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ANCHOR QEA

August 28, 2023

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

Re: Shoreline Variance Request (Grating Requirements) for the Luther Burbank Park Waterfront Improvements Project

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 letter includes a request for a variance from dock grating requirements, per Mercer Island City Code (MICC) 19.13.050(H)(5). Separate applications are being provided to cover variance requests for dock width, pile diameter, and fixed pier height.

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 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 Joint Aquatic Resources Permit (JARPA; Exhibit 4).

2 Shoreline Master Program Compliance

The Project is located within the City's Shoreline Master Program (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.

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 protect shoreline restoration ecological function from wave and wake erosion and provide adequate wave attenuation and protection for users of the south dock structure, the attenuation float installed at the central dock will be concrete with no grating. The bulk of the structure is located as far offshore as practical, in approximately 40 feet of water, to reduce the effect of shading on the lake bottom. However, a variance from MICC 19.13.050(H)(5) requirements for 40% light transmittance over 100% of the dock is requested to allow for a concrete float to be installed at the central dock.

Project elements requiring a Shoreline Variance include the central dock grating.

The central wave attenuator/mooring float is required to be a concrete float with significant weight. The goal is to protect shoreline restoration ecological functions and provide safe use and programming for the south dock. 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. Where protection is unavailable, these large waves also impact the shoreline, causing erosion. South of the Project area, the City installed habitat-grade gravel and planted native plant species along the shoreline. Without protection, these areas are subject to continued erosion from these large waves hitting the shoreline.

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.[1] 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 and the planting of native riparian plant species (permitted under City Permit Nos. SHL20-016 and SHL SHL21-009). In addition to providing supplemental protection to the nearshore habitat area, it is anticipated that the attenuation float will provide the following benefits:

- Provide adequate attenuation for wave action at the site and protect against the types of waves generated by the wake surfing boats that frequently operate offshore near the park.
- Provide sufficient wave attenuation to protect dock users from wave and wake action during dock programs.
- Provide sufficient access for first responders to reach firefighting standpipes and operate firefighting equipment on the central dock.
- Provide ADA-compliant access.
- Accommodate launching a variety of small craft, including one- and two-person sailboats (typical width of these boat types is up to 6 feet).

Figures 1 and 2 include graphic depictions 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.

[1] 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 Study (Attachment 3 of Exhibit 4).

Figure 1
Plan View of Resulting 100-Year Significant Northerly and Southerly Wind-Wave Heights

