

General and Site Plan

1. A pre-application meeting is required for bulkhead replacements (SMP 6.1.5.1), as relayed to the home owner on Jan. 16, 2019 (see attached email). A [preapplication waiver](#), signed by the planning manager or director, must be provided or preapplication conference must be requested.

A waiver will be submitted for review by Planning Director, Heather Beckman.

2. The April 21, 2020 cover letter references two technical memoranda dated January 14, 2020 and March 30, 2020. These are not included in the electronic file, however. Although not required per the City's Administrative Manual, please consider providing.

3. It appears that a portion of the bulkhead will be replaced waterward of the OHWM, at the north end of the bulkhead. This is not authorized without a shoreline variance, pursuant to SMP Section 6.2.6.1.1. Please revise.

Shoreline Variance has been submitted for the project as well.

4. The preferred alternatives analysis must be provided, completed by a qualified professional (SMP Section 6.2.8.1 & 2; SMP Section 6.2.10.1.g).

The geotechnical report addresses that the only option for the site given the safety concerns to the home, alternative analysis in Earth Solutions page 2 of June 24, 2020 letter.

5. Please verify that the application addresses each item in SMP 6.2.10.a.-m., including:

(h) Existing shoreline stabilization within the reach of the proposed project

The shoreline stabilization that was in place included a rock bulkhead, total of +/-104' and a wooden bulkhead section +/-10. These structures are shown on the plans, sheet C2.

(i) Any outreach efforts to coordinate with property owners within the shoreline reach to address an ecosystem-wide restoration plan

Neighboring lot to the NW (Guddat) is protected by a similarly constructed rock bulkhead, as are the next neighbors that direction. In the other direction to the SE there is also a rock bulkhead. These are shown in the plans, sheet C2. The neighbors to the NW of the Guddat site also had work completed to also result in a net gain of upper intertidal habitat by moving bulkhead sections that were reconstructed landward as much as deemed safe.

(k) A discussion of the cause of shoreline erosion including assessment of ecosystem-wide processes occurring both waterward and landward of the OHWM and an analysis of on-site and/or adjacent upland drainage.

It is noted by the Ellisport report dated Dec 20, 2019 states that in the seven month span between their visits (May 2019 and Dec 2019) the beach elevation had dropped 18-24" and that the toe erosion had caused the base rocks to no longer be embedded into the substrate of the beach. The letter from Earth Solutions, NW LLC dated Dec 17, 2019 page 1 notes that the scour along the bulkhead is due to the base rocks now being fully exposed. This beach elevation drop had caused a partial failure near the north end of the bulkhead. They also note that this footing exposure had shown impacts of slope movement above the bulkhead as well. The conclusion is then stated that the bulkhead failure was considered high and imminent.

(Suggestion to include a memo that indicates where each item, a through m, is located within the application, if contained in various reports/documents.)

6. Please refer to the City's [Administrative Manual](#) for basic site plan requirements. Existing native vegetation, significant trees, areas of disturbance, shoreline buffer zones, setbacks, critical areas, etc. must be provided. See marked-up site plan for additional notes.

Plans are provided along with an as built.

7. Please clarify proposed versus existing structures on the site plan. It appears that in addition to the bulkhead, the proposal includes the following:

Please review the existing site conditions and the as built plans provided.

a. New retaining walls (Note: retaining walls require a shoreline conditional use permit (SCUP). A preapplication conference is required for SCUPs.)

The walls on site were replacements of existing that were in need of reconstruction to continue to support access and soils for revegetation. The replacement walls were constructed in a smaller footprint than what was originally in place.

b. New stairs along a side lot line

These stairs were replacements and total square footage was reduced to restore upland with native vegetation plantings.

c. New pathway

Pathway was existing and redesigned to reduce footprint on the slope and allow additional planting areas for native plants.

d. New stairs built into the bulkhead

The access steps built into the bulkhead replace the old steps that provided access to the beach. The old steps were built out beyond the face of the rock bulkhead. The replacement steps are built to extend no further waterward than the reconstructed bulkhead. Therefore, the reconstructed bulkhead with the steps provides a net gain of shoreline footprint.

e. New or expanded patio area adjacent to the bulkhead

The area along the top of the bulkhead existing previously. The total square footage of this area was not changed.

