



King County

Department of Local Services-Permitting
919 SW Grady Way, Suite 300
Renton, WA 98057

Shoreline Substantial Development Permit Report and Decision

Date of Transmittal: January 10, 2023

SUBJECT:

SPARO Kelp and Shellfish Farm

File No:

SHOR22-0015

Date of Application:

June 2, 2022

Applicant:

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Project Location:

It is 300 feet offshore of the mean low tide in the Puget Sound at the SW corner of Vashon Island, WA in Colvos Passage. The NW corner will be at approximately: 47.337833N, -122.526706W, Section 2, Township 21N, Range 02E. The site will be entirely in open water between depth of 30 feet and 80 feet and will not access the shoreline or tidal lands.

Project Proposal:

This proposed project is an integrated and regenerative kelp and shellfish farm which will grow sugar kelp, clams, mussels, oysters, and possible scallops at one location. All these species are either native or naturalized to the proposed area.

Request:

Shoreline Substantial Development Permit (SSDP)

Water Body:

Puget Sound

**Shoreline of Statewide
Significance:**

Yes, RCW 90.58.030: [RCW 90.58.030: Definitions and concepts. \(wa.gov\)](#)

**Shoreline
Environment:**

Aquatic

BACKGROUND:

Prior to the issuance of this Shoreline Substantial Development Permit (SSDP) report and decision, the complete written record contained in the subject file was reviewed. The record includes the applicant's submittal, notification forms, pertinent information included by Department of Local Services-Permitting (Permitting) staff and all correspondence and comments in response to the proposal.

FINDINGS:

1. The criteria for authorizing shoreline substantial development permits, as set forth in King County Code (KCC) 21A.25 are incorporated into the findings by this reference. The SSDP is being sought to support a floating kelp aquaculture facility. The applicant proposes aquaculture of seaweed native to Puget Sound utilizing a system of anchors, buoys, and suspended lines. See

- Exhibit 2** for a copy of the proposed site plan. Aquaculture is an allowed shoreline use in Shoreline Environment Designations (SEDs) when in compliance with the applicable development standards in King County's Shoreline Master Program (KCSMP), and KCC 21A.25.
2. The purpose of the SSDP request is to obtain consistency with the Shoreline Management Act (SMA) of 1971 - Revised Code of Washington (RCW) 90.58 and the KCSMP, including relevant regulations.
 3. The SSDP application was received on June 2, 2022 (**Exhibit 3**). The application was automatically deemed complete by the end of 28th day on June 30, 2022, pursuant to KCC 20.20.050. The Notice of Application (**Exhibit 4**) was issued on August 11, 2022, by 1) mailed notice to property owners in a proximity of the subject property (see **Exhibit 5** for mailing labels); 2) laminated notices posted on different locations on the island, including but not limited to, Vashon Market VGA, Minglement, Granny's Attic, Café Luna, and Vashon Chamber of Commerce; 3) publication in the Seattle Times and Vashon/Maury Island Beachcomber (see **Exhibit 6** for affidavits of publication); 4) posted notice with associated docs on Permitting public notice webpage, <https://kingcounty.gov/depts/local-services/permits/public-notices.aspx>; and 5) emailed notice to the public agencies and tribes (**Exhibit 7**) in accordance with KCC 20.20.060.
 4. The public comment period was from August 11 to September 13, 2022 (33 days). The Department of Local Services received extensive comments from the public (**Exhibit 8**). All public comments received were shared with the applicant and the County review staff to ensure the impacts of the proposed development were thoroughly evaluated within the context of existing regulations and standards. The applicant provided written responses to the public comments (**Exhibit 9**).
 5. Permitting as the lead agency under the State Environmental Policy Act (SEPA), issued a Mitigated Determination of Non-Significant (MDNS) for the proposed development on January 10, 2023 (**Exhibit 10**) utilizing the Optional SEPA DNS/MDNS Process pursuant to Washington Administrative Code (WAC) 197-11-355. This determination was based on the review of the environmental checklist (**Exhibit 11**) and other pertinent documents, resulting in the conclusion that the proposal does not pose a probable significant adverse impact to the environment, provided the mitigation measures are applied as conditions of permit issuance. The responsible official also finds this information reasonably sufficient to evaluate the environmental impact of this proposal. These mitigation measures are consistent with policies, plans, rules, or regulations designated by KCC 20.44.080 as a basis for the exercise of substantive authority and in effect when this threshold determination is issued. Therefore, an environmental impact statement (EIS) is not required prior to proceeding with the permit review process.
 6. The proposed farm is located in an area (Colvos Passage) where marine mammals are present potentially year-round, although it is not known as a particularly high use area as compared to other sites in Puget Sound. Marine mammals, including Southern resident killer whale (SRKW) and humpback whales could also travel through Colvos Passage. The project has evaluated the potential for farm activities to overlap with marine mammal use of the area. There are no documented seal or sea lion haul out areas near the proposed project location and the project does not include structures that are likely to attract seals or sea lions or provide opportunities to haul out. The farm area is approximately 300' from the shoreline and thus would not disrupt

- nearshore travel or use of the beach by marine mammals. The project area itself represents less than 0.1% of Colvos Passage and even a smaller percentage when including areas to the South of Vashon Island (between the Tahlequah Ferry Terminal and Point Defiance, the Tacoma Narrows, Gig Harbor, and Commencement Bay). Therefore, travel around the site is unrestricted. Farm activities as planting, inspection, maintenance, harvesting will overlap with marine mammal use of the area however farm activities will be very low impact involving one small boat (less than 20') with a small 4 stroke (quiet, clean) outboard motor. There will be no other machinery used as the planting, inspection, and harvesting process is done manually. 95% of the time farm work will be done by 1 employee. During planting and harvesting there will be up to 3 employees. These conclusions are supported by the conclusions in the Endangered Species Act Consultation Letter of Concurrence (LOC) evaluating effects to listed species including salmon and marine mammals. National Marine Fisheries Service (NMFS) concluded that effects to behavior, movement, prey resources, risk of entanglement are "discountable, insignificant, or beneficial" and is not likely to adversely affect listed species and designated critical habitat (**Exhibit 12**). Minimization measures are proposed and presented in the document entitled "Best Management Practices, Avoidance and Minimization Measures" (**Exhibit 13**) to address potential impact to marine mammals. U.S. Fish and Wildlife Service (USFWS) issued in their letter of concurrence for the proposed project that effects to marbled murrelet "will not be measurable (insignificant) and will not significantly disrupt normal behaviors" (**Exhibit 14**). The likelihood of marbled murrelets occurring in Central Puget Sound is generally low (refer to Speich and Wahl 1995). Based on the conclusion from USFWS and the low likelihood of occurrence, a marbled murrelet survey prior to in-water work is not considered to be necessary.
7. An Eelgrass and Macroalgae Survey report was prepared (**Exhibit 15**) indicating that no eelgrass was found nor was it expected considering the absence of any sandy/silty substrate. At depths less than -40 ft MLLW there was found to be areas of macroalgal cover of sugar kelp (*Saccharina latissima*) and various anchored red macroalgae (*Cryptopleura reprechiana*, *Sarcodiotheca gaudichaudii*, *Ulva* and *Ulvaria spp.*, and *Delesseria decipiens*). This coverage decreased with increasing depth; at depths of -70 ft MLLW and greater, little to no macroalgae was present. As such, depending on the final siting of the farm, it has the potential to impact existing macroalgae through disturbance from anchor placement and shade during growth of the kelp. Impacts related to anchor placement would occur over a small area up to 20 square feet and would largely be temporary, as macroalgae would be expected to recolonize suitable areas affected by fluke anchor placement and concrete anchors could themselves become attachment substrate. Kelp farms, right before harvest when the biomass is at its maximum, can cause reduction in light by 40% at 5 m below the surface (Visch et. al. 2020), which could impact existing macroalgae. Additionally, installation of anchors could impact existing macroalgae during construction. To address this concern, the siting of the aquaculture lines within the farm area has specifically taken existing macroalgae distribution into consideration and been adjusted so that the lines are located over areas with minimal to no existing macroalgae. Similarly, prior to anchor installation a ROV will be utilized to assess the area and final positioning of the anchors will be done to avoid existing macroalgae to the extent practicable. A map of existing kelp relative to the proposed farm location has been provided entitled SPARO Farm Location and Substrate Details (**Exhibit 16**). The farm will utilize 6 anchor locations to secure the farm in place. Two of the six locations will be in approximately 35' of water where macro algae exist however to a lesser extent than in shallower water. Each anchoring system will modify approximately 20 square feet of substrate which, considering the size of Colvos Passage, is insignificant. The 4 other anchors will be in 45'-75' of water where no macro algae are present due to the lack of sunlight. In addition, a quantification of no-net-loss will be required in post-

