Not applicable. New development is not proposed on steep slopes or bluffs that will rely on new shoreline stabilization measures for protection as part of the Project or during the life of the structure.</p>
<p>4. New structural stabilization measures in support of water-dependent development shall only be allowed when all of the conditions below apply:</p> <ul style="list-style-type: none"> i) The erosion is not being caused by upland conditions, such as the loss of vegetation and drainage. ii) Nonstructural measures, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient. iii) The need to protect primary structures from damage due to erosion is demonstrated through a geotechnical report, in compliance with subsection (B)(7) of this section and building and construction codes. iv) The erosion control structure will not result in a net loss of shoreline ecological functions. 	<p>Not applicable. New structural stabilization measures in support of water-dependent development is not proposed as part of the Project.</p>
<p>5. New structural stabilization measures to protect projects for the restoration of ecological functions or hazardous substance remediation projects pursuant to RCW Chapter 70.105D shall only be allowed when all of the</p>	<p>The new structural stabilization measures are intended to protect the restoration of ecological functions provided by the expanded beach area and riparian vegetation habitat area. The function provided by these new structural</p>

Code Reference	Development Standard Compliance
<p>conditions below apply:</p> <ul style="list-style-type: none"> i) Nonstructural measures, planting vegetation, or installing on-site drainage improvements, are not feasible or not sufficient. ii) The erosion control structure will not result in a net loss of shoreline ecological functions. 	<p>stabilization measures cannot be addressed using only nonstructural methods, such as riparian vegetation, due to the constrained site conditions along the waterfront and beach area. However, nonstructural methods have been incorporated into the design to the extent practicable.</p> <p>The shoreline design will be supplemented with LWD and rootwads placed landward of the OHWM to provide nonstructural shoreline stabilization where practicable. LWD provides refuge for juvenile and adult fish, creates pools for juvenile fish, and adds hydraulic complexity and roughness along the bank. It provides food sources and habitat for aquatic insects and wildlife along shorelines and helps stabilize shorelines and reduce excessive erosion due to wave action. The beach enhancement, also installed above the OHWM, will increase beach area by 204 sf. The increased beach and nearshore area (up to a water depth of 12 feet) provides increased and improved habitat opportunities for migrating juvenile salmonids during higher water levels. It is anticipated that these benefits will offset Project impacts and result in no net loss of ecological function.</p>
<p>6. Bulkheads shall be located generally parallel to the natural shoreline. No filling may be allowed waterward of the ordinary high water mark, unless there has been severe and unusual erosion within two years immediately preceding the application for the bulkhead. In this event the city may allow the placement of the bulkhead to recover the dry land area lost by erosion.</p>	<p>The rock revetment and sheet pile wall will be located parallel to the natural shoreline, following the contours of the beach area. No filling for shoreline stabilization is proposed waterward of the OHWM.</p>
<p>7. Geotechnical reports pursuant to this section that address the need to prevent potential damage to a primary structure shall address the necessity for shoreline stabilization by estimating time frames and rates of erosion and report on the urgency associated with the specific situation. As a general matter, hard armoring solutions should not be authorized except when a report confirms that there is a significant possibility that such a structure will be damaged within three years as a result of shoreline erosion in the absence of such hard armoring measures, or where waiting until the need is that immediate would foreclose the opportunity to use measures that avoid impacts on ecological functions. Thus, where the geotechnical report confirms a need to prevent potential damage to a primary structure, but the need is not as immediate as the three years, that report may still be used to justify more immediate authorization to protect against erosion using soft measures.</p>	<p>Not applicable. The rock revetment and sheet pile wall are not being installed to prevent potential damage to a primary structure.</p>
<p>8. When any structural shoreline stabilization measures are demonstrated to be necessary, pursuant to above provisions, the following shall apply:</p>	<p>The proposed shoreline stabilization measures are limited to the minimum necessary and supplemented with nonstructural shoreline stabilization measures</p>