8. It is not clear from the application that the proposed structures identified above meet the provisions in SMP Section 4.1.3. Please demonstrate that the standards for structure sizes within the shoreline buffer are met. Additionally, these items must be evaluated in the site-specific impact analysis in accordance with SMP Section 4.1.2 and the geotechnical evaluation in accordance with SMP Appendix B, Subsection B-9.

The old paths shown on sheet C2 of the plans were a total of approximately 80'x5' and 30'x2'=total of 460 square feet. As reconstructed along the slope, these paths were changed to approximately 65'x3' and 40'x3' = total of 315 square feet. Therefore, the reconstruction and reconfiguration of the paths resulted in a reduction of footprint by 145 square feet.

The retaining walls along the slope were approximately 55'x2', 20'x3' and 10'x2' = total of +/- 190 square feet. The reconstructed walls, rock was used to replace the old wood material along the

longest wall, are approximately 60'x1', 20'x1' and 40'x1' = total of 120 square feet. The walls were reduced in square footage as appropriate to allow for adequate slope support and safe access to the top of the bulkhead and beach stairs.

The completion of the upper slope work resulted in an increase of area available for native plantings to be installed. The original area taken up by pathways was reduced by 145 square feet and the walls reduced by 70 square feet. This restored a total of +/- 215 square feet of the slope to be returned to natural conditions and provide more space for native plants to be installed and thrive. Any non native and invasive species were removed from the slope to allow for dense installation of native plants, per the list on the attached planting plan, page C3 of the plans submitted. The total and species of the plants installed along the slope include those on the attached "Manlowe Planting List and Location" along with sketch showing areas noted.

Total plants installed: 255

9. Please demonstrate that structures located in zoning setback meet permitted modifications, [BIMC Table 18.12.040](#).

The walls within the slope are addressed by Earth Solutions, letter dated June 24, 2020, page 1, as part of the project overview as being "appropriate and feasible." Also see page 2 of this letter stating that the upland work and proposed planting would result in improvements of erosion hazards. Also, the reconstruction of these elements resulted in reduction of the footprints.

10. Please clarify: is grading or fill proposed on the upland? If so, provide total quantities and demonstrate compliance with SMP Section 4.1.4. (Note: landfill requires an SCUP, and grading that exceeds 250 cubic yards is not exempt from the shoreline substantial development permit requirement.)

The areas for the pathways and steps were smoothed out but no removal of material. New mulch was installed to accommodate the required plantings.

11. Please amend the SEPA checklist based on the comments in this memorandum, if necessary.

Updated SEPA provided.

Geotechnical Report

12. The geotechnical evaluation (Earth Solutions NW, LLC, dated December 17, 2019) does not appear to satisfy the criteria in SMP Section 6.2.10.1.m, including:

See updated report from May 2020.

a. The estimated rate of erosion and eminent danger within the time threshold as provided in Section 6.2 and the following:

Earth Solutions dated June 24, 2020 page 2 states that left in the state the bulkhead was in prior to the emergency work would result in a rate of erosion in the tens of feet in a short period of time, one day, if hit with a high tide storm event. Therefore, the conclusion was for immediate replacement work.

i. Proof of a geotechnical design of the structural stabilization; and

The June 24th, 2020 letter from Earth Solutions completed a scope review of the work proposed and concludes the work is needed to stabilize the subject property, along with the neighboring properties (page 2).

ii. Washington State licensed civil engineer with a specialty in coastal engineering or a qualified Washington State licensed geologist with a specialty in coastal geology and a qualified marine habitat biologist shall evaluate the cumulative effects of stabilization methods within a drift cell; and (*Coordinate this with site-specific impact analysis cumulative impacts section*)

Earth Solutions and Ellisport Engineering are experienced engineering firms with background working on the projects along the saltwater shorelines of Puget Sound. Leon Environmental completed the no net loss report.

iii. Maintenance, Monitoring and Planting Plan as required by Section 4.1.2,

The planting plan is attached showing the areas of the slope that new native plants were installed, total of +/- 315 native plants covering the slope.

Environmental Impacts. (*Coordinate this with the no net loss report*).

13. The report must address the criteria in SMP Section 6.2.8.1.b & c. The report provided does not evaluate the cause of erosion or its rate.