- project reporting as a mitigation measure due to the potential effects on macroalgae and benthic community.
8. Available research suggests that the proposed project would have limited impact to the benthic community. Study of the effects of a seaweed farm in Sweden found a positive effect on benthic infauna, indicating that the farm may provide habitat to mobile species (Visch et al. 2020). Additionally, benthic oxygen flux, dissolved nutrient concentrations, and benthic mobile fauna were unchanged between farm and control sites. Thus, the underlying benthic processes were minimally affected. This is consistent with data from a seaweed farm in Ireland, that found little impact on the subtidal benthic communities from kelp cultivation (Walls et al. 2017). The primary process through which kelp aquaculture has the potential to influence the benthos is the addition of particulate organic matter (POM) (Campbell et al. 2019). While there may be some variability in the amount of material coming from the farm and reaching the local benthos (i.e., more or less detaching in any given year), given the local currents, no accumulation of materials is expected. Furthermore, the addition of this material (e.g., POM) to the larger surrounding area of Colvos Passage would be minimal given that the detrital food web is one of the key drivers of trophic structure in Puget Sound. This input of detritus would be consistent with inputs historically derived from native kelp beds which are in decline in Puget Sound. Impacts to the benthic community from the proposed project would be highly localized and, based on best available science, are expected to be limited. See **Exhibit 13** for the proposed minimization measures to offsite the potential impact in this regard.
 9. The Impact Analysis prepared by Confluence Environmental Company (**Exhibit 17**) indicates the existing substrate at the proposed farm site is small to medium size (golf ball to softball) cobble with occasional large (4-5') rocks. If that is accurate, relative to the size of the farm, the proposed substrate modification from anchor placement is small and limited to the areas of anchoring. Once the anchors are installed, operational impacts to the substrate are expected to be negligible. To validate that, the applicant provided the ROV survey which shows the substrate is cobble with large rocks interspersed (**Exhibit 16**).
 10. KCC requires protection of all salmonids. March/April is prime outmigration timing of juvenile pink and chum salmon. Kelp farms may attract seals and sea lions and piscivorous birds (e.g., cormorants) that come to eat the fish; concerns were raised that this could increase predation on juvenile salmonids. While it is possible that seals and sea lion and piscivorous birds will utilize the site to forage and that increased prey resources to these predators may be supported by the kelp farm, that does not translate into increased predation on juvenile salmonids. First, juvenile salmonids are migratory and not structure oriented. So, while juvenile salmonids may utilize the kelp farm for foraging and benefit from additional prey resources, they are not expected to concentrate in the site or reside at the site for extended periods of time. Secondly, juvenile salmonids, while at the site, will benefit from the structure and refugia from predation provided by the kelp farm and likely experience decreased predation as compared to when they are migrating through open waters away from the site. The value of eelgrass and macroalgae for prey resources and refugia from predation for juvenile salmonids is precisely one of the key reasons why these habitats are protected. One public commenter suggested that a kelp farm would increase salmonoid predation. Under the reasoning, kelp and eelgrass restoration projects or any projects which might benefit juvenile salmonids could lead to increased predation which is a contradiction. Please see copies of the U.S. Army Corps of Engineers (USACE) Permit (**Exhibit 18**) and the Endangered Species Act (ESA) Letters of Concurrence (**Exhibit 12 and 14**).

11. The two main streams on Vashon Island are Judd Creek (middle of island enters Puget Sound on the east side of the island) and Shinglemill Creek (north portion of island enters Puget Sound on west side of the island). Chum, coho, and chinook salmon (Washington Department of Fish and Wildlife (WDFW) Spawning Ground Survey Database) along with steelhead trout are known to spawn in this stream system. Coastal cutthroat trout juveniles have also been observed in the lower reaches. Juvenile and adult coho, chinook, and coastal cutthroat trout have been observed at numerous points along the marine shorelines of the island (Kerwin and Nelson 2000 (Eds.)). Even though there may be use of streams on Vashon Island by chum, coho, steelhead, chinook and cutthroat, chinook salmon presence is limited to migration and spawning is not documented or likely to occur in Judd Creek (StreamNet Mapper). WDFW SalmonScape data indicates documented presence of coho, steelhead, and cutthroat in Judd Creek (WDFW 2022). Shingle Mill Creek and a variety of smaller streams are documented as having cutthroat trout present. The WDFW Spawning Ground Survey Database includes only one instance of a Chinook salmon observation in Judd Creek made in 1997. Given the current data presented on SalmonScape and StreamNet, as well as stream size and morphology, the streams on Vashon Island are not considered to support spawning of Chinook salmon. Juvenile salmonids may use the nearshore area along Vashon Island during migration from natal streams and rivers. Individuals that may make use of the habitat created by the proposed project are likely to be larger in size (given the depth and offshore location of the project area) and may benefit from the prey resources and refuge provided. Consistent with the concurrence letter from NMFS for the proposed project (**Exhibit 12**), the project may affect, but is not likely to adversely affect Puget Sound Chinook salmon and steelhead, and by extension other salmonids in the project area.