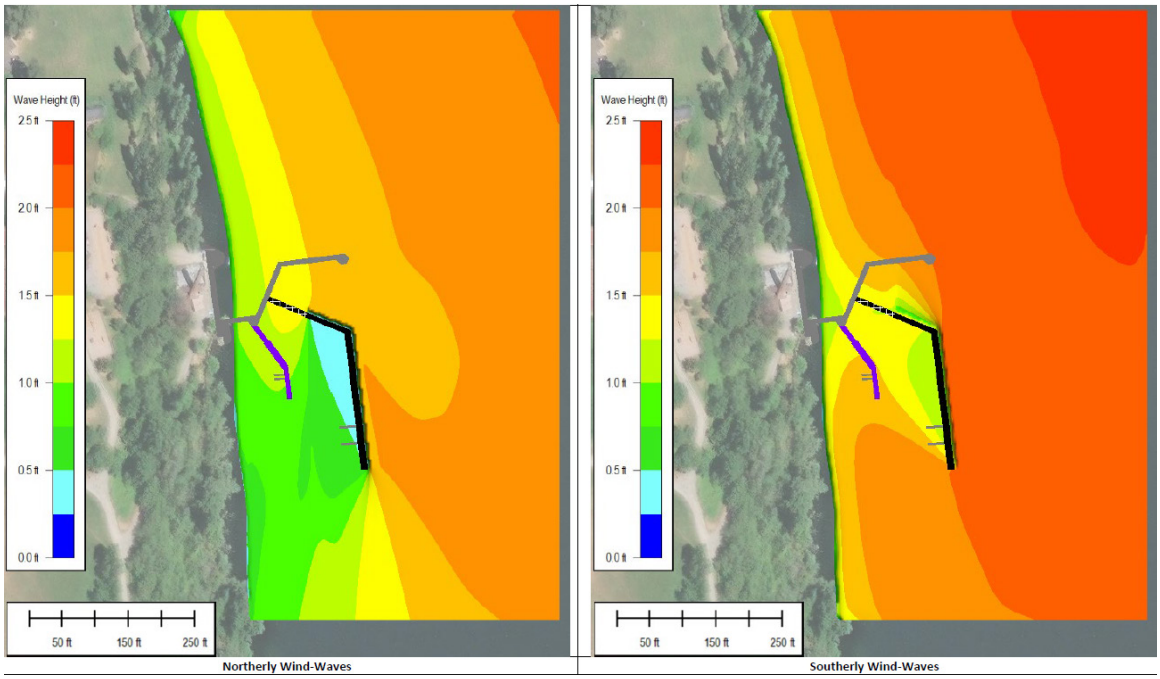
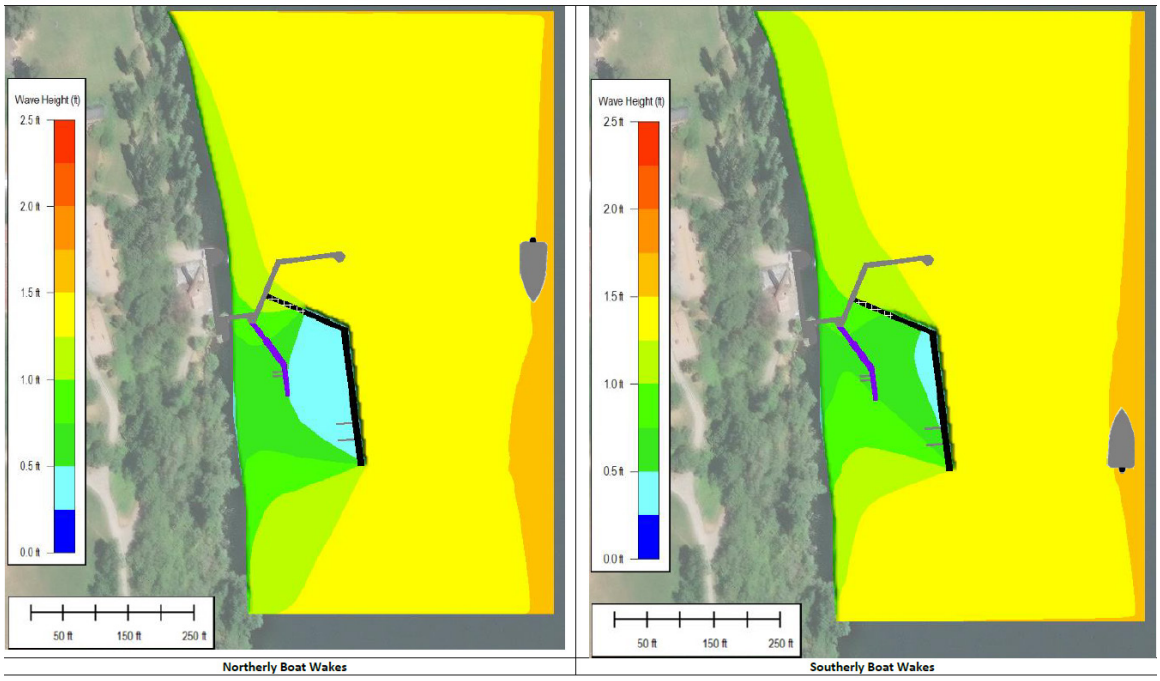


Figure 2
Plan View of Resulting Boat Wake Heights Relative to Northerly and Southerly Boat Wakes



The float material will be concrete. This includes heavier-than-typical float components, including the floats and structural bracing, to provide adequate protection against anticipated wave energy. By design, the float cannot incorporate functional grating due to the underlying structural components that would prohibit light penetration.