The report by Earth Solutions dated June 24, 2020 details the erosion and movement of the slope being caused from the exposure of the footings of the base rocks with scour of the toe.

14. All development and activities proposed in geologically hazardous areas and buffers must be evaluated in accordance with the requirements of SMP Appendix B, Subsection B-9. This applies to the bulkhead, vegetation activities, and proposed upland development (pathway, stairs, patio, etc.)

Please see Page 2 of the Earth Solutions report dated June 24, 2020.

Site-Specific Impact Analysis

15. Please consider including baseline environmental conditions from the following documents relevant to ecosystem conditions and trends, assessment of ecological conditions, and special management recommendations:

The two provided letters and information from Earth Solutions along with the letter from Ellisport Engineering outline the need for the bulkhead replacement work and the threat to the home should the work had not been done as soon as possible. The estimated rate of erosion should the bulkhead had been left in the state it was inspected in December 2019 paired with a high tide storm event would have been in tens of feet within as little as 24-hour period. Failure of the existing bulkhead was imminent, and work was recommended as a full replacement as soon as possible. The work was designed to result in a net gain of upper intertidal habitat with the overall footprint of the bulkhead being moved landward. The shoreline habitat was also improved with the installation of native vegetation along the slope and removal of invasive and non-native species.

a. Puget Sound Action Agenda

i. Shoreline armoring is a “vital sign” used to indicate progress in our regions efforts to recover the Puget Sound ecosystem. 29% of Puget Sound shorelines are armored. Recovery targets include:

- Soft shore techniques are used for all new and replacement armoring, unless it is demonstrably infeasible.

- Net reduction in total amount of armoring: The total amount of armoring removed should be greater than the total amount of new armoring in Puget Sound (total miles removed is greater than the total miles added).

- Feeder bluffs receive strategic attention for removal of existing armoring and avoidance of new armoring.

b. West Central LIO Ecosystem Recovery Plan

i. This ecosystem recovery plan is for the portion of Puget Sound that includes Bainbridge Island.

ii. “Nearshore habitat and submerged aquatic vegetation” is one of the three ecosystem components on which the recovery plan is focused (pages 5-6).

iii. Marine shoreline infrastructure, including shoreline armoring, is a “very high” source of pressure on the ecosystem (pages 22, 27).

iv. Priority recovery strategies include:

- Enable and encourage residents to take informed stewardship actions addressing infiltration, pollution reduction, habitat improvement forest cover, soil development, critical areas, reductions in shoreline armoring (see #26.3 on page 31).

- Implement and maintain priority marine restoration projects, which includes removing shoreline armoring and offering restoration incentives (in technical assistance and financial assistance) (see #17.2 on page 32)

- Increase compliance with and enforcement of environmental laws, regulations, and permits (see #9.6 on page 32)

c. Nearshore Habitat Inventory and Characterization Report

i. This report characterizes the ecological health of shorelines around Bainbridge Island.

ii. The project site is located within the Murden Cove Management Area (maps on pages B-39 to B-49), which has a “low/moderate impact” ecosystem rating with 34% shoreline armoring (page 51) and specific opportunities for ecosystem improvement related to armoring.

iii. The project site is located within Reach 3163 (page 54), which:

- Has a “moderate impact” ecosystem rating with 86.5% shoreline armoring of which 39.5% encroaches waterward of the ordinary high-water mark.

- Is “semi-protected” from wave exposure.

- Has a relatively high ecological function score.

iv. Appendix E provides a methodology for identifying appropriate management action strategies based on the degree of disturbance and site characteristics. Pages E-15 to

E-17 describe 8 criteria that should be used to further refine the best management action for a project site.

d. **SMP Shoreline Restoration Plan**

i. This plan was developed to meet requirements of the Washington State Shoreline Management Act and is largely based on the Bainbridge Island Nearshore Habitat Inventory and Characterization Report and Puget Sound Nearshore Ecosystem Restoration Project guidance.

ii. The Murden Cove Management Area is discussed on pages 34-37.

16. The site-specific impact analysis must evaluate the impacts from all proposed development and activities. Please incorporate proposed upland activities (new pathways, stairs, patio area, etc.) into all applicable section of the report, including sections 1.1, 4.0, and 5.0, in accordance with the provisions in SMP Section 4.1.2 and SMP Section 4.1.3.