Code Reference	Development Standard Compliance
<ul style="list-style-type: none"> i) Limit the size of stabilization measures to the minimum necessary. Use measures designed to assure no net loss of shoreline ecological functions. Soft approaches shall be used unless demonstrated not to be sufficient to protect primary structures, dwellings, and businesses. ii) Ensure that publicly financed or subsidized shoreline erosion control measures do not permanently restrict appropriate public access to the shoreline except where such access is determined to be infeasible because of incompatible uses, safety, security, or harm to ecological functions. See public access provisions: WAC 173-26-221(4). Where feasible, incorporate ecological restoration and public access improvements into the project. iii) Mitigate new erosion control measures, including replacement structures, on feeder bluffs or other actions that affect beach sediment-producing areas to avoid and, if that is not possible, to minimize adverse impacts to sediment conveyance systems. Where sediment conveyance systems cross jurisdictional boundaries, local governments should coordinate shoreline management efforts. If beach erosion is threatening existing development, local governments should adopt master program provisions for a beach management district or other institutional mechanism to provide comprehensive mitigation for the adverse impacts of erosion control measures. 	<p>where practicable. The design is located landward of OHWM and designed to assure no net loss of shoreline ecological functions, as described previously. Nonstructural shoreline stabilization measures are incorporated into the beach design to the extent practicable.</p> <p>The Project is designed to accommodate public access to the shoreline. Ecological restoration and public access improvements are also incorporated into the design consistent with MICC 19.13.050(B)(8).</p>

Consistency with MICC 19.13.050(D) Table D – Requirements for Moorage Facilities and Development Located Waterward from the OHWM

Code Reference	Development Standard Compliance
<p>Setbacks for Docks, Covered Moorages, and Floating Platforms</p> <p>A. 10 feet from the lateral line (except where moorage facility is built pursuant to the agreement between the owners of adjoining lots on the shoreline as shown in Figure B below).</p> <p>B. Where a property shares a common boundary with the urban park environment, the setback shall be 50 feet from the lateral line or 50% of the water frontage of the property, whichever is less.</p>	<p>The Project complies with this development standard. The replacement dock structure is not located near a common line or property boundary.</p>
<p>Setbacks for Boat Ramps and Other Facilities for Launching Boats by Auto or Hand, Including Parking and Maneuvering Space</p> <p>C. 25 feet from any adjacent private property line.</p>	<p>Not applicable.</p>
<p>Length or Maximum Distance Waterward from the OHWM for Docks, Covered Moorage, Boatlifts, and Floating Platforms</p> <p>D. Maximum 100 feet, but in cases where water depth is less than 11.85 feet below OHWM, length may extend up to 150 feet or to the point where water depth is 11.85 feet at the OHWM, whichever is less.</p>	<p>Not applicable. There is no dock length or area limit for public access docks per MICC 19.13.050(H)(3).</p>
<p>Width of Docks within 30 Feet Waterward from the OHWM</p> <p>E. Maximum 4 feet. Width may increase to 5 feet if one of the following is met:</p> <ol style="list-style-type: none"> 1) Water depth is 4.85 feet or more, as measured from the OHWM; or 2) A moorage facility is required to comply with ADA requirements; or 3) A resident of the property has a documented permanent state disability as defined in WAC 308-96B-010(5); or 4) The proposed project includes mitigation option A, B, or C listed in Table E; and for replacement actions, there is either a net reduction in overwater coverage within 30 feet waterward from the OHWM, or a site-specific report is prepared by a qualified professional demonstrating no net loss of ecological function of the shorelands. Moorage facility width shall not include pilings, boat ramps, and boatlifts. 	<p>Not applicable. Public access docks may have a width of up to 6 feet subject to U.S. Army Corps of Engineers or WDFW approval per MICC 19.13.050(H)(4). The central dock floating structure will be 10 feet wide, and the south dock floating structure, including the reuse of an existing float, will be 8 to 10 feet wide. A variance from this standard is being requested (Exhibit 2).</p>

