



April 17, 2023

City of Mercer Island
Community Planning and Development
Attn: Molly McGuire
9611 SE 36th St
Mercer Island, WA 98040

**RE: Luther Burbank Waterfront Improvements Project
(SHL22-023, SHL22-024, SHL22-025, CAO22-018, SEP22-019)
Request for Information 1; 2048 84th Ave SE, Mercer Island, WA 98040**

Dear Molly:

I am providing an overview of our responses to your Request for Information of January 20, 2023. The design team has compiled responses for all comments in a table attached to this letter. These comments were in two shared review plan files and the peer review memo from Environmental Science Associates. The responses are further addressed in detail in the revised plan and report products that have been uploaded to the new permit submittal portal. You will find a coastal engineering memo and tree report submitted as new appendices to the Critical Areas Report. You will also find a GIS impervious surface analysis as a new exhibit to the Shoreline letter.

In addition, I want to call to your attention new project scope in the plan set. We have developed a fire suppression system that we believe will meet code requirements for this project. This is shown in additional grading and civil sheets not included in the first submittal. We would appreciate your review of this addition to the project scope.

Please contact me if you need additional information.

Sincerely,

Paul West
Senior CIP Project Manager

Client: Mercer Island Public Works
Project: Luther Burbank Waterfront Improvements
KPFF Job #: 10042200248
By: WBC
Date: 4/7/2023



SUMMARIZED CITY PERMIT REVIEW COMMENTS - LUTHER BURBANK WATERFRONT IMPROVEMENTS

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|----------|----------|--|------|--|-----------|
| 1 | G-001 | <p>Break down each requested variance element for demonstration of compliance with WAC 173-27-170(3)(a)-(c). Each element listed in the response currently only addresses one or two of the requirements for a variance waterward of the ohwm. Each element needs to meet all three criteria.</p> <p>Please note that WAC 173-27-170(3)(b) requires you to demonstrate compliance with (2)(b)-(f).</p> <p>Another thing to note is that WAC 173-27-170(2)(b) does not allow the granting of variances for hardships created by the property owner. You describe the need for waiving the light transmittance requirement is due to the width of the dock, which is creating the hardship.</p> <p>This is further discussed in the memo from ESA dated 1/19/23.</p> | A | Narrative in the table has been updated. | |
| 2 | G-001 | Geotechnical engineer of record to review planset and provide statement of risk in accordance with MICC 19.07.160.B.3. | A | Geotechnical EOR reviewed planset and has provided statement of risk inaccordance with referenced MICC. Please see attached. | |
| 3 | G-020 | <p>Provide a Shoreline Code Compliance Table demonstrating compliance with MICC 19.13.050(D) Table D.</p> <p>Include information for each in-water and overwater structure.</p> | A | Shoreline Code Compliance Table exists in the permitting documents. | |
| 4 | G-020 | Provide a Shoreline Code Compliance Table demonstrating compliance with MICC 19.13.050(A) Table C and update plans with applicable information | A | JJ update: Shoreline code compliance table has been added to the shoreline permit application. | |
| 5 | G-020 | <p>Provide table showing compliance with lot coverage and hardscape limits within 0-25 (10%) & 25-50 (30%) ft from the OHWM</p> <p>Show lines 25 and 50 ft from OHWM</p> | A | Setback limit lines added to the plan sheet. | |
| 6 | G-020 | Provide a Shoreline Code Compliance Table demonstrating compliance with MICC 19.13.050(H) for public access piers, docks, and boardwalks. | | JJ update: Shoreline code compliance table has been added to the shoreline permit application. | |