12. The NMFS Letter of Concurrence (**Exhibit 12**) includes analyses of the proposed project related to potential impact to SRKW/Orcas and humpback whales as well as their designated Critical Habitat. The LOC evaluated potential impacts to Orcas and humpback whales from suspended sediment/water quality, modified substrate, prey reduction, gear in aquatic habitat/passage, noise, and disturbance. The LOC evaluated potential impacts to designated critical habitat from water quality, disturbed substrate, prey, safe passage, noise, and long-term effects. NMFS concluded based on their analysis “that all effects on species and designated habitat are discountable, insignificant, or beneficial, NMFS concurs with USACE that the proposed action is not likely to adversely affect the subject listed species and designated critical habitats”. NMFS made the statement that “While the risk of the cultured kelp obstructing or entangling either species of whale as they utilize Colvos Passage is not zero, the history of entanglement with aquaculture equipment in Puget Sound is that none has occurred, indicating risk is very low, their echolocation capabilities suggest that it is unlikely that lines will be an entanglement hazard.” (**Exhibit 12** - page 12). While no additional literature is specifically cited regarding Orca/humpback whale echolocation, the conclusion that it is unlikely that Orca/humpback whale will become entangled is further supported by the lack of entanglement observations with aquaculture gear. As part of a synthesis effort by the NMFS and Puget Sound Restoration Fund to evaluate opportunities and challenges associated with kelp aquaculture in Washington State, the risk of Orca/humpback whale entanglement within kelp aquaculture sites was evaluated. Searches of the scientific literature and outreach to NMFS marine mammal experts failed to identify any known instance of Orca entanglements with aquaculture gear worldwide (Dan Tonnes NMFS, pers comm with applicant. Sept 27, 2022). Similarly, the World Wildlife Fund has been working on this concern and states “There have been no credible documented marine entanglements in 40 years.”

13. The USACE permit (**Exhibit 18**) states “In order to meet the requirements of the Endangered Species Act you may conduct the Authorized activities from July 16 through February 15 in any year this permit is valid. You shall not conduct work authorized by this permit from February 16 through July 15 in any year this permit is valid. If changes to the originally authorized work window are proposed, you must re-coordinate these changes with the Services and receive written concurrence on the changes.” The applicant shall notify Permitting if the project requests a modification to the work window imposed by the USACE.
14. The positive value of increased diversity and abundance as well as other ecosystem services (e.g., enhanced water quality, nutrient cycling, habitat provisioning, food services) provided by the proposed farm is supported in the literature on kelp aquaculture (as reviewed in Theuerkauf et al. 2022). The increased diversity and abundance is primarily achieved via the kelp itself and the three dimensional structure and surface area the kelp provides. Not by the artificial infrastructure, which is minimal for a kelp farm (i.e., anchors, lines, and buoys all surface area for additional natural kelp) versus in salmon farms which include large floating structures and pens. Similarly, the comparison to artificial reefs and their associated permitting is inappropriate. Artificial reefs are most commonly created with rubble and debris (e.g., concrete debris, old tires, sunken vessels, etc.). These reef materials have their own potential challenges, unlike the kelp that provide the three dimensional structure as well as additional ecosystem services for the proposed project. The concept of relying on natural conditions versus artificial infrastructure makes sense when evaluating restoration projects, however, the project is not proposed as an artificial reef or kelp restoration project. It is a kelp aquaculture project, and as such, is an allowed water dependent use under KCC 21A.25.110. The project is consistent with the requirements under the applicable code provisions and policies which are included in this report.
15. Kelp building up on beaches is possible and is part of the detrital food web. To ensure there is no risk that large amounts of kelp will break off from the farm and build up on local shorelines, an “as is” photo survey of adjacent and N/S beaches was provided (**Exhibit 19**). Monthly surveys will be performed and will be available upon request to document lack of accumulation of kelp build up on adjacent shoreline from the project.
16. Farm operations will occur on average 4-6 days per week typically by one farm employee. Visits will last no more than 6 hours and typically less than 3 hours. A small (< 20’ boat with a 30HP motor will be used to access the farm site). The motor will be turned off when possible. During planting (late November) and Harvesting (April) farm operations will increase but never by more than 3 employees using no more than 2 small boats. No work will be done in non-daylight hours. A Farm Operations Narrative was provided (**Exhibit 20**). Please see NMFS letter of concurrence for a determination of “no impact” as a result of this level of marine traffic/noise (**Exhibit 12**).
17. The farm will be seeded using best practices that were established in other US based seaweed farming locations. Specifically, seaweed (sorus) will be collected within 50 nautical kilometers from the farm site. Furthermore, sorus material will be collected from 30-50 individual seaweed plants. This process will greatly reduce the spread of any non-native diseases and will maintain genetic diversity. In addition, the vast majority of the farmed kelp will be harvested in the Spring before sorus/spores occur naturally on the kelp. The applicant will likely not harvest a small portion of the farmed kelp and leave it in place either until the following growing season or indefinitely. The purpose is to monitor how it grows, monitor bio-fouling, observe whether and how it is used by other marine species, etc. It is likely that spores from these plants would be released into the environment and find purchase in adjacent substrate areas. The spread of

diseases or nonnative species is an ongoing concern for the King County and Washington State, but there is nothing intrinsic to this project that will introduce disease or nonnative species given that the aquaculture seed sources will be local and adhere to relevant regulations. In addition, the applicant proposes to add a mitigation measure which is “To avoid the inadvertent spread of non-native or invasive species, SPARO aquatics will monitor for attached non-native and invasive species during project operation. This would include visual monitoring during site visits as well as during harvest. If any substantial numbers of non-native or invasive species are determined to be present, SPARO Aquatics will work with WDFW and other expert agencies to address the issue.”

18. The U.S Coast Guard (USCG) requires lighting to be white, visible for no less than one nautical mile and have a flash timing of FL W 6s (flashing white, six seconds, ten flashes per minute). Please see examples of buoys and lights that have been approved by the USCG for farm use (**Exhibit 21**). The USCG requires a minimum of 8 lighted buoys (1 at each corner, and an additional 2 along the length (north/south perimeter) of the farm. Small buoys (**Exhibit 22**) will be used to suspend the grow lines at the proper depth. A minimal number of buoys will be used and the applicant will balance coloring taking into consideration visual impact and navigational obstructions. In other words, the majority of the buoys on the interior of the farm will be black, grey and/or white which offers reduced visible impact. Orange buoys will be interspersed around the perimeter along with black/grey/white to serve as a deterrent to boaters. While lighting may potentially be visible from the shoreline and adjacent homeowners, the distance to most homes is substantial. The closest shoreline homes on Vashon Island are situated on an extensive bluff. Direct line of site is out over the water and not down to the water surface of the farm area. The proposed USGC lighting has solar panels on the surface which limit the light transmission in an upward direction. While this will likely not eliminate visibility to homeowners along the bluff, it would reduce the amount of light visible. The majority of the homes where light may be visible are situated on the Pierce County side of Colvos Passage and located more than 1.5 miles away. At this distance, these lights are minimally perceptible. Please see **Exhibit 23** for PATON visualization.
19. Macroalgae aggregations act as a region of high drag and have been shown to affect water velocity and attenuate waves (Wood et. al. 2017). Suspended aquaculture reduces water flow as shown by a study of a bay in China where a model predicted a reduction of 54% in current within farms of kelp and scallops on suspended longlines (Wood et. al. 2017). Similar reductions in current (36% to 63%) were measured for a large offshore longline shellfish farm in New Zealand. Authors also recorded wave energy attenuation across the farm (Wood et. al. 2017). Scale appears to be an important consideration for this potential impact—a small farm on its own is unlikely to have a large effect on the marine environment (Wood et. al. 2017). The proposed farm will be oriented parallel to the adjacent shoreline to minimize the drag on the lines and associated infrastructure. This orientation is intended to function with, rather than against, local hydrodynamics and implies that it will result in a minimization of potential impact. While impacts of suspended aquaculture to hydrodynamics have been documented in the literature (e.g., He et al. 2022), the aquaculture in these locations is incredibly dense. Thus, scale, as well as density, play a part in effects to hydrodynamics and both support a lack of effect for the proposed farm. A study conducted evaluating current velocity within and outside longline aquaculture in Willapa Bay showed non-significant differences in velocities and concluded that oyster flip bag plots do not have a significant effect on tidal currents or the sediment transport processes associated with tidal currents (Confluence 2016). Therefore, the proposed farm is unlikely to have an impact on the hydrodynamics and sediment transport within the farm area.