Code Reference	Development Standard Compliance
<p>Width of Moorage Facilities More Than 30 Feet Waterward from the OHWM</p> <p>E. Maximum 6 feet wide. Moorage facility width shall not include pilings, boat ramps and boatlifts.</p>	<p>The central dock floating structure will be 10 feet wide, and the south dock floating structure, including the reuse of an existing float, will be 8 to 10 feet wide. A variance from this standard is being requested (Exhibit 2).</p>
<p>Height Limits for Walls, Handrails, and Storage Containers Located on Piers</p> <p>F. 3.5 feet above the surface of a dock or pier; 4 feet for ramps and gangways designed to span the area 0 feet to 30 feet from the OHWM.</p>	<p>Not applicable.</p>
<p>Height Limits for Mooring Piles, Diving Boards, and Diving Platforms</p> <p>G. 10 feet above the elevation of the OHWM.</p>	<p>Not applicable.</p>
<p>Height Limits for Light Rail Transit Facilities Within the Existing I-90 Corridor: The trackway and overhead wires, support poles, and similar features necessary to operate light rail transit facilities may be erected upon and exceed the height of the existing I-90 bridges.</p>	<p>Not applicable.</p>
<p>Minimum Water Frontage for Docks</p> <p>H. Single-family lots: 40 feet.</p> <p>I. Shared – Two adjoining lots on the shoreline: 40 feet combined.</p> <p>J. Semiprivate recreational tracts: 2 families: 40 feet. 3–5 families: 40 feet plus 10 feet for each family more than 2. 6–10 families: 70 feet plus 5 feet for each family more than 5. 11–100 families: 95 feet plus 2 feet for each family more than 10. 101+ families: 275 feet plus 1 foot for each family more than 100.</p>	<p>Not applicable.</p>
<p>Covered Moorage</p> <p>Permitted on single-family residential lots subject to the following:</p> <ol style="list-style-type: none"> Maximum height above the OHWM: 16 feet; 16 to 21 feet subject to criteria of Subsection (E)(1) of this section. Location/area requirements: See Figure A for single-family lots and Figure B for shared moorage. Building area: 600 sf; however, a covered moorage may be built larger than 600 sf within the triangle subject to a shoreline conditional use permit. Covered moorage shall have open sides. Prohibited in semiprivate recreational tracts and noncommercial recreational areas. Translucent coverings are required. 	<p>Not applicable.</p>

Consistency with MICC 19.13.050(H) for Public Access Piers, Docks, and Boardwalks