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| 7 | G-020 | <p>Provide description of the boiler building nonconformity and proposed alteration (stack height and setbacks) per MICC 19.13.020(A)</p> <p>Include approximate date of construction for the building.</p> | A | <p>Setbacks The basic setback is 25 feet. The boiler building is located on the lakeshore, and was constructed in 1928. Its east wall is located approximately 13 feet west of the concrete bulkhead which is the shore of Lake Washington. The 1974 addition was constructed approximately 36 feet west of the concrete bulkhead, which is the shore of Lake Washington. The proposed new roof deck is located on top of the existing 1974 addition, and will be the same 36 feet west of the concrete bulkhead.</p> <p>Shoreland Uses Public Parks and Open Space are permitted outright.</p> <p>Height Limits The basic height limit is 35 feet. The boiler building tower is approximately 80 feet above average building elevation. The project proposes removing approximately 8 feet from the top of the tower, as a seismic mitigation strategy that balances the weight of the tower, the existing foundations, and structural support. The new height of the building tower will be approximately 72 feet. The boiler building main structure is approximately 24 feet above average building elevation.</p> <p>The boiler building was constructed in 1928. The addition, which contains men's & women's toilet rooms and concessions, was constructed in 1974.</p> | |
| 8 | G-020 | Call out elements where variances and SCUP are requested | A | Elements with variances and SCUP have been identified. | |
| 9 | G-020 | Show OHWM | A | OHWM extended north and south. | |
| 10 | G-020 | What are the specifics of the dock grating variance request? How much of the dock will be grated with 40% light transmittance? | A | <p>Comment is attached to general purpose float which is fully grated with 40% minimum light transmittance as noted on drawing S-050.</p> <p>Dock grating variance request pertains to central wave attenuator/mooring float. In order to protect shoreline ecological functions and provide safe use and programming for the south dock, the central float sections will not transmit light. Float is located as far off shore as practical (closest point is 115 feet from OHWM) in approximately 36 to 38 feet of water to minimize effect of shading on the lake bottom.</p> | |
| 11 | G-020 | <p>Per MICC 19.13.040 - Table B, breakwaters, jetties, and groins are not permitted unless for restoration of ecological function. A wave attenuator is a breakwater based on the definition in MICC 19.16 and the description of the purpose of the central dock design.</p> <p>Provide more information.</p> <p>Include demonstration of compliance with MICC 19.13.050(G) for restoration or protection of critical areas if applicable.</p> | A | Added to Shoreline Permit narrative. | |

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| 12 | G-020 | Include a drawing to show property lines and 10 ft lateral line setback to show compliance with MICC 19.13.050(D) | D | See "Buoy Plan" on S-010. Site of improvements are located within the middle portion of the park shoreline, over 600 ft from the nearest private property lateral line. | |
| 13 | C-011 | Temporary open cut for this construction could result in significant disturbance of the existing slope. Provide a scaled section drawing showing actual grades. Geotechnical engineer to provide alternative to the elevated structure or recommendations to limit extent of the temporary excavation. | A | <p>Scaled section has been included on S-060 along with structural updates per the geotechnical recommendations provided below.</p> <p>Geotechnical EOR states: "The foundations for the elevated structure will be located between the back side of the restroom building and 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. We understand that the currently envisioned foundation system for the elevated structure is traditional shallow foundations. Constructing shallow foundations would likely necessitate excavation into the toe of the upland slope behind the restroom building. In our opinion it is feasible to cut into this slope to construct the shallow foundations. The amount of excavation into the slope could be limited using temporary shoring to retain the toe of the slope during excavation and/or by completing additional slope stability evaluations to optimize the allowable cut slope angle.</p> <p>'Using drilled shaft or micropile foundations to support the walkway would likely require less ground disturbance and excavation than shallow foundations. These foundation types can be installed in areas with limited access and the necessary excavation could be reduced to that required to construct the pile cap or any other at grade element. Recommendations for design and construction of drilled shaft and micropile foundations are included in our geotechnical report for the project."</p> | |
| 14 | CM-012 | Please indicate the purpose of the sheetpile wall at this location. | A | The sheet pile wall is a shore stabilization feature; the sheet pile wall extends 6 feet below grade to address potential scour at this location. The dynamic forces of wave, 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 undercutting the sheet wall and causing wall rotation and partial or full failure. Please refer to the scour and runup report by Blue Coast Engineering, which states that calculated scour depth is 2 feet minimum below the lowest elevation of the sheet pile wall at elevation 22.4 feet, as shown in Grading Plan C-020. This wall functions to provide shoreline stabilization to support the pedestrian access to the beach and will absorb wake energy to reduce the risk of erosion at this location. | |
| 15 | CM-014 | Please indicate the design function for this rock revetment and how the installation complies with the requirements of MICC 19.13.050.(B). | A | MICC 19.13.050(B) allows for new structural stabilization measures to be installed that "protect projects for the restoration of ecological functions." The proposed shoreline stabilization measures will protect the proposed accessible public access trail and restoration areas located landward of the beach. The Rock revetment wall is located above the OHWM and does not encroach waterward of the OHWM. This wall functions to provide shoreline stabilization to support the pedestrian access to the beach and will absorb wake energy to reduce the risk of erosion at this location. Invasive species will be removed and the upland area will be replanted with native riparian planting. The existing beach habitat gravels and log will be temporarily removed for construction then replaced after the rock revetment wall is installed abutting these existing features, above the OHWM. This feature will assure no net loss of ecological function and will allow public access to an enlarged beach area. The enlarged beach area is designed to increase ecological function for salmonids. | |
| 16 | S-010 | Show widths of all docks | A | Widths added for all docks. Please see attached redline to be drafted at 90% | |
| 17 | S-021 | Show distance between piles and distance of first set from OHWM for compliance with MICC 19.13.050(H)(7) | A | Distance between piles shown on S-012. Distance between first pile and OHWM added to S-10, S-11, and S-12. Please see attached redlines to be drafted at 90%. | |

