

EXHIBIT V

Anchor QEA Technical Memorandum: Project Permit Review

(December 18, 2020)

Memorandum

December 18, 2020

To: Marla Powers and Karla Boughton, City of Poulsbo

From: Marc Auten, Anchor QEA, LLC

cc: Heather Page, Anchor QEA, LLC

Re: Port of Poulsbo Breakwater Rehabilitation Project Permit Review

This memorandum provides the City of Poulsbo (City) with an analysis of whether the Port of Poulsbo's (Port's) proposed Breakwater Rehabilitation Project (project) meets the criteria for a consolidated Type III permit. The consolidated Type III permit includes a Type III Shoreline Substantial Development Permit for the Marina Expansion, a Type III Permit for Shoreline Conditional Use for the Breakwater replacement, a Type III Shoreline Conditional Use for the floating upweller system (FLUPSY), and a Type I Permit for the Floodplain Development Permit. This memorandum includes the project understanding, followed by an analysis of relevant Poulsbo Municipal Code (PMC) sections.

Project Understanding

The Port proposes to replace its deteriorated vertical pile and log boom breakwater at its public marina. The existing fixed breakwater consists of two sections (West and South), with both vertical (plumb) and batter pile. To replace this structure, the Port proposes to install a reused concrete floating breakwater from Elliott Bay Marina. The new 12-foot-wide floating breakwater would be installed waterward of the existing breakwater, at depths exceeding -10 feet mean lower low water. The new breakwater would be connected to the Port's existing AA-dock by the installation of an 8-foot-wide grated main walk float. The project would also include 22 new finger floats to provide additional transient moorage. To provide additional recreational opportunities for the Port, the Port proposes to install a new floating restroom and a FLUPSY attached to the new breakwater.

As described in the Port's Mitigation Plan, the project would result in an increase of 22,379 square feet of structure and 20,691 square feet of shading impacts. The project would also result in removal of 59,952 square feet of structure and 8,000 square feet of shading impacts. In all, the Port stated that the project would result in net decrease of 37,573 square feet of structure and a net decrease of 12,691 square feet of overwater shading.

Individual impacts and mitigation associated with specific project components, as listed in Table 1 of the Port's Mitigation Plan, are as follows:

- The existing 898 creosote-treated piles and 33 steel piles (total area of 2,080 square feet) would be replaced with 72 steel piles (total area of 557 square feet).

- The existing breakwater floats, walls, and log booms, totaling 6,695 square feet, would be replaced with 16,853 square feet of new breakwater features.
- An existing 51,178 square feet of submerged rock and debris would be removed.
- The project would install 4,026 square feet of new finger floats, a 450-square-foot FLUPSY, and a 493-square-foot restroom, totaling 4,969 square feet of impact.
- The project would add 20,691 square feet of overwater coverage and remove 8,000 square feet of overwater coverage. This would result in a net increase of 12,691 square feet of overwater coverage.

The Port-described impacts assume that structures that have a grated surface would result in reduced shading of aquatic habitat. The Washington Department of Fish and Wildlife's (WDFW's) *Final Programmatic Environmental Impact Statement* (PEIS) removed the requirement to grate 100% of residential and public facility decks from the hydraulic code rule. This is because "some research shows the sunlight penetrated through the grating on average about 10% more than traditional planked decking" (WDFW 2014). WDFW's hydraulic code also allows for the possibility of no grating on public recreational pier, dock, ramp, and float designs (Washington Administrative Code [WAC] 220-660-140).

However, Anchor QEA, LLC's analysis assumes a more conservative 22,222 square feet of overwater cover and shading would result from the project, which does not account for any light penetration through grating. This assumption is based on the minimal amount of light penetration cited in the *Final Programmatic Environmental Impact Statement* (WDFW 2014) and agency guidance for similar projects where grating qualifies as an overwater structure with associated shading impacts.

