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HEARING EXAMINER

Creating Solutions for Our Future

BEFORE THE HEARING EXAMINER FOR THURSTON COUNTY

In the Matter of the Application of)	Project No. 2022103702
)	
Taylor Shellfish)	Mazanti Geoduck Farm
)	
)	
for approval of a)	FINDINGS, CONCLUSIONS,
Shoreline Substantial Development Permit)	AND DECISION
)	

SUMMARY OF DECISION

The request for a shoreline substantial development permit to develop a commercial intertidal geoduck farm within Henderson Inlet is **GRANTED** subject to conditions.

SUMMARY OF RECORD

Request:

Taylor Shellfish requested approval of a shoreline substantial development permit to develop a commercial intertidal geoduck farm on 3.6 acres of leased tidelands on the east side of Henderson Inlet near Johnson Point. The tidelands, which are privately owned, are identified as tax parcel number 93000100000.

Hearing Date:

The Thurston County Hearing Examiner conducted a virtual open record public hearing on the application on January 9, 2024. There was heavy weather in Thurston County during the hearing; however, most if not all persons signed up to testify at hearing were able to do so despite intermittent power outages. In light of these widespread difficulties, in order to ensure everyone had a full opportunity to participate, the record was held open through January 12, 2024 to allow any who attempted to participate but were unable to do so for technology reasons to submit post-hearing comment, and to allow those who had wanted to show photos or other information during their testimony to submit those items for the record. The record was held

open through January 22, 2024 for Applicant and Staff representatives to submit responses to public comment given during the hearing and to all items timely submitted after the hearing.¹ Additionally, due to the size of the record and complexity of the materials submitted, the Examiner requested, and the Applicant granted, a 10-business day extension for the decision issuance deadline, making the decision due February 16, 2024.

No in-person site visit was conducted, but the Examiner viewed the subject property and its environs on Google Maps.

Testimony:

At the hearing the following individuals presented testimony under oath:

Scott McCormick, Associate Planner, Thurston County Community Planning and Economic Development Department

Dawn Peebles, Environmental Health Specialist, Thurston County Public Health and Social Services Department

Erin Ewald, Director of Regulatory Affairs, Taylor Shellfish

Nyle Taylor, Senior Farm Director, Taylor Shellfish

Chris Czesla, Marine/Fisheries Biologist, Confluence Environmental Company

Rosalind Schoof, PhD, Ramboll

Ron Smith, MD

Deborah Hall, MD

Betsy Norton

David Hall

Mike Mason

Tonni Johnston

George Johnston

Dr. William Rues

Dr. Cynthia Sheller

Lisette West

Susan Aurand

Attorney Jesse DeNike provided legal argument on behalf of Applicant Taylor Shellfish.

Attorney David Bricklin provided legal argument on behalf of project opponent Protect Henderson Inlet.

¹ On the record at hearing, it was announced that Staff and Applicant responses would be due January 19, 2024; however, both parties experienced issues that caused delay in their submitted responses. Both were submitted January 22, 2024 and are admitted.

Exhibits:

The following exhibits were admitted into the record:

- Exhibit 1 Community Planning & Economic Development Department Report including the following exhibits:
- A. Notice of Hearing, dated December 21, 2023
 - B. Zoning / Vicinity Map
 - C. Master Application, submitted July 22, 2022
 - D. JARPA Application (revised) signed April 3, 2023
 - E. Revised Narrative description (undated)
 - F. Site plans and sketches / cross section, received July 22, 2022
 - G. Eelgrass Survey by Audrey Lamb, Taylor Shellfish Farms, dated July 2019
 - H. Tidelands Lease Agreement, received July 22, 2022
 - I. Geoduck Aquaculture Research Program (final report), dated November 2013²
 - J. Notice of Application, dated November 4, 2022 with adjacent property owners list dated November 2, 2022
 - K. SEPA Mitigated Determination of Non-Significance, dated September 8, 2023 with adjacent property owners list dated November 2, 2022
 - L. SEPA Environmental Checklist signed April 5, 2023 (revised)
 - M. Taylor Shellfish response to public comments, dated January 31, 2023
 - N. Email from Erin Ewald, Taylor Shellfish regarding public comments, dated January 17, 2023
 - O. Letter from Protect Henderson Inlet to the Washington Department of Ecology, dated July 27, 2023
 - P. Email from Tonni Johnston to Scott McCormick, CPED, dated September 22, 2023
 - Q. Letter from Protect Henderson Inlet to the US Army Corp of Engineers, dated July 24, 2023