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| 18 | S-021 | Show height of gangway for compliance with MICC 19.13.050(D) maximum height limits | A | Maximum height limit added. | |
| 19 | S-022 | Show height of gangway for compliance with MICC 19.13.050(D) maximum height limits | A | Maximum height limit added. | |
| 20 | S-022 | Show distance between piles and distance of first set from OHWM for compliance with MICC 19.13.050(H)(7) | A | Distance between piles shown on S-012. Distance between first pile and OHWM added to S-10, S-11, and S-12. Please see attached redlines to be drafted at 90%. | |
| 21 | S-050 | Per MICC 19.13.050(H)(7), the first in-water (nearest the OHWM) set of pilings shall be steel, ten inches in diameter or less and at least 18 ft from the OHWM. | A | First pile is 34'-9" from OHWM. Dimension showing this has been added to S-010, S-011, and S-012. Pile diameters larger than 10 inches are necessary for structural performance. | |
| 22 | S-050 | Per MICC 19.13.050(H)(7), piling sets beyond the first shall also be spaced at at least 18 feet apart and shall not be greater than 12 inches in diameter. | A | Pile spacing changed to 18 ft. Pile diameters greater than 12 inches are necessary for structural performance. | |
| 23 | Comm #1 | The applicant should demonstrate how the wave attenuator is designed to restore ecological areas protect shoreline critical areas. | A | The proposed wave attenuator float at Luther Burbank Park 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 marina predict that wave heights will be reduced between 0.5 and 1.0 feet along portions of the Luther Burbank Park shoreline compared to adjacent shorelines. This reduction in wave height will subsequently reduce wave energy nearshore and along the shoreline areas of the park; thus reducing the erosion due to storm waves and boat wake. | |
| 24 | Comm #2 | Though there is no prescriptive mitigation ratio given in MICC 19.07 for vegetation removal within a FWHCA, the CAS could address that 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, and that this action meets the overall standards of no net loss of shoreline or habitat function by reducing overall vegetation but increasing nearshore aquatic habitat and public access opportunities with the placement of these gravels. | A | 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. There are 3,922 square feet of removed vegetation and 1,795 square feet of proposed vegetation. This is a net loss of 2,127 square feet of vegetated area; however, there are 2,437 square feet of new permeable paving added in the plaza area which was previously paved with traditional pavers. The beach enhancement, installed above the OHWM, will increase the beach area by 204 square feet. The increased beach and nearshore area provide increased and improved habitat opportunities for migrating juvenile salmon. 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. 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. | |
| 25 | Comm #3 | The project plans include removal of 10 trees throughout the project area. Mitigation actions described in the CAS include the replacement of 20 trees but does not detail compliance with MICC 19.10- Trees. Tree replacement standards described in 19.10.070 could be discussed in the CAS to detail if the trees scheduled for removal are less than 10 inches, and if the 1:1 replacement ratio would be appropriate for their replacement. | D | Tree report is being produced by the City. It will address code requirements for trees for this project. | |
| 26 | Comm #4 | The planting plan includes a nonnative oak (<i>Quercus palustris</i>). Consider replacing with a native tree species such as big-leaf maple (<i>Acer macrophyllum</i>) or red alder (<i>Alnus rubra</i>). | D | This tree will be planted in a paved plaza with seasonally saturated soils underneath. There are no good choices for native deciduous tree species that are long-lived and tolerate flooded conditions. The suggested species do not fit these design constraints. There is long-term habitat benefit from having a tall, long-lived tree at this location. It will eventually provide shade to the nearshore habitat and will have significant landmark function. | |