As stated in the Port's Joint Aquatic Resources Permit Application (JARPA), the proposed project consists of conducting work below the high tide line for the purpose of replacing the existing fixed breakwater to provide wave protection and transient moorage for the Port of Poulsbo Marina. The existing fixed breakwater, including the north log boom off of the south breakwater, will be removed and replaced by a floating breakwater which will connect to the AA-dock. A portion of the south log boom off of the west breakwater will be removed for the AA-connection and small vessel access. The proposed improvements are needed to replace deteriorated existing infrastructure and improve recreational opportunities throughout the existing marina.

City of Poulsbo Permit Requirements

To determine whether or not the Port's proposed project meets the City's regulatory requirements, Anchor QEA reviewed the Port's application materials for consistency with the City's Project Permit Application Procedures (PMC Title 19), Shoreline Master Program (PMC 16.08), Critical Areas Ordinance (PMC 16.20), Floodplain Management Code (PMC 15.24), WAC 173-17, and Revised Code of Washington [RCW] 90.58.

The following application materials, provided by the Port, were reviewed for consistency with City regulations:

- JARPA
- Shoreline Permit Application Form
- Shoreline Conditional Use Permit Analysis Memorandum
- Critical Areas Report
- Mitigation Plan
- Biological Evaluation
- Habitat Survey Results Report
- Marina Expansion Demand Memorandum
- FLUPSY Memorandum
- Overall Marina Demand Memorandum
- Water Quality Plan Memorandum
- Sediment Chemistry Memorandum
- Potable Water and Fire Suppression Memorandum
- Sign, Lighting, and Public Access PMC Memorandum
- Parking Demand Analysis Memorandum
- Landward Construction Impacts Memorandum
- Response to Tribal Comments Memorandum
- Revision Submittal Form
- Coastal Engineering Review Memorandum
- State Environmental Policy Act Checklist

The author of the submitted Mitigation Plan and Biological Evaluation has withdrawn themselves as the qualified biologist for the project. Per PMC 16.20, a biologist meeting specific qualifications must prepare these documents. The City may request that the Port resubmit these documents under the supervision of a biologist who meets these requirements. The evaluation presented in this memorandum assumes no substantive changes will be made to the Mitigation Plan or Biological Evaluation, but the analysis will need to be revisited based on any resubmitted Mitigation Plan and Biological Evaluation.

Project Permit Application Procedures

The Port has submitted permit application materials for a Type III Shoreline Substantial Development Permit for the marina expansion (PMC 16.08.180 and 16.08.400), a Type III Permit for Shoreline Conditional Use for the breakwater replacement, a Type III Shoreline Conditional Use for the FLUPSY (PMC 16.08.180[B][1], 16.08.430, and 16.08.490), and a Type I Permit for the Floodplain Development Permit. Shoreline permit application materials must include all of the information specified in WAC 173-127-130 and 173-27-180. As specified in PMC Table 19.20.020, these are the appropriate

permit processes for these developments, and the City has determined that the application is technically complete.

Shoreline substantial development permits and shoreline conditional use permits may only be granted if the review criteria of PMC 16.09.110 and 16.09.140 are met. This includes following the policies and procedures of the Shoreline Management Act, the provisions of WAC 173-27, and the City's Shoreline Master Program (PMC 16.08). Prior to permit issuance, the Port must also demonstrate that the proposed use will not interfere with public use of public shorelines, is compatible with other authorized uses within the area and with uses planned for the area under the city's Comprehensive Plan and Shoreline Master Program, and will cause no significant adverse effects to the shoreline environment. Based on Anchor QEA's review, the application materials provided by the Port generally meet these criteria. This memorandum provides required information from the Port to confirm the proposed project and associated application materials meet the criteria for a Type III consolidated review process.

Shoreline Master Program

Liberty Bay is within the City's shoreline jurisdiction, and there is an Aquatic environment designation for the project area (PMC 16.08.050). The in-water work requirements in PMC 16.08.150 are demonstrated in the Port's Critical Areas Report, Mitigation Plan, Biological Evaluation, Water Quality Plan Memorandum, and Sediment Chemistry Memorandum.