² The version of this document uploaded to the County website as an exhibit did not include the appendices containing the full text of the research manuscripts. The Hearing Examiner takes official notice of the complete version of the document, including appendices, which is publicly viewable at <https://wsg.washington.edu/wordpress/wp-content/uploads/publications/Geoduck-Final-Report-Dec-2013.pdf>. In this decision, citations to this document are to the complete version.

- R. Letter from Protect Henderson Inlet to Andrew Deffobis, Thurston County Senior Planner re: Shoreline Master Program updates, dated May 30, 2023
- S. Document titled “The Impact of Microplastics on Health by Ronald Smith, MD, Protect Henderson Inlet (undated)
- T. Letter from Protect Henderson Inlet to Abbie Adams and Brett Bures, CPED, dated July 20, 2023
- U. Letter from Protect Henderson Inlet to Kraig Chalem, Senior Planner, CPED, dated March 21, 2023
- V. Letter from Protect Henderson Inlet to Kraig Chalem, Senior Planner, CPED, dated March 21, 2023
- W. Letter from Protect Henderson Inlet to Kraig Chalem, Senior Planner, CPED, dated March 21, 2023
- X. Letter from Protect Henderson Inlet to Kraig Chalem, Senior Planner, CPED, dated March 21, 2023
- Y. Email from Bruce Justinen to Ron Buckholt Senior Planner, CPED, dated December 5, 2022
- Z. Email from Michael Mason to Ron Smith, TC BoCC, Ron Buckholt, CPED et. al., dated December 5, 2022
- A1. Email from William Reus to Thurston County BoCC, Ron Buckholt et.al., dated December 5, 2022
- B1. Email from Kristin Hearn-Papasian to Ron Buckholt et. al., dated December 5, 2022
- C1. Letter from David Hall to Ron Buckholt, CPED, dated December 5, 2022
- D1. Email from Christopher Papasian to Ron Buckholt, CPED, dated December 5, 2022
- E1. Email from Sara Develle with Thurston County Board of County Commissioners (BoCC) with attached comments to Ron Buckholt, CPED from George Johnston, dated December 3, 2022
- F1. Email with Washington Department of Natural Resources attachments from Michael Mason to Ron Buckholt, CPED and Thurston County BoCC et. al., dated December 5, 2022
- G1. Email from Becky Beswick to Ron Buckholt, CPED, dated December 5, 2022
- H1. Email from Ron Smith to Ron Buckholt, dated December 5, 2022 with attachment, dated December 2, 2022
- I1. Email from Laura Hendricks to Ron Buckholt, CPED, dated December 5, 2022 with the following sub-attachments:

- II.1 US Dist. Court, Western Dist. Of Washington at Seattle Case No. C16-0950RSL regarding US Army Corps and Taylor Shellfish, Order Holding NWP 48 Unlawful in the State of Washington and Requesting Additional Briefing
- II.2 US Court of Appeals for the Ninth Circuit no. 20-35546, D.C. No.2:16-cv-00950-RSL (US Army Corps and Taylor Shellfish)
- II.3 Acres Innovative Country Living, Winter 2015
- II.4 This isn't your Grandfather's Oyster Farm (article-undated)
- II.5 Coalition to Protect Puget Sound – Scientific Evidence that Industrial Shellfish Aquaculture Adversely Affects Iconic Washington State Marine Life (undated)
- II.6 Coalition to Protect Puget Sound 0 Scientific Evidence that Industrial Shellfish Aquaculture "Is Poisoning our Shoreline" (undated)
- J1. Letter from the Washington Department of Ecology, dated December 5, 2022
- K1. Letter from Sam Smith to Ron Buckholt, CPED, dated December 4, 2022
- L1. Email from Evan Smith to Ron Buckholt, CPED, dated December 4, 2022
- M1. letter from Holly Hulst to Ron Buckholt, CPED, dated December 4, 2022
- N1. Email from Pyke Johnson to Ron Buckholt, CPED, dated December 4, 2022
- O1. Letter from William and Sherry Reus to Ron Buckholt, CPED, dated December 3, 2022
- P1. Email from David Hall to Lon Sullivan and Ron Buckholt, CPED, dated December 3, 2022
- Q1. Letter from George Johnston to Ron Buckholt, dated December 3, 2022
- R1. Email from William Reus to Ron Buckholt, CPED et. al., with link to Shoreline Master Program (SMP) information
- S1. Email from Lon Sullivan to Ron Buckholt, CPED, dated December 3, 2022
- T1. Email and attachments from Kevin Vandehey – Case Inspections to Ron Buckholt, CPED et. al., dated December 3, 2022
- U1. Letter from Ron Smith and Deb Hall to Ron Buckholt, dated December 2, 2022
- V1. Email from Bill and Sherry Reus and Stephanie Bishop (South Sound Green Program Manager) to Ron Buckholt, CPED and Taylor Shellfish, dated December 2, 2022