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| 27 | Comm #5 | <p>Per MICC 19.13.050(B)(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 [MICC 19.13.050(B)(7)] and building and construction codes. iv. The erosion control structure will not result in a net loss of shoreline functions. <p>Additionally, MICC 19.13.050(B)(6) states that 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>Project elements such as water-dependent development of the rock revetment at the north beach expansion area and rock terraces along the south on-grade trail would be subject to these conditions. While the CAS and Shoreline Variance Letter detail that these improvements will not cause significant effects to the shoreline, there is no specific detail regarding the demonstration of the need to protect principal uses or structures from erosion, or that severe or unusual erosion has occurred within the area.</p> | D | <p>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 shoreline stabilization measures will protect the proposed ADA-accessible public access trail and restoration areas located landward of the beach. No filling is proposed waterward of OHWM. Severe erosion has occurred along the south shoreline and is being addressed by a separately permitted project. F44The erosion control structures are compliant with all sections of MICC 19.13.050(B)(4). The rock terraces and rock revetment walls are located above the OHWM and do not encroach waterward of the ordinary high water mark. These walls function cannot be addressed using only nonstructural methods, such as riparian vegetation, because the south-on-grade trail is located in a steep slope, and walls are required to provide shoreline stabilization to support the improved pedestrian access to the beach. As stated in the "Shoreline Substantial Development Permit, Shoreline Conditional Use Permit, and Shoreline Variance Request for the Luther Burbank Park Waterfront Improvements Project" Per MICC 19.13.040, new hard structural shoreline stabilization measures are permitted with a SCUP within the Urban Park environment.</p> <p>Landward of the design the soil is stabilized through riparian, native planting. The shoreline is stabilized where possible with LWD (large woody debris) logs and root wads placed above the OHWM. LWD provides refuge for juvenile and adult fish, creates pools for juvenile fish and 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 389 sq feet. The increased beach and nearshore area (up to a water depth of 12 feet) provides increased and improved habitat opportunities for migrating juvenile salmon.</p> <p>This design reflects the modelling findings performed by Blue Coast in the report "Luther Burbank Marina Design: Wave and Wake Modeling" which states that for this project "100-year wind-waves were not considered because storm winds occur during winter, when the Lake Washington water level is low. During summer wind conditions are calm and boat activity increases. Therefore, the shoreline is more susceptible to boat wakes when the water level is higher." The OHWM elevation is 18.67, calculated scour depth is 2' minimum below the lowest elevation of the sheet pile wall (elevation 22.4). Runup 2% height was calculated at elevation 20.2. The proposed wave attenuator float at Luther Burbank Park 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 marina predict that wave heights will be reduced between 0.5 and 1.0 feet along portions of the Luther Burbank Park shoreline compared to adjacent shorelines. This reduction in wave height will subsequently reduce wave energy the nearshore and along the shoreline areas of the park; thus reducing the erosion due to waves and boat wake in these areas.</p> | |
| 28 | Comm #6 | <p>Per MICC 19.13.050(H)(7), the first in-water set of pilings shall be steel, ten 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.</p> <ul style="list-style-type: none"> o The first proposed in-water set of pilings (shown on plan sheets S-012 and S-050) has a diameter of 16 inches. o The proposed pilings beyond the first in-water set are 16 and 24 inches in diameter. <p>If there is a reason for the increased diameter, the justification should be included in the Shoreline Variance Letter.</p> | | See reponses in items 21 and 22 above | |

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| 29 | Comm #7 | Per WAC 173-27-170(2)(b), the hardship is the result of unique conditions such as natural features, and is not from the applicant's own actions. The applicant should confirm that the justification to reduce light transmittance in the grated surface of the central wave attenuator is due to the nature of the site, rather than as a result of the request for a larger than typical dock width. | | Updated Shoreline Permit narative includes additional justification. | |