Although public access piers, docks, or boardwalks are allowed uses, the City is requesting a Shoreline Variance from MICC 19.13.050(H)(5) dock grating requirements to allow the central wave attenuator/mooring float structure to provide less light transmittance than is allowed by the code (the code requires 40% light transmittance over 100% of the dock). The variance is being requested to install a central wave attenuator/mooring float that provides adequate attenuation for wave action at the site and to protect against the types of waves generated by the wake surfing boats that frequently operate offshore near the park. The wave attenuator cannot be retrofitted with functional grating due to the size and underlying structural components required for the structure. This is a unique condition experienced at the site that could impact user health and safety if not addressed.

The proposed design acknowledges that the nearshore area (up to a water depth of 12 feet) provides habitat opportunities for migrating juvenile Chinook salmon. The bulk of the structure is located as far offshore as practical (the closest point is approximately 115 feet from the ordinary high water mark [OHWM]) and in deeper water (approximately 40 feet) to reduce the effect of shading on the lake bottom. Reducing overwater cover in or relocating structures away from these areas will reduce areas 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 is less likely to harbor predator species, and there would be less impact on light penetration and shadowing to the substrate. The proposed design aims to minimize impacts to the nearshore area, with the use of grated overwater surfacing where practicable, and proposes strategies to further reduce impacts from overwater cover in the entire Project area while resulting in no net loss of shoreline ecological function, as demonstrated in the Critical Areas Study (attached to the JARPA in Exhibit 4).

3 Shoreline Variance Requirements Consistency

The City's SMP does not have specific variance criteria. However, per MICC 19.13.020(C)(2), whenever an applicant seeks a variance, the applicant shall provide the City with a plan that demonstrates that the project will not create a net loss in ecological function to the shorelands. The Critical Areas Study for the Project, included with this letter, provides a demonstration of no net loss of ecological function to the shoreline environment from the Project.

The Washington State Department of Ecology (Ecology) promulgates the Shoreline Management Act at a state level and reviews Shoreline Variances once they are approved by the local jurisdiction. To support City and Ecology review, the table in Attachment 1 describes the Project's consistency with Shoreline Variance criteria in the Washington Administrative Code (WAC) 173-27-170.

4 Conclusion

A Shoreline Variance is being requested due to extraordinary circumstances that present a hardship at the site, including wave and wake conditions that can be addressed through the design of the Project. Other extraordinary circumstances at the site are related to consistently increasing use of Luther Burbank Park and the need to provide safe access and improve accessibility for those with mobility limitations that visit the park. It is expected that the new Sound Transit light rail line, which will include a stop near the park, will increase park visitors and the need for appropriate public access improvements and safety upgrades related to this variance request. The proposed solid decking of the wave attenuation float will comply with Shoreline Variance criteria as described in the previous sections and in Attachment 1.

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. Although the Project proposes solid surface decking for the wave attenuator/mooring float in the deeper water, impacts to salmonids are diminished for deeper water cover because the habitat is less suitable for predators, and light and dark shadows are diminished in deeper water. Overall, it is anticipated that the Project will result in no net loss of shoreline ecological function, as demonstrated in the Critical Areas Study provided with this application.

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 Shoreline Variance criteria per WAC 173-27-170.

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

Attachment

Attachment 1 Analysis of Compliance with Shoreline Variance Requirements (WAC 173-27-170)

Attachment 1
Analysis of Compliance with Shoreline Variance Requirements (WAC 173-27-170)