20. The proposed project site is in the Aquatic environment pursuant to the KCSMP. KCC 21A.25 Shoreline Master Program designates this part of the shoreline of Puget Sound as Aquatic, and the adjacent shoreland environment as Conservancy. The purpose of the Aquatic environment designation is to protect, restore and manage the unique characteristics and resources of the areas waterward of the ordinary high-water mark; and the purpose of the Conservancy shoreline is to conserve areas that are a high priority for restoration, including valuable historic properties, or to provide recreational opportunities.
21. Puget Sound is “Shoreline of the State” and subject to the SMA permit requirements. Aquaculture is an allowed shoreline use in all SEDs when in compliance with the applicable development standards in KCSMP and KCC 21A.25. A SSDP is required for the proposed aquaculture operation.
22. For project activities within the Aquatic environment, the review criteria for the adjacent upland areas may apply. Buoys adjacent to the Conservancy shoreline require a Shoreline Conditional Use Permit (SCUP) pursuant to the Shoreline Modification table in KCC 21A.25.160(B). The standards for buoys in KCC 21A.25.180 (I) are described as standards for “Moorage buoys.” The buoys proposed for the aquaculture project are not moorage buoys (not for mooring watercraft) and so staff were uncertain about whether all of these standards should apply to buoys used for non-moorage purposes such as the proposed aquaculture project. After the consultation with the Department of Ecology, it was determined that all the buoy standards and regulations in the KCSMP are geared towards moorage, which are not applicable to this aquaculture project. Therefore, the proposed project does not require a SCUP (**Exhibit 24**).
23. Review of the project application materials indicates that the applicant has demonstrated compliance with the requirements for approval of a SSDP and the project is consistent with the KCSMP, as analyzed below:

Applicable regulations from WAC 173-27-150 are as follows:

WAC 173-27-150 provides the review criteria for substantial development permits and states:

(1) A substantial development permit shall be granted only when the development proposed is consistent with:

(a) The policies and procedures of the act;

COMMENT: Element (1)(a) refers to the “policies and procedures of the act”. The proposed project is consistent with the policies and procedures of the act by satisfying all of the acts requirements, especially those required by the KCSMP which is specifically developed by the local government (King County) and approved by the state to satisfy the requirements of the act. The policies of the SMA are defined in RCW 90.58.020 Legislative findings-State policy enunciated-Use preference. This RCW section enunciates the states policy to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses. The policy is designed to insure the development of these shorelines, while allowing for a limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest. This section goes on to state that the policy contemplates protecting against adverse effects to public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto. The section also provides guidance to local governments in

the development of shoreline master programs to give preference to uses in a sequential order as follows:

- (1) Recognize and protect the statewide interest over local interest;
- (2) Preserve the natural character of the shoreline;
- (3) Result in long term over short term benefit;
- (4) Protect the resources and ecology of the shoreline;
- (5) Increase public access to publicly owned areas of the shorelines;
- (6) Increase recreational opportunities for the public in the shoreline;
- (7) Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

Each of the policy elements detailed above are being met as follows:

A. Provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses.

- The goal of providing management of the shorelines of the state via planning is accomplished through the state approval and local implementation of the Shoreline Master Program, in this case KCSMP adopted 2013 KCC 21A.25. See sections below for further information on how the proposed project meets the requirements of the KCSMP.

B. Ensure the development of these shorelines, while allowing for a limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest.

- The proposed project will have a limited reduction of rights of the public in navigable waters because it is not located in an area of significant navigation and represents a very small portion (<0.1% of Colvos Passage) of the surrounding navigable waterway. The public interest is promoted and enhanced on several fronts by the proposed project. Specifically, there are several ecosystem services provided by the project such as, enhanced water quality, nutrient cycling, habitat provisioning, and food services to name a few. The kelp produced by the proposed project will also provide products and economic value to the public.

C. Protecting against adverse effects to public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto.

- The proposed project does not result in adverse effects to public health and as an aquatic project does not have adverse effects to land and its vegetation and wildlife. For birds, waters of the state and their aquatic life, the project is anticipated to provide neutral to beneficial effects (as detailed in other supporting documents). As stated above the proposed project would have very limited effects to navigation.

D. Guidance to local governments in the development of shoreline master programs to give preference to uses in a sequential order as follows:

- (1) Recognize and protect the statewide interest over local interest;
 - The proposed project is meeting this sequence of use preferences. Statewide interests are being protected over local interests by virtue of providing ecosystem services (e.g., enhanced water quality, nutrient cycling, habitat provisioning, and food services). Many of these services provide value that are of statewide interest.

- (2) Preserve the natural character of the shoreline;

- The natural character of the shoreline will be preserved. The proposed project is located away from the shoreline and is not expected to have more than minor noticeable effects to the natural character of the shoreline.
- (3) Result in long term over short term benefit;
- The project provides both short- and long-term benefits. The benefits do not appreciably change over time. These benefits include the commercial and biological values of the proposed project as described in exhibits.
- (4) Protect the resources and ecology of the shoreline;
- The resources and ecology of the shoreline would be minimally affected and may benefit from the proposed project. Refer to the Biological Evaluation (**Exhibit 25**) and Impact Analysis Report (**Exhibit 17**), and other materials provided for additional details.
- (5) Increase public access to publicly owned areas of the shorelines;
- The proposed project does not change access to publicly owned areas of the shoreline. Further away from the shoreline, there would be limited impacts to public navigation.
- (6) Increase recreational opportunities for the public in the shoreline;
- The proposed project has minor impacts to recreational navigation; however, the project also presents an opportunity for increased recreation and education when members of the public choose to visit the project area, experience and learn about the kelp habitat, kelp aquaculture, and variety of species that will utilize the project area.
- (7) Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.
- The proposed project will adhere to any elements included as part of the approval under the KCSMP in order to address the elements defined in RCW 90.58.100.

(b) The provisions of this regulation; and

COMMENT: Element (1)(b) identifies the requirement to be consistent with the provisions of this regulation. The proposed project is consistent with the provisions of this regulation by applying for and working through the various steps of the approval process and the local, state, and federal level.

(c) The applicable master program adopted or approved for the area. Provided, that where no master program has been approved for an area, the development shall be reviewed for consistency with the provisions of chapter 173-26 WAC, and to the extent feasible, any draft or approved master program which can be reasonably ascertained as representing the policy of the local government.

COMMENT: The proposed project is consistent with the adopted KCSMP as required under WAC 173-27-150 Element (1)(c). See discussion below regarding compliance with the applicable requirements of the KCC 21A.25.

Applicable regulations from the KCC 21A.25 which references and excerpts are relevant to the assessment of the allowance of the proposed project within King County. Subsequent comments

provide support for how the proposed project complies with the excerpted code provisions.