Code Reference	Development Standard Compliance
<p>Public access piers, docks, or boardwalk. New public access piers, docks, or boardwalks on public lands shall comply with the following:</p> <ol style="list-style-type: none"> Public access piers, docks, or boardwalks shall be designed and constructed using WDFW-approved methods and materials; 	<p>The Project complies with this development standard. A site visit was conducted with WDFW in November 2021 to describe the Project design and construction methods. The proposed dock structure will be designed and constructed using WDFW-approved methods and materials.</p>
<ol style="list-style-type: none"> With the exception of the requirements for moorage facilities related to width and length, public access piers, docks, or boardwalks shall comply with design standards required for moorage facilities listed in Table D, Requirements for Moorage Facilities and Development Located Waterward from the OHWM; 	<p>Compliance with this standard is described in the previous table describing compliance with MICC 19.13.050(D) – Table D.</p>
<ol style="list-style-type: none"> There is no dock length or area limit for public access piers, docks, or boardwalks; however, public access piers, docks, and boardwalks shall not interfere with navigation and shall be the minimum size necessary to meet the needs of the proposed water-dependent use; 	<p>The Project complies with this development standard. The Project includes replacing an existing public dock and will not interfere with navigation. The proposed dock structure is the minimum size necessary to meet the needs of programming at the site.</p>
<ol style="list-style-type: none"> Public access piers, docks, or boardwalks may have a width of up to six feet subject to U.S. Army Corps of Engineers and/or WDFW approval; 	<p>The central dock floating structure will be 10 feet wide, and the south dock floating structure, including the reuse of an existing float, will be 8 to 10 feet wide. A variance from this standard is being requested (Exhibit 2).</p>
<ol style="list-style-type: none"> Public access piers, docks, or boardwalks must be fully grated with materials that allow a minimum of 40% light transmittance; 	<p>The Project will comply with this development standard to the extent practicable. The central wave attenuator/mooring float will be a solid float with significant weight used to provide safe use and programming for the south dock and protect shoreline ecological functions from erosion. A variance from this standard is being requested (Exhibit 2).</p>
<ol style="list-style-type: none"> Minimum of 1.5 feet above ordinary high water to bottom of pier stringer, except the floating section of a dock attached to a pier; 	<p>Compliance with this criterion is demonstrated in a separate Shoreline Variance application (Exhibit 2).</p>
<ol style="list-style-type: none"> The first in-water (nearest the OHWM) set of pilings shall be steel, 10 inches in diameter or less, and at least 18 feet from the OHWM. Piling sets beyond the first shall also be spaced at least 18 feet apart and shall not be greater than 12 inches in diameter. Piles shall not be treated with pentachlorophenol, creosote, CCA or comparably toxic compounds. If ammoniacal copper zinc arsenate (ACZA) pilings are proposed, the applicant shall meet all of the best management practices, including a post-treatment procedure, as outlined in the amended Best Management Practices of the Western Wood Preservers. All piling sizes are in nominal diameter; 	<p>Compliance with this criterion is demonstrated in a separate Shoreline Variance application (Exhibit 2).</p>

Code Reference	Development Standard Compliance
8. Any paint, stain, or preservative applied to components of the overwater structure must be leach resistant, completely dried or cured prior to installation. Materials shall not be treated with pentachlorophenol, creosote, CCA or comparably toxic compounds;	The Project complies with this development standard. Environmentally benign and approved materials will be installed as part of the Project.
9. Disturbance of bank vegetation shall be limited to the minimum amount necessary to accomplish the project. Disturbed bank vegetation shall be replaced with native, locally adapted herbaceous and/or woody vegetation;	The Project complies with this development standard. Disturbance of the bank will occur to expand the beach area to the north. Disturbed bank vegetation will be replaced with native, locally adapted herbaceous or woody vegetation.
10. Construction of public access piers, docks, or boardwalks shall abide by the work windows for listed species established by the U.S. Army Corps of Engineers and WDFW; and	The Project complies with this development standard. Construction will occur within the designated in-water work window or approved extension.
11. A no net loss plan shall be prepared pursuant to MICC 19.13.020 demonstrating that the proposed project will not create a net loss in ecological function of the shorelands.	The Project complies with this development standard. A no-net-loss plan is included in the Project Critical Areas Study (Attachment 3 of Exhibit 4).

Notes:

ACZA: ammoniacal copper zinc arsenate

ADA: Americans with Disabilities Act

BMP: best management practice

CCA: copper chrome arsenate

City: City of Mercer Island

JARPA: Joint Aquatic Resources Permit Application

LWD: large woody debris

MICC: Mercer Island City Code

OHWM: ordinary high water mark

Project: Luther Burbank Waterfront Improvement Project

RCW: Revised Code of Washington

SCUP: Shoreline Conditional Use Permit

sf: square foot

SMP: Shoreline Master Program

WAC: Washington Administrative Code

WDFW: Washington Department of Fish and Wildlife

Exhibit 4

Joint Aquatic Resources Permit Application Form for Luther Burbank Waterfront Improvements

Exhibit 5

Joint Aquatic Resources Permit

Application Form for Overwater Platform

Exhibit 6

Analysis of Luther Burbank Impervious Surface (City of Mercer Island, Information and Geotechnical Services)

Exhibit 7

Geotechnical Minimum Risk Statement