PMC 16.08.160(D)(1) includes specific requirements for on-site sewage systems. The proposed project includes a new floating restroom; however, information related to wastewater conveyance has not been provided with the application materials.

Parking requirements listed in PMC 16.08.200(E) will be met because the Port will meet the parking demands by designating 17 current paid public stalls in the Jensen Way lot for marina use only, as noted in the Parking Demand Analysis Memorandum.

PMC 16.08.230(H) restricts the maximum height to 15 feet for floating structures and 20 feet above the ordinary high water (OHW) elevation for non-floating structures. As shown in the updated plan set, no floating structure would exceed 15 feet and no non-floating structure (i.e., pile) would exceed 20 feet above the OHW elevation. Therefore, the requirements of PMC 16.08.230(H) have been met.

PMC 16.08.270(A) specifies shoreline requirements for marina expansion projects. These requirements include not interfering with public use or enjoyment of the water, not creating a navigation hazard, and restricting related non-water-oriented uses and structures outside of shoreline jurisdiction. As evidenced by the Port's submittals, these requirements would be met by the project. Proposed port developments or expansions must be consistent with a comprehensive plan for port improvements that has been adopted per RCW 53.20.010 and 53.20.020, and they must be

consistent with the City's Comprehensive Plan. Replacement of the breakwater is specifically discussed in the Port's Comprehensive Plan. The City's Comprehensive Plan Policy ED-5.4 states, "Continue working with the Port of Poulsbo to provide and promote Poulsbo as a destination for the boating community, and to assist the Port where feasible, to improve their facilities including additional parking for port use." The proposed project meets the requirements of PMC 16.08.270(A).

PMC 16.08.230(B), (C), and (D) specify requirements about locating boat slips in suitable areas, evaluating compatibility with surrounding conditions and uses, performing a demand analysis consistent with the Port's comprehensive plan, and providing public pedestrian access. The Port's submittal documents, including the Critical Areas Report; Mitigation Plan; Marina Expansion Demand Memorandum; and Sign, Lighting, and Public Access PMC Memorandum show consistency with PMC 16.08.230(B), (C), and (D).

PMC 16.08.430 states that breakwaters are permitted at port facilities if they are essential for safe operation of the facility, do not result in adverse impacts to the shoreline and aquatic environments, are designed by a qualified engineer, and use floating or open-pile designs. The Port's submittal materials show that the proposed project would be consistent with most of PMC 16.08.430. However, Anchor QEA has provided comments in another memorandum regarding safety elements of the project design. The Port's responses to those comments are needed before determining if project elements will provide for safe operation of the facility.

The Port's updated plan set and Sign, Lighting, and Public Access PMC Memorandum show the project would be consistent with the signage and lighting requirements of PMC 16.08.340 and 16.08.350.

As required by PMC 16.08.120, 16.08.380, and 16.08.490(G), the project must ensure no net loss of shoreline ecological function and provide mitigation according to the mitigation sequence established in WAC 173-26-201(2)(e) and PMC 16.08.140. The Port's Mitigation Plan meets the necessary mitigation sequencing requirements. In addition, the Port's Critical Areas Report, Biological Evaluation, and Mitigation Plan provide all of the necessary information required by PMC 16.08.140 and WAC 173-26-201(2)(e) and 197-11-660.

As discussed in the Project Understanding section of this memorandum, the Port proposes to mitigate for unavoidable environmental impacts by removing piles, floats, walls, log booms, and submerged rock and debris. Impacts and removal actions are provided in Table 1.