The upland work replaced existing walls, walkways, stairs that were already along the slope. The old paths shown on sheet C2 of the plans were a total of approximately 80'x5' and 30'x2'=total of 460 square feet. As reconstructed along the slope, these paths were changed to approximately 65'x3' and 40'x3' = total of 315 square feet. Therefore, the reconstruction and reconfiguration of the paths resulted in a reduction of footprint by 145 square feet.

The retaining walls along the slope were approximately 55'x2', 20'x3' and 10'x2' = total of +/- 190 square feet. The reconstructed walls, rock was used to replace the old wood material along the longest wall, are approximately 60'x1', 20'x1' and 40'x1' = total of 120 square feet. The walls were reduced in square footage as appropriate to allow for adequate slope support and safe access to the top of the bulkhead and beach stairs.

The completion of the upper slope work resulted in an increase of area available for native plantings to be installed. The original area taken up by pathways was reduced by 145 square feet and the walls reduced by 70 square feet. This restored a total of +/- 215 square feet of the slope to be returned to natural conditions and provide more space for native plants to be installed and thrive.

17. New tee-diffusers (pg. 4-3) will require City-review and approval. Suggestion to include this is the current application.

No t-diffuser, the existing drainage was extended to outlet into the back of the armor rock for dissipation.

18. Avoidance measures are inadequate/missing. What specific measures are being taken to avoid certain impacts that could otherwise occur from such a proposal? E.g. identify and flag native vegetation to avoid inadvertent removal. Please also include measures taken to avoid impacts to aquatic habitat, from use of a barge. Additionally, please identify which impacts are being minimized in the minimization measures section, 4.4.2. For example, what impact is being minimized by moving the face of the bulkhead landward?

All work was completed with the oversight and approval of the WDFW. The emergency work was measured and approved with Nam Siu, WDFW arear habitat biologist for the project. The replacement rock bulkhead section was moved back safely to result in a net gain of upper intertidal habitat. The wood bulkhead section was moved waterward to avoid further impacts to the shoreline with sharp angles for the wave energy to continue to deflect against and cause toe erosion. The overall outcome still resulted

in a net gain of upper intertidal habitat and restored the functions and values of the upland with the removal of non-native plants and installation of many native plant species along the slope.

19. Please clarify: Construction schedule (section 4.3) conflicts with first bullet under 'minimization efforts' (section 4.4.2).

The construction schedule was for work to be done as soon as possible once approved for emergency construction by COBI and WDFW. All work was done within the approved HPA timeframe allowed. All provisions of the HPA were followed.

20. Refer to SMP Section 4.1.2.5.5 for mitigation measures for site-disturbance from shoreline stabilization. Incorporate into report section 4.4.5, as appropriate. Additional compensation measures may be required to mitigate for impacts from new upland development. The final planting plan must be provided with the shoreline exemption application, depicting plant species, locations, spacing, and quantities.

Final planting plan is provided. The upland construction included a reduction in structures and increase in native plantings for an overall increase in the functions and values of the property.

21. Report section 5.1.1, Direct Effects, should be limited to impacts. The same applies to section 5.1.2, Indirect Effects. A discussion of project "benefits" should be included in section 5.3 or other appropriate section. Further, it is not clear how the conclusion "native plantings will provide additional environmental lift over existing conditions" was reached. Please substantiate this conclusion in the appropriate section.

The removal of nonnative plants and increasing the density of native plants appropriate for saltwater shorelines is recommended by the Washington Department of Fish and Wildlife, "Your Marine Waterfront: A guide to protecting your property while promoting healthy shoreline." The species installed are included in this pamphlet.

22. The cumulative effects analysis, section 5.1.4, should take into account the lifespan of a new bulkhead and its effect on shoreline processes. E.g. How will the bulkhead impact sediment transport in the long-term?

The cumulative effects of the project result in an increase in the functions and values of the shoreline habitat. This is accomplished with the net gain of upper intertidal habitat with an overall bulkhead replacement landward as much as was determined safe for excavation. The removal of invasive species along the slope and replacing the entire slope with site appropriate native plants will have a benefit for the upland habitat of the site. The project also reduced the structures along the slope with the replacement of pathways and walls with smaller versions to provide continued safe access down the slope and to the shoreline and for revegetation areas along the slope.