- W1. Email from Tristan Atkins to Ron Buckholt, CPED, dated December 1, 2022
- X1. Email from Ron Smith and Deb Hall to Ron Buckholt, CPED, dated December 2, 2022
- Y1. Letter from Pyke Johnson to Mr. Buckholt, CPED, dated December 2, 2022
- Z1. Email from Michael Mason to Ron Buckholt, CPED and Thurston County BoCC, dated December 2, 2022
- A2. Email from Rich Hattrup to Ron Buckholt, CPED, dated December 2, 2022
- B2. Email from Lanny Carpenter to Ron Buckholt, CPED, dated December 1, 2022
- C2. Email from Ron Smith & Deb Hall to Ron Buckholt, CPED, dated November 30, 2022
- D2. Email from Michael Mason to Thurston County BoCC and Ron Buckholt, CPED, dated November 30, 2022
- E2. Email from Michael Mason to Ron Buckholt, CPED, dated November 28, 2022
- F2. Email from Jerry Blaser to Ron Buckholt, CPED, dated November 28, 2022
- G2. Email from Tonni Johnston to Ron Buckholt, CPED, dated November 28, 2022
- H2. Letter from William and Sherry Reus to Ron Buckholt, CPED, dated November 26, 2022
- I2. Email from Darcy Eggeman to Ron Buckholt, CPED, dated November 25, 2022
- J2. Email from Bill and Sherry Reus to Ron Buckholt, CPED et. al., dated November 21, 2022
- K2. Email from Jim Brazil to Ron Buckholt, CPED et. al., dated November 21, 2022 referencing an email from Bill and Sherry Reus, dated November 19, 2022
- L2. Email from Ron Smith to Ron Buckholt, CPED et. al., dated November 21, 2022
- M2. Letter from William and Sherry Reus to Ron Buckholt, CPED, dated November 21, 2022
- N2. Email from William and Sherry Reus to Ron Buckholt, CPED dated November 21, 2022

- O2. Email from William and Sherry Reus to Ron Buckholt, CPED et. al., received November 21, 2022
- P2. Email from William and Sherry Reus to Ron Buckholt, CPED et. al., dated November 19, 2022
- Q2. [none submitted]
- R2. Email from Christopher Papasian to Bill and Sherry Reus, Ron Buckholt, CPED et. al., dated November 19, 2022
- S2. Email from Christopher Papasian dated November 19, 2022 regarding an email from William and Sherry Reus dated November 19, 2022 to Ron Buckholt, CPED
- T2. Letter from Tonni Johnston to Ron Buckholt, CPED (undated)
- U2. Approval memo from Dawn Peebles, Thurston County Environmental Health, dated June 5, 2023
- V2. Comment letter from the Nisqually Indian Tribe, dated November 10, 2022
- W2. Email from Erin Ewald with Taylor Shellfish to Scott McCormick, Thurston County CPED, dated December 19, 2023
- X2. Email from Erin Ewald, Taylor Shellfish to Scott McCormick, Thurston County CPED, dated December 20, 2023
- Exhibit 2 Letter from NOAA National Marine Fisheries Service to US Army Corps of Engineers, dated September 2, 2016 with attached programmatic biological opinion regarding Washington Shellfish Aquaculture WCR 2014-1502, submitted by Applicant
- Exhibit 3 Shellfish Programmatic Biological Assessment, Army Corps of Engineers, dated October 2015 provided by Applicant
- Exhibit 4 Public Comments received after publication of the staff report:
 - a. Harry Branch email, received January 1, 2024
 - b. William Reus email, received January 3, 2024
 - c. Mickie Hattrup email, received January 4, 2024
 - d. Rich Hattrup email, received January 5, 2024
 - e. Eva Smith email, received January 7, 2024
 - f. Gerald and Janet Sheehan letter, received January 7, 2024
 - g. Mark Butcher and Pam Meyer letter, received January 7, 2024
 - h. Pyke Johnson email, received January 7, 2024
 - i. Jonathan Briggs email, received January 7, 2024