Table 1
Breakwater Rehabilitation Project Impacts and Removal Actions Analysis

New Project Features	Area (ft²)	Piles	Shading (ft²) – Anchor QEA Determined¹	Shading (ft²) – Port Provided²	Substrate Impacts (ft²)
Steel plumb piles – 20-inch diameter (breakwater)	52	24	-	-	52
Steel batter piles – 20-inch diameter (breakwater)	408	24	356	356	52
Steel plumb piles – 20-inch diameter	7	3	-	-	7
Steel batter piles – 20-inch diameter	51	3	44	44	7
Steel plumb piles – 20-inch diameter (breakwater access float)	15	7	-	-	15
Steel plumb piles – 20-inch diameter (50-foot finger piers)	24	11	-	-	24
Breakwater floats	13,225	-	13,225	13,225	-
Breakwater access float	1,890	-	1,890	1,323	-
50-foot finger floats	2,860	-	2,860	2,200	-
30-foot finger floats	1,166	-	1,166	862	-
Breakwater extension	1,738	-	1,738	1,738	-
FLUPSY	450	-	450	450	-
Restroom	493	-	493	493	-
TOTAL IMPACT	22,379	72	22,222	20,691	157

Removed Project Features	Area (ft ²)	Piles	Shading (ft ²) – Anchor QEA Determined ¹	Shading (ft ²) – Port Provided ²	Substrate Impacts (ft ²)
Existing Breakwater Wall					
Creosote-treated plumb piles – 12-inch diameter	579	737	-	-	579
Creosote-treated whaler	980	-	980	980	-
Creosote-treated batter piles – 12-inch diameter	642	107	558	558	84
Steel batter piles – 12-inch diameter	145	17	131	131	13
Steel batter piles – 16-inch diameter	91	8	79	79	11
Steel plumb piles – 16-inch diameter	11	8	-	-	11
Crow's nest extension platform	144	-	144	144	-
Rock and debris mound supporting wall	28,248	-	-	-	28,248
North Log Boom and Floats					
Creosote-treated log boom	2,087	-	2,087	2,087	-
Creosote-treated dolphins	476	42	417	417	59
Concrete and timber floats	2,724	-	2,724	2,724	-
Sedimentation and creosote-treated debris at base of log boom	16,328	-	-	-	16,328
South Log Boom					
Creosote-treated log boom	760	-	760	760	-
Creosote-treated dolphins	136	12	119	119	17
Sedimentation and creosote-treated debris at base of log boom	5,962	-	-	-	5,962
Sunken Vessels and Debris					
Sunken vessel and concrete debris	640	-	-	-	640
TOTAL REMOVAL	59,952	931	8,000	8,000	51,952

Mitigation Breakdown	
Change in Overwater Cover	+ 14,222
Change in Submerged Debris	-51,795
Change in Creosote-Treated Pile	-898
Change in Overall Pile	-859

Notes:

Data in this table are derived from the Port's submitted Mitigation Plan.

1. Overwater shading area used for the analysis in this memorandum does not include minimization from grating.

2. Overwater shading area provided by the Port includes minimization from grating.

ft²: square feet

In all the project would impact 22,379 square feet of aquatic habitat and remove 59,952 square feet of materials from Liberty Bay. The Port's Mitigation Plan states the project would result in an increase in 20,691 square feet of overwater cover, while removing 8,000 square feet of overwater cover. As described previously, the analysis in this memorandum assumes that grating of overwater structures would not reduce the impacts of shading associated with those structures. Therefore, the project would result in a net increase of 14,281 square feet of shading and a 1:2.8 mitigation-to-impact ratio with respect to shading. To mitigate for these impacts, the Port proposes to remove 51,178 square feet of submerged rock and debris, including a sunken vessel, in the vicinity of the project, resulting in a 1:331 mitigation ratio for substrate impacts. In addition, the project would result in a net removal of 859 piles, including the removal of 898 creosote-treated timber piles. This analysis concludes the large quantity of debris and pile removal would adequately compensate for the environmental impacts of the project and result in no net ecological loss of aquatic habitat function in Liberty Bay. Note that other state and federal agencies may provide different conclusions based on their guiding regulations.