21A.25.080. Sequence of mitigation measures – priority. *A. Mitigation measures shall be applied in the following sequence of steps listed in order or priority, with subsection A.1. of this section being top priority:*

- 1. Avoiding the impact altogether by not taking a certain action or parts of an action;*
- 2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts;*
- 3. Rectifying the impact by repairing, rehabilitating or restoring the affected environment;*
- 4. Reducing or eliminating the impact over time by preservation and maintenance operations;*
- 5. Compensating for the impact by replacing, enhancing or providing substitute resources or environments; and*
- 6. Monitoring the impact and the compensation projects and taking appropriate corrective measures.*

COMMENT: Avoidance and minimization measures are described in the attached Impact Analysis Report (**Exhibit 17**). Impacts are largely avoided and minimized to ensure no net loss of shoreline ecological function.

21A.25.100. Shoreline use.

COMMENT: The proposed project is an allowed use within the Aquatic SED, pursuant to KCC 21A.25.110.

21A.25.110 Aquaculture. *An applicant for an aquaculture facility must use the sequential measures in K.C.C. 21A.25.080. The following standards apply to aquaculture:*

A. Unless the applicant demonstrates that the substrate modification will result in an increase in native habitat diversity, aquaculture that involves little or no substrate modification shall be given preference over aquaculture that involves substantial substrate modification, and the degree of proposed substrate modification shall be limited to the maximum extent practical.

COMMENT: Floating aquaculture substantially limits the required substrate modification, relative to the active culture area. For the proposed 10-acre site, less than 0.1% of the total area would be subject to substrate modification associated with the anchors.

B. The installation of submerged structures, intertidal structures and floating structures shall be limited to the maximum extent practical.

COMMENT: The proposed aquaculture methods maximize the amount of production per acre by allowing for seaweed and shellfish cultivation in the same area. By employing these methods, installation of floating structures is limited to the maximum extent practicable.

C. Aquaculture proposals that involve substantial substrate modification or sedimentation through dredging, trenching, digging, mechanical clam harvesting or other similar mechanisms, shall not be permitted in areas where the proposal would adversely impact critical saltwater habitats.

COMMENT: The proposed project would have limited impact to critical saltwater habitats. Identified macroalgae ranges from 10-60% cover within shallower depths of the proposed site and becomes sparse to non-existent at deeper depths. Anchor placement would be completed so as to minimize impacts to the maximum extent practicable.

D. Aquaculture activities that after implementation of mitigation measures would have a significant adverse impact on natural, dynamic shoreline processes or that would result in a net loss of shoreline ecological functions shall be prohibited.

COMMENT: The proposed project would have limited impacts on natural processes and may even provide a benefit to ecological function. Refer to the Biological Evaluation (**Exhibit 25**) and Impact Analysis Report (**Exhibit 17**) for additional details.

E. Aquaculture should not be located in areas that will result in significant conflicts with navigation or other water-dependent uses.

COMMENT: The location of the proposed project is not a significant navigation area.

F. Aquaculture facilities shall be designed, located and managed to prevent the spread of diseases to native aquatic life or the spread of new nonnative species.

COMMENT: The proposed cultivated species are native or consistently cultured in Puget Sound. No spread of diseases or nonnative species is expected.

G. Aquaculture practices shall be designed to minimize use of artificial chemical substances and shall use chemical compounds that are least persistent and have the least impact on plants and animals. Herbicides and pesticides shall be used only in conformance with state and federal standard and to the minimum extent needed for the health of the aquaculture activity.

COMMENT: No use of artificial chemical substances is proposed for the project.

H. Noncommercial native salmon net pen facilities that involve minimal supplemental feeding and limited use of chemicals or antibiotics as provided in subsection G. of this section may be located in King County [marine] waters if they are consistent with subsections S. and Y. of this section and are:*

- 1. Native salmon net pens operated by tribes with treaty fishing rights;*
- 2. For the limited penned cultivation of wild salmon stocks during a limited portion of their lifecycle to enhance restoration of native stocks; or*
- 3. For rearing to adulthood in order to harvest eggs as part of a captive brood stock recovery program for endangered species.*

COMMENT: Not applicable to this project.

I. If uncertainty exists regarding potential impacts of a proposed aquaculture activity and for all experimental aquaculture activities, unless otherwise provided for, the department may require baseline and periodic operational monitoring by a county-approved consultant, at the applicant's expense, and shall continue until adequate information is available to determine the success of the project and the magnitude of any probable significant adverse environmental

impacts. Permits for such activities shall include specific performance measures and provisions for adjustment or termination of the project at any time if monitoring indicates significant, adverse environmental impacts that cannot be adequately mitigated.

COMMENT: The proposal is not considered as an experimental aquaculture farm. See the letter from Blue Dot Sea Farm as **Exhibit 26**. As stated in the letter the methods being used by Blue Dot have been used in Washington and all over the world for many years. The methods used by Blue Dot are precisely what is being proposed by SPARO aquatics. These same methods are being used for commercial seaweed cultivation by dozens of farms on the East Coast and numerous in Alaska. The County requires the applicant to set the elements of “baseline and periodic operational monitoring” as follows:

1. Catalog and periodic inspection of all farm infrastructure.
 - a. To ensure that all anchors, line, buoys, and cages are in place, secure, and in good condition, monthly inspections will be done. If any insufficiencies are found, repairs will be undertaken as soon as practicable. Inspection should also occur after storm events.
2. Beach inspection/profile.
 - a. Inspection of the natural beach/shoreline directly opposite the farm and 500’ to the north and south will be done monthly and documented.
 - b. Unnatural debris, farm gear or otherwise, will be collected and cataloged.
3. Substrate inspection/profile.
 - a. A sampling plan will be developed to document accumulation or lack of accumulation of farm related natural material, marine species (e.g., macroalgae coverage), detritus, etc. The plan will define sampling locations (test and control locations), sampling frequency, and the data analyses that will be used to determine potential changes attributable to the farm.
 - b. Monitoring of macroalgae extent and quantification of no net loss on an annual basis following WDFW macroalgae survey guidelines to the extent practicable.
 - c. Benthic community monitoring following Puget Sound Estuary Protocols (or similar) before and after construction and operations to determine if the project provides benefits or impacts the benthic community.
4. Marine mammal sightings.
 - a. Farm employees will be on site regularly (4-5 times per week weather permitting). Specific notes/conditions will be tracked including major mammal (whales, seals, sealions, otters) sightings.
5. Marine species entanglement response plan.
 - a. A marine species response plan will be developed and will include tracking observations (item 4) and specific response strategies (e.g., who to call, what to do) in the event of negative interactions with marine mammals.
6. Marine species observations.
 - a. A variety of marine animals have been seen in/around the farm site including various birds, seals, sea lions, jellyfish, herring, sea stars, etc. Farm staff will catalog, observe, and note any changes and/or behaviors that occur due to seasonality, farm operations, or other conditions.

7. Invasive species.

- a. Farm staff will become familiar with any/all known and anticipated invasive species (e.g., tunicates) that may be found in the area. Through normal farm operations and maintenance, including underwater drone and/or scuba observations, changes will be noted and reported.

8. Fish spawning.

- a. The farm location is neither a herring holding nor a known spawning area for herring or other fish. However, if any spawning activity is seen including roe attached to farmed kelp/gear all farm activities will cease until eggs have hatched and the occurrence will be reported.

9. Response plan to public comments/questions.

- a. It is understood that a portion of the public currently has questions/concerns about seaweed farming. A plan will be developed to solicit, understand, and respond to public inquiries.