Consistency with WAC 173-27-170, Review Criteria for Variance Permits

Code Reference	Development Standard Compliance
1) Variance permits should be granted in circumstances where denial of the permit would result in a thwarting of the policy enumerated in RCW 90.58.020. In all instances the applicant must demonstrate that extraordinary circumstances shall be shown and the public interest shall suffer no substantial detrimental effect.	The City is seeking a variance from the following criteria in the SMP per MICC 19.13.050(H) for public access docks or boardwalks. The City is seeking a variance from the **light transmittance conditions** of MICC 19.13.050(H)(5) requiring public access docks to be grated with materials that allow a minimum of 40% light transmittance over 100% of the surface area. The variance is specifically for the central float that will serve as an attenuation structure to protect facilities and shoreline restoration areas from wave and wake conditions at the site. The wave and wake conditions at the site present extraordinary circumstances that can be addressed through the design of the Project. The float reduces wave energy from both storm waves present during winter months and large boat wakes present primarily during summer months. The attenuation structure will have concrete decking and no grated surfaces. If the decking were grated, light transmittance would be inhibited by structural components required to allow the wave attenuator/mooring float to provide critical safety functions for public use of the dock, including ADA accessibility, and protection of shoreline ecological functions. Other extraordinary circumstances at the site are related to consistently increasing use of Luther Burbank Park and the need to provide safe access and improve accessibility for those with mobility limitations that visit the park. It is expected that the new Sound Transit light rail line, which will include a stop near the park, will increase park visitors and further the need for appropriate public access improvements and safety upgrades related to this variance request. The dock structure and platform are located within a shoreline environment that was previously used as a steam plant and is heavily modified from natural conditions, including shoreline fill and overwater development and structures. Consistent with RCW 90.58.020, the Project is compliant with statewide standards for shoreline protection. The City is committed to incorporating environmental enhancements and avoidance and minimization measures into the Project to demonstrate no net loss of ecological functions. Measures include reducing net overwater coverage, installing functional grating to the extent practicable, and shoreline landscaping and riparian plantings.

Code Reference	Development Standard Compliance
	Additionally, BMPs will be implemented during construction to reduce potential impacts to the shoreline environment. Overall, the Project will improve public access and safety at the dock and plaza area and enhance the user experience. The Project is consistent with the approved master plan for Luther Burbank Park and is supported by the City's parks, recreation, and open space plan adopted in 2022.[2] The Project is not anticipated to result in any detriment to the public interest.
2) Variance permits for development and/or uses that will be located landward of the ordinary high water mark (OHWM), as defined in RCW 90.58.030 (2)©, and/or landward of any wetland as defined in RCW 90.58.030 (2)(h), may be authorized provided the applicant can demonstrate all of the following: 1. That the strict application of the bulk, dimensional or performance standards set forth in the applicable master program precludes, or significantly interferes with, reasonable use of the property; 2. That the hardship described in (a) of this subsection is specifically related to the property, and is the result of unique conditions such as irregular lot shape, size, or natural features and the application of the master program, and not, for example, from deed restrictions or the applicant's own actions; 3. That the 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 and will not cause adverse impacts to the shoreline environment; 4. That the variance will not constitute a grant of special privilege not enjoyed by the other properties in the area; 5. That the variance requested is the minimum necessary to afford relief; and 6. That the public interest will suffer no substantial detrimental effect.	Not applicable. Variance permits are not being requested for upland development or uses. For compliance with WAC 173-27-170(3), in-water activities must demonstrate compliance with WAC 173-27-170(2)(b-f). These activities are consistent with these standards described as follows: b) The hardship on the applicant for meeting the standards of this SMP is specifically related to the property and unique conditions. For the dock structure variance request, a concrete decking wave attenuation float is proposed to protect shoreline restoration ecological functions and users against higher wave and wake action experienced at the site, which present extraordinary circumstances that can be addressed through the design of the Project. The structure will also support ADA accessibility. c) The Project includes replacing an existing dock and providing waterfront improvements that are compatible with existing authorized uses and programs at the park. This is consistent with the comprehensive plan and SMP and will result in no net loss in ecological function at the site. d) The existing dock structure does not currently provide wave and wake protection to the shoreline or existing dock infrastructure. The new dock will protect shoreline habitat restoration along the south shoreline area. The structure will also protect against wave and wake conditions at the site that have the potential to impact user safety if not addressed through structural methods. The variance will provide needed safety at a public dock and ADA accessibility in a unique waterfront environment and is not expected to constitute a grant of special privilege not enjoyed by the other properties in the area. e) The requested variance is the minimum necessary to afford relief.

[2] City of Mercer Island, 2022. *City of Mercer Island Parks, Recreation and Open Space Plan*. March 2022. Available at: https://www.mercerisland.gov/parksrec/page/pros-plan-2022.