The Port's Mitigation Plan applies a mitigation needs model developed for use with Regional General Permit (RGP) 6 permitting and Endangered Species Act consultation (National Marine Fisheries Service [NMFS] Reference Number WCR-2016-4361 and U.S. Fish and Wildlife Service [USFWS] Reference Number 01EWF00-2016-F-0565). While this model is not applicable to the Port's proposed project because the project does not fit the criteria for RGP 6, it was used as a proxy to provide a quantitative analysis for mitigation adequacy. Anchor QEA recommends use of the Puget Sound Nearshore Habitat Conservation Calculator, recently developed by NMFS and USFWS for nearshore projects, for use on similar future projects. Use of this calculator is recommended.

Per PMC 16.08.120, proposals for expanded shoreline development and uses shall be evaluated for cumulative impacts. An analysis of cumulative impacts was not provided with the application materials.

Critical Areas Ordinance

The project is located in a Fish and Wildlife Habitat Conservation Area and Frequently Flooded Area. The project is located in Liberty Bay, a Type S water that provides valuable habitat for federal and state listed species and is therefore a Fish and Wildlife Habitat Conservation Area (PMC 16.20.310). The project is located in aquatic habitat, and no work will occur in adjacent buffers. Liberty Bay is also a Federal Emergency Management Agency Zone AE Special Flood Hazard Zone, which is subject to at least a 1% or greater chance of flooding in any given year and is therefore a Frequently Flooded Area (PMC 16.20.155). PMC 16.20.605 adopts PMC 15.24 as the City's floodplain management regulations, as discussed in the following section. No other critical areas are present in the project area. Wetlands and associated buffers are located along the shoreline in the vicinity but will be avoided by project actions.

Fish and Wildlife Habitat Conservation Areas in Type S waters are regulated through the City's Shoreline Master Program (PMC 16.20.310 [B]), and Frequently Flooded Areas within shoreline jurisdiction are regulated by floodway and floodplain regulations in the City's Shoreline Master Program (PMC 16.20.605), as discussed in the Shoreline Master Program section of this memorandum.

A wetland assessment report is required for the project because wetlands or buffers are present within 300 feet (PMC 16.20.220). The Port submitted a Critical Areas Report and a Mitigation Plan, which collectively meet the requirements of a wetland assessment report (16.20.725).

A habitat assessment report and habitat management plan are required for the project because impacts are proposed within a Fish and Wildlife Habitat Conservation Area (PMC 16.20.755). The Port submitted a Critical Areas Report, Mitigation Plan, and updated plan set, which meet the requirements of a habitat assessment report and habitat management plan (PMC 16.20.750 and 16.20.755).

The Port has proposed to mitigate for impacts resulting from the project by removing piles, breakwater floats, walls, log booms, and submerged rock and debris from Liberty Bay. As discussed in the Shoreline Master Program section of this memorandum, the analysis presented in this memorandum concludes that the proposed mitigation would result in no net ecological loss of function and is compliant with the PMC.

Floodplain Management Code

The project is located in an area subject to at least a 1% or greater chance of flooding in any given year, which designates it as a flood hazard area, or Frequently Flooded Area. All project elements would be located waterward of the OHW mark.

Applications for a building permit in an area of flood hazard provide specific information related to floodproofing and alterations to the affected watercourse. Floodproofing information needed for permit issuance is provided in PMC 15.24.240.

Port of Poulsbo Request for Additional Information

To confirm that the Port's proposal meets the criteria for a Type III consolidated review process, the following information is required:

- Information about wastewater conveyance from the proposed restroom, per PMC 16.08.160(D)(1)
- An evaluation of cumulative impacts, per PMC 16.08.120
- Information about floodproofing and watercourse alteration, per PMC 15.24.240
- The Port's responses to comments provided in the Engineering Peer Review Memorandum to demonstrate safe facility operation, per PMC 16.08.430

- Evaluation of mitigation adequacy using the Puget Sound Nearshore Habitat Conservation Calculator

Reference

WDFW (Washington Department of Fish and Wildlife), 2014. *Final Programmatic Environmental Impact Statement*. Hydraulic Code Rule Changes, Proposed Title 220-660, Washington Administrative Code. October 27, 2014.