10. Reporting.

- a. An annual report will be submitted providing the details and results associated with the measures above. The report will be submitted to King County and applicable agencies.

J. Aquaculture developments approved on an experimental basis shall not exceed five acres in area, except land-based projects and anchorage for floating systems, and three years in duration. The department may issue a new permit to continue an experimental project as many times as it determines is necessary and appropriate.

COMMENT: Not applicable to this project. As stated above, the proposal is not considered as an experimental aquaculture farm.

K. The department may require aquaculture operations to carry liability insurance in an amount commensurate with the risk of injury or damage to any person or property as a result of the project. Insurance requirements shall not be required to duplicate requirements of other agencies.

COMMENT: Not applicable to this project.

L. If aquaculture activities are authorized to use public facilities, such as boat launches or docks, King County may require the applicant to pay a portion of the cost of maintenance and any required improvements commensurate with the use of those facilities.

COMMENT: Not applicable to this project.

M. New aquatic species that are not previously cultivated in Washington state shall not be introduced into King County saltwaters or freshwaters without prior written approval of the Director of the Washington state Department of Fish and Wildlife and the Director of the Washington Department of Health. This prohibition does not apply to: Pacific, Olympia, Kumomoto, Belon or Virginia oysters; Manila, Butter, or Littleneck clams; or Geoduck clams.

COMMENT: Not applicable to this project.

N. Unless otherwise provided in the shoreline permit issued by the department, repeated introduction of an approved organism after harvest in the same location shall require approval by the county only at the time the initial aquaculture use permit is issued. Introduction, for purposes of this section, shall mean the placing of any aquatic organism in any area within the waters of King County regardless of whether it is a native or resident organism within the county and regardless of whether it is being transferred from within or without the waters of King County.

COMMENT: Not applicable to this project.

O. For aquaculture projects, over-water structures shall be allowed only if necessary for the immediate and regular operation of the facility. Over-water structures shall be limited to the storage of necessary tools and apparatus in containers of not more than three feet in height, as measured from the surface of the raft or dock.

COMMENT: Not applicable to this project.

P. Except for the sorting or culling of the cultured organism after harvest and the washing or removal of surface materials or organisms before or after harvest, no processing of any aquaculture product shall occur in or over the water unless specifically approved by permit. All other processing and processing facilities shall be located landward of the ordinary high water mark.

COMMENT: Not applicable to this project.

Q. Aquaculture wastes shall be disposed of in a manner that will ensure strict compliance with all applicable governmental waste disposal standards, including, but not limited to, the Federal Clean Water Act, Section 401, and chapter 90.48 RCW, Water Pollution Control. No garbage, wastes or debris shall be allowed to accumulate at the site of any aquaculture operation.

COMMENT: Not applicable to this project.

R. Unless approved in writing by the National Marine Fisheries Service or the U.S. Fish and Wildlife Service, predator control shall not involve the killing or harassment of birds or mammals. Approved controls include, but are not limited to, double netting for seals, overhead netting for birds and three-foot high fencing or netting for otters. The use of other nonlethal, nonabusive predator control measures shall be contingent upon receipt of written approval from the National Marine Fisheries Service or the U.S. Fish and Wildlife Service, as required.

COMMENT: Not applicable to this project.

S. Finfish net pens and rafts shall meet the following criteria in addition to the other applicable regulations of this section...

COMMENT: Not applicable to this project.

T. All floating and submerged aquaculture structures and facilities in navigable waters shall be

marked in accordance with United States Coast Guard requirements.

COMMENT: The floating aquaculture arrays will be marked around the edge of the area according to USCG requirements.

U. The rights of treaty tribes to aquatic resources within their usual and accustomed areas shall be addressed through direct coordination between the applicant and the affected tribes through the permit review process.

COMMENT: The proposed farm is in the Usual and Accustomed waters of the Puyallup Tribe. The applicant has communicated and coordinated with the tribe to ensure that there are not concerns and in fact support exists for the farm. In addition, the tribes were notified on August 11, 2022 when the Notice of Application was issued (**Exhibit 7**). No concerns were received.

V. Aquaculture structures and equipment shall be of sound construction and shall be so maintained. Abandoned or unsafe structures and equipment shall be removed or repaired promptly by the owner. Where any structure might constitute a potential hazard to the public in the future, the department shall require the posting of a bond commensurate with the cost of removal or repair. The department may abate an abandoned or unsafe structure in accordance with K.C.C. Title 23.

COMMENT: Not applicable to this project.

W. Aquaculture shall not be approved where it will adversely impact eelgrass and macroalgae.

COMMENT: The proposed project would have limited impact to critical saltwater habitats. Identified macroalgae ranges from 10-60% in cover at shallower depths of the proposed site and becomes sparse to non-existent at deeper depths. Anchor placement would be completed so as to minimize impacts to the maximum extent practicable.

X. Commercial salmon net pens and nonnative marine finfish aquaculture are prohibited.

COMMENT: Not applicable to this project.

Y. Finfish net pens shall be consistent with the applicable aquaculture regulations in this section and shall meet the following criteria and requirements...

COMMENT: Not applicable to this project.

Z. Geoduck aquaculture shall be consistent with WAC 173-26-241(3)(b).

COMMENT: Not applicable to this project.

21A.25.180 Dock, pier, moorage pile or buoy, float or launching facility.

COMMENT: The standards for buoys in KCC 21A.25.180 are described as standards for "Moorage buoys." The buoys proposed for the aquaculture project are not moorage buoys (not for mooring watercraft). After the consultation with the Department of Ecology, it was determined that all the buoy standards and regulations in the KCSMP are geared towards

moorage, which are not applicable to this aquaculture project. Therefore, the proposed project does not require a SCUP (**Exhibit 24**).

21A.25.190 Excavation, dredging, dredge material disposal and filling.

COMMENT: Fluke and concrete anchors will be placed to secure the aquaculture array. Consistent with paragraph B.1 in KCC 21A.25.190, such placement is allowed “when necessary to support a water-dependent use”. As defined in KCC 21A.06.1385 and stated in WAC 173-26-241(3)(b), aquaculture is a water-dependent use and anchors are necessary for the proposed type of aquaculture. Therefore, the proposed anchors are allowable.

Applicable policies from the County’s Shoreline Master Program found in Chapter 6 of the Comprehensive Plan include:

S-601 King County shall ensure that new uses, development and redevelopment within the shoreline jurisdiction do not cause a net loss of shoreline ecological processes and functions.

COMMENT: This project will not cause a net loss with the proposed mitigation measures and approval conditions listed below. Please refer to the Biological Evaluation (**Exhibit 25**) and Impact Analysis Report (**Exhibit 17**).

CONCLUSIONS:

1. The proposed aquacultural project is permitted in the Aquatic environment.
2. The application and supporting documentation for the SSDP provide a sufficient level of information from which to establish conditions to ensure that the proposed project will be compatible with the surrounding environment and meet the goals and regulations of the SMA and KCSMP.
3. The applicant has provided sufficient information to support the proposed project design as the most favorable for limiting adverse impacts to the environment.
4. Provided the conditions listed below are implemented, granting of this permit will comply with the SMA and the KCSMP.