Code Reference	Development Standard Compliance
	f) The variance is being requested to support a structure designed to protect shoreline restoration ecological functions and public dock users from wave and wake conditions in a unique waterfront environment, and it is expected that the public will benefit from the proposed waterfront improvements.
3) Variance permits for development and/or uses that will be located waterward of the ordinary high water mark (OHWM), as defined in RCW 90.58.030 (2)(c), or within any wetland as defined in RCW 90.58.030 (2)(h), may be authorized provided the applicant can demonstrate all of the following: a) That the strict application of the bulk, dimensional or performance standards set forth in the applicable master program precludes all reasonable use of the property; b) That the proposal is consistent with the criteria established under subsection (2)(b) through (f) of this section; and c) That the public rights of navigation and use of the shorelines will not be adversely affected.	A variance for dimensional and performance standards for development located waterward of the OHWM is being requested, as described earlier in response to WAC 173-27-170(1) and (2). The strict application of the bulk dimensional standards set forth in the City's SMP interferes with the reasonable use of the property by requiring grating requirements that limit the City's ability to replace the existing structure in a manner that accommodates the unique waterfront environment, including challenging wave and wake conditions, and adequately protects the safety of public users while improving access to the shoreline. For example, standard SMP conditions include specific light transmittal requirements, which would significantly reduce the attenuation float intended functions, including protecting facilities and the shoreline restoration area against wind and wake conditions experienced at the site; limiting the width available for small sailboat trailers to be able to access the float; increasing the potential for tipping users off of the float during high wake or wave events; and providing insufficient wave attenuation for adequate protection of the small finger floats intended to provide public access to stand-up paddle boards, kayaks, and small sailboats. A variance for dimensional and performance standards is being requested to allow the City to waive grating requirements for the wave attenuation/mooring float below the 40% functional grating requirement over 100% of the surface area for public moorage facilities per MICC 19.13.050(H)(5). To support a safe float design, the 40% grating requirement is structurally infeasible due to the need to install heavier-than-typical float components, including the float and structural bracing, to provide adequate protection against anticipated wave and wake energy. The proposed dock repairs to improve public access and use of the shoreline are included in the 2006 *Luther Burbank Park Master Plan*, which is cited in the most recent comprehensive plan. The *Luther Burbank Park Master Plan* was used to guide the design process, which provides a vision of a waterfront activity center that is centered around small boats. The dock structure is located within a shoreline environment that was previously used as a steam

Code Reference	Development Standard Compliance
	plant and is heavily modified from natural conditions, including shoreline fill and overwater development and structures. Consistent with RCW 90.58.020, the Project is compliant with statewide standards for shoreline protection. The City is committed to incorporating environmental enhancements and avoidance and minimization measures into the Project to demonstrate no net loss of ecological functions. Measures include reducing net overwater coverage, installing functional grating to the extent practicable, and shoreline landscaping and riparian plantings. Additionally, the floats have been intentionally located in deeper water to reduce obstructions and overwater cover in the nearshore habitat area. BMPs will be implemented during construction to reduce potential impacts and result in no net loss of shoreline ecological functions, as described in the Critical Areas Study and Biological Evaluation included with the JARPA (Exhibit 4). The variance is being requested by the City to provide safe access and operation to users who frequent the Luther Burbank Park dock and to protect shoreline ecological function of habitat restoration areas. The variance is for a public facility and is not being requested to grant special privilege that could not be enjoyed by other properties in the area, and it would allow the minimum necessary to afford relief. Overall, the Project will improve public access and safety at the Luther Burbank Park dock and waterfront plaza. The Project is supported by the City and park users and is not anticipated to result in any detriment to public interest.
4) In the granting of all variance permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example if variances were granted to other developments and/or uses in the area where similar circumstances exist the total of the variances shall also remain consistent with the policies of RCW 90.58.020 and shall not cause substantial adverse effects to the shoreline environment.	The City is not aware of other variances that have been issued in the area for similar circumstances.
5) Variances from the use regulations of the master program are prohibited.	Not applicable. A variance from the use regulations of the SMP is not being requested for the Project.

Notes
ADA: Americans with Disabilities Act
BMP: best management practice
City: City of Mercer Island
JARPA: Joint Aquatic Resources Permit Application

MICC: Mercer Island City Code
Project: Luther Burbank Park Waterfront Improvements Project
RCW: Revised Code of Washington
SMP: Shoreline Master Program
WAC: Washington Administrative Code