ACTION:

APPROVE Shoreline Substantial Development Permit No. SHOR22-0015 subject to the following conditions:

1. Nothing in this permit shall be construed as excusing the applicant from compliance with any federal, state, or local statutes, ordinances, or regulations applicable to this project other than the permit requirements of the Shoreline Management Act of 1971.
2. This permit may be rescinded pursuant to the Shoreline Management Act of 1971 in the event the permittee fails to comply with any conditions thereof.
3. Construction pursuant to this permit may not begin or be authorized until twenty-one (21) days from the date of filing the final order of King County with the Department of Ecology or the Attorney General; or

until all review proceedings initiated within twenty-one (21) days from the date of such filing have been terminated.

4. TIME REQUIREMENTS OF THE PERMIT (WAC 173-27-090). The following requirements shall apply to all permits:
 - a. Upon a finding of good cause, based on the requirements and circumstances of the project proposed and consistent with the policy and provisions of the master program and the act, local government may adopt appropriate time limits as a part of action on a substantial development permit and local government, with the approval of the department, may adopt appropriate time limits as a part of action on a conditional use or variance permit: “Good cause based on the requirements and circumstances of the project,” shall mean that the time limits established are reasonably related to the time actually necessary to perform the development on the ground and complete the project that is being permitted, and/or are necessary for the protection of shoreline resources.
 - b. Where neither local government nor the department include specific provisions establishing time limits on a permit as a part of action on the permit, the following time limits shall apply:
 - i. Construction shall be commenced or, where no construction is involved, the use or activity shall be commenced within two years of the effective date of a shoreline permit. Provided, that local government may authorize a single extension for a period not to exceed one year based on reasonable factors, if a request for extension has been filed before the expiration date and notice of the proposed extension is given to parties of record and the department.
 - ii. Authorization to conduct development activities shall terminate five years after the effective date of a shoreline permit. Provided, that local government may authorize a single extension for a period not to exceed one year based on reasonable factors, if a request for extension has been filed before the expiration date and notice of the proposed extension is given to parties of record and the department.
 - iii. The effective date of a shoreline permit shall be the date of the last action required on the shoreline permit and all other government permits and approvals that authorize the development to proceed, including all administrative and legal actions on any such permit or approval. It is the responsibility of the applicant to inform the local government of the pendency of other permit applications filed with agencies other than the local government and of any related administrative and legal actions on any permit or approval. If no notice of the pendency of other permits or approvals is given to the local government prior to the date established by the shoreline permit or the provisions of this section, the expiration of a permit shall be based on the shoreline permit.
 - iv. When permit approval is based on conditions, such conditions shall be satisfied prior to occupancy or use of a structure or prior to commencement of a nonstructural activity: Provided, that an alternative compliance limit may be specified in the permit.
 - v. Revisions to permits under WAC 173-27-100 may be authorized after original permit authorization has expired under subsection (ii) of this section: Provided, that this procedure shall not be used to extend the original permit time requirements or to authorize substantial development after the time limits of the original permit.
 - vi. Local government shall notify the department in writing of any change to the effective date of a permit, as authorized by this section, with an explanation of the basis for approval of the change. Any change to the time limits of a permit other than those

authorized by this section shall require a new permit application.

5. The proposed project shall be in general conformance to the project plans and information provided by the applicant listed as exhibits in this report, and following, except as modified by conditions of approval contained herein or as otherwise approved by Permitting.
6. Any substantive changes to the approved shoreline plans may require the applicant to obtain a new shoreline permit or a revision to this shoreline permit pursuant to WAC 173-27-100.
7. This project shall be constructed in a manner consistent with the King County Shoreline Master Program and regulations.
8. The following conditions have been established under SEPA authority as necessary to mitigate the potential adverse environmental impacts of this development:
 - a. In order to meet the requirements of the Endangered Species Act, the applicant may conduct the Authorized activities from July 16 through February 15 in any year USACE permit is valid. The applicant shall not conduct work authorized by the permit from February 16 through July 15 in any year this permit is valid. If changes to the originally authorized work window are proposed, the applicant shall notify Permitting if the project requests a modification to the work window imposed by the USACE.
 - b. General Measures:
 - i. All harvesting will be done manually with no mechanical equipment except for an electric/battery-powered winch to raise long lines and shellfish cages.
 - ii. No mechanical dredge harvesting, raking, harrowing, tilling, leveling or other bed preparation activities, or frosting or applying gravel/shell on beds, shall be done.
 - iii. No activity will occur landward of the MLLW tide line.
 - iv. No nets will be used (shellfish cages/socks will be used).
 - v. No inputs (fertilizer, pesticides, fresh water, etc.) will be used on the farm site.
 - vi. No land vehicles will be used in the farm area.
 - vii. Vessels used in operations will be maintained to avoid release of any fuels or oils and will carry absorbent pads in the unlikely event of a spill.
 - viii. Sorus tissue for seeding will be collected within 50 nautical miles of the farm site and 30-50 seaweed plants will be used to maintain genetic diversity.
 - c. Submerged Aquatic Vegetation and Benthic Habitat:
 - i. No eelgrass is present thus activity associated with the farm will not impact eelgrass.
 - ii. To protect local wild kelp genetics, a small amount of cultivated sugar kelp (less than 5 pounds) will be originally sourced from local sugar kelp in accordance with the Washington State Department of Natural Resources harvest regulations. Sorus material will be collected on permitted waters and grown by the applicant to produce sugar kelp "seed".
 - iii. The aquaculture lines have been sited to be located in areas with minimal to no existing macroalgae present.
 - iv. Prior to anchor installation a ROV will be utilized to view the area where the anchors will be placed. Final positioning of anchors will be done to avoid existing macroalgae to the extent practicable.
 - v. Upon installation of anchoring system, photos will be captured. Photographic surveys of

anchor sites will be done quarterly and will be available upon request.

- vi. Due to potential effects on macroalgae and benthic community, a quantification of no net-loss will be provided in post-project reporting.
- vii. Monitoring before and after construction and operations will be conducted to see if the proposed project provides benefits or impacts to the benthic community.

d. Marine Mammals:

- i. No intentional hazing of wildlife will occur.
- ii. When performing other activities onsite, the grower shall routinely inspect for and document any fish, bird, or mammal found entangled in the gear, nets, or other equipment. In the event that any fish, birds, or mammals are found entangled, the grower shall: 1) provide immediate notice (within 24 hours) to the Washington Department of Fish and Wildlife (all species), Services (ESA listed species), and/or Marine Mammal Stranding Network (marine mammals); 2) attempt to release the individuals without harm; and 3) provide a written and photographic record of the event, including dates, species identification, number of individuals, and final disposition to the Corps and Services. Contact the U.S. Fish and Wildlife Service Law Enforcement Office at (425) 883-8122 with any questions about the preservation of specimens.
- iii. Prior to installation of farming infrastructure, operators will survey for Southern Resident Killer Whales (SRKW), humpback whales, and other marine mammals (and consult with the ORCA Network) and avoid in-water activities if any are within, or anticipated to be in, the project area. Similarly, operators will not conduct farm maintenance activities or harvest if SRKW or humpback whales are within or are anticipated to enter the project area. Please post signs in the vessels reminding operators to stay a minimum of 200 yards away from marine mammals at all times.
- iv. When species are expected to be present, marine mammal feeding areas and migration corridors will be avoided.
- v. Longlines will be kept taut to reduce potential for marine mammal entanglement.
- vi. A marine mammal entanglement response plan will be developed to define steps to be taken if a marine mammal were to become entangled or otherwise negatively interacting with the aquaculture site.

e. Other Sensitive Species:

- i. Proposed site does not overlap with herring holding/spawning area or WDFW identified surf smelt or sand lane spawning areas.
- ii. If Pacific herring spawn on the cultivated kelp project, operators will contact the Area Habitat Biologist of WDFW and not harvest the kelp until after hatching occurs.
- iii. A qualified biologist will train staff in identification of forage fish eggs and other sensitive resources (e.g., SRKW) to aid in successful implementation of minimization measures.
- iv. All shellfish gear and the vast majority of seaweed gear (the exception being buoys and floating lines) will be subtidal, minimizing the potential for bird entanglement.
- v. As stated above, any fish or wildlife that becomes entangled in gear will be recorded and reported to the appropriate agencies.
- vi. To avoid the inadvertent spread of non-native or invasive species, the applicant will monitor for attached non-native and invasive species during project operation. This would include visual monitoring during site visits as well as during harvest. If any substantial numbers of non-native or invasive species are determined to be present, the applicant will work with WDFW and other expert agencies to address the issue.

- f. Debris and Aesthetics:
- i. All shellfish (and other) gear shall either be secured to long lines and/or anchors or will be removed from the area and kept in a storage area that is landward of MHHW.
 - ii. All shellfish bags and cages will be clearly, indelibly, and permanently marked.
 - iii. All buoys/flotation devices will be constructed of commercial-grade marine material.
 - iv. Regular maintenance and surveillance of farm area, including adjacent beaches, will be completed to remove any project debris.
 - v. Monthly photo surveys will be performed and will be available upon request to document lack of accumulation of kelp build up on adjacent shoreline from the project.
 - vi. Operators will maintain infrastructure (e.g., cultivation lines) to avoid release of any marine debris.
 - vii. Use of plastic gear, including polylines, will be minimized; ensure collection and proper disposal of waste materials, excess line, and other debris consistent with regulations.
 - viii. Survey shoreline and inspect cables and connections at regular intervals and after storm events.
 - ix. Operations will minimize light pollution of trips that occur during non-daylight hours. The only non-daylight work would be in emergency situations.
 - x. Baseline and periodic operational monitoring measures will be established to look for evidence of accumulated kelp on shore.
 - xi. Number of surface buoys will be minimized to limit the visual impact of the farm.
 - xii. Vessels used in operations will be maintained to avoid release of any grease/gas, and will carry absorbent pads in the unlikely event of a spill.
- g. The project shall follow the baseline and periodic operational monitoring standards below:
- i. Catalog and periodic inspection of all farm infrastructure.
 - a) To ensure that all anchors, line, buoys, and cages are in place, secure, and in good condition, monthly inspections will be done. If any insufficiencies are found, repairs will be undertaken as soon as practicable. Inspection should also occur after storm events.
 - ii. Beach inspection/profile.
 - a) Inspection of the natural beach/shoreline directly opposite the farm and 500' to the north and south will be done monthly and documented.
 - b) Unnatural debris, farm gear or otherwise, will be collected and cataloged.
 - iii. Substrate inspection/profile.
 - a) A sampling plan will be developed to document accumulation or lack of accumulation of farm related natural material, marine species (e.g., macroalgae coverage), detritus, etc. The plan will define sampling locations (test and control locations), sampling frequency, and the data analyses that will be used to determine potential changes attributable to the farm.
 - b) Monitoring of macroalgae extent and quantification of no net loss on an annual basis following WDFW macroalgae survey guidelines to the extent practicable.
 - c) Benthic community monitoring following Puget Sound Estuary Protocols (or similar) before and after construction and operations to determine if the project provides benefits or impacts the benthic community.
 - iv. Marine mammal sightings.
 - a) Farm employees will be on site regularly (4-5 times per week weather permitting). Specific notes/conditions will be tracked including major mammal (whales, seals, sealions, otters) sightings.

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 - a) A marine species response plan will be developed and will include tracking observations (item 4) and specific response strategies (e.g., who to call, what to do) in the event of negative interactions with marine mammals.
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 - a) A variety of marine animals have been seen in/around the farm site including various birds, seals, sea lions, jellyfish, herring, sea stars, etc. Farm staff will catalog, observe, and note any changes and/or behaviors that occur due to seasonality, farm operations, or other conditions.
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 - a) Farm staff will become familiar with any/all known and anticipated invasive species (e.g., tunicates) that may be found in the area. Through normal farm operations and maintenance, including underwater drone and/or scuba observations, changes will be noted and reported.
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 - a) The farm location is neither a herring holding nor a known spawning area for herring or other fish. However, if any spawning activity is seen including roe attached to farmed kelp/gear all farm activities will cease until eggs have hatched and the occurrence will be reported.
- ix. Response plan to public comments/questions.
 - a) It is understood that a portion of the public currently has questions/concerns about seaweed farming. A plan will be developed to solicit, understand, and respond to public inquiries.
- x. Reporting.
 - a) An annual report will be submitted providing the details and results associated with the measures above. The report will be submitted to King County and applicable agencies.

NOTE: This decision may be appealed to the State Shoreline Hearings Board. Information on appeal procedures may be obtained from the Shoreline Hearings Board at (360) 459-6327 or the Washington State Department of Ecology Shoreline Appeals Coordinator at (360) 407-6528. Requests for review by the Hearings Board must be received by the Shoreline Hearings Board within twenty-one (21) days of the "date of filing." "Date of filing" of a local government final decision involving approval or denial of a substantial development permit is the date of actual receipt by the department of a local government's final decision on the permit.

Ty Peterson, Commercial Product Line Manager
King County Department of Local Services-Permitting

1/10/2023
Date of signature

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EXHIBITS:

- Exhibit 1: Staff Report and Decision
- Exhibit 2: Site Plan
- Exhibit 3: SSDP Application
- Exhibit 4: Notice of Application
- Exhibit 5: Mailing Labels
- Exhibit 6: Affidavit of Publication
- Exhibit 7: Emailing to Public Agencies and Tribes
- Exhibit 8: Public Comments
- Exhibit 9: Responses to Public Comments
- Exhibit 10: SEPA MDNS
- Exhibit 11: SEPA Checklist
- Exhibit 12: NMFS Letter of Concurrence
- Exhibit 13: Best Management Practices Avoidance and Minimization Measures
- Exhibit 14: USFWS Letter of Concurrence
- Exhibit 15: Eelgrass and Macroalgae Report
- Exhibit 16: Farm Location and Substrate Details
- Exhibit 17: Impact Analysis
- Exhibit 18: US Army Corps of Engineers Permit
- Exhibit 19: Shoreline Survey
- Exhibit 20: Farm Operations Narrative
- Exhibit 21: Examples of Buoys and Lights
- Exhibit 22: Grow Line Buoy
- Exhibit 23: Visualization Photos of PATON and USCG Lighting
- Exhibit 24: Discussion with DOE
- Exhibit 25: Biological Evaluation
- Exhibit 26: Letter from Blue Dot Sea Farm
- Exhibit 27: JARPA

TRANSMITTED TO PARTIES LISTED HEREAFTER:

SPARO KELP AND SHELLFISH FARM
 FILE NO. SHOR22-0015
 January 10, 2023
 Page 25 of 25

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