- j. Laura Westrup email, received January 8, 2024
- k. Jan Odano email, received January 8, 2024
- l. Darcy Eggerman email, received January 8, 2024
- m. Two letters (marked m1 and m2) from Tonni Johnston, received January 8, 2024
- n. George Johnston letter, received January 8, 2024
- o. Friends of Burley Lagoon Board letter, received January 8, 2024
- p. Sam Smith email, received January 8, 2024
- q. Janell McCleary letter, received January 8, 2024
- r. Betsy Norton letter, received January 8, 2024
- s. Lon Sullivan and Virginia Cannon email, received January 8, 2024
- Exhibit 5 Geoduck Aquaculture Project Should Not Be Approved, by Protect Henderson Inlet, submitted by Ron Smith, January 8, 2024
- Exhibit 6 Adverse Impact of Aquaculture on Forage Fish in Henderson Inlet, submitted by Ron Smith, January 8, 2024
- Exhibit 7 New Perspective of Commercial Shellfish Growers Use of Plastics in Marine Waters Including Henderson Inlet, submitted by Ron Smith, January 8, 2024
- Exhibit 8 Hearing Examiner Summation, submitted by Ron Smith, January 8, 2024
- Exhibit 9 Appendices, Geoduck aquaculture panel, Protect Henderson Inlet, submitted by Ron Smith, January 8, 2024
- Exhibit 10 PowerPoint presentation, Chris Cziesla, Confluence Environmental, dated January 9, 2024 submitted by Applicant
- Exhibit 11 Chris Cziesla resume, submitted by Applicant
- Exhibit 12 Report Evaluation of Refined Geoduck Nursery Tubes from Confluence Environmental, dated May 15, 2023 submitted by Applicant
- Exhibit 13 Email from Sean McDonald to Marlene Meaders, dated November 28, 2016 with attached memo, submitted by Applicant
- Exhibit 14 Memo from Rosalind A. Schoof, Ramboll Environment & Health to client Plauche & Carr LLP re: microplastics literature update, dated January 9, 2024 submitted by Applicant
- Exhibit 15 Resume of Dr. Rosalind Schoof, submitted by Applicant
- Exhibit 16 Article from Schumway et. al., titled "A Critical Assessment of Microplastics in Molluscan Shellfish with Recommendations for Experimental Protocols, Animal Husbandry, Publication, and Future Research," submitted by Applicant

- Exhibit 17 Slide Presentation titled “Taylor Shellfish Henderson Bay Geoduck Farm”, dated January 9, 2024 submitted by Applicant
- Exhibit 18 Slide Presentation titled “Plastic Shellfish Gear Potential Issues” by Dr. Rosalind A. Schoof, Ramboll
- Exhibit 19 Memo from Marlene Meaders, Chris Cziesla, and Ruth Park of Confluence Environmental Company to Taylor Shellfish staff regarding Field Methods and Results of Taylor Foss Farm Visit: Sand Dollar Observations Associated with Geoduck, dated February 13, 2015 submitted by Applicant
- Exhibit 20 Shorelines Hearings Board decision in matter of Coalition to Protect Puget Sound Habitat v Pierce County, Taylor Shellfish, and Seattle Shellfish, SHB No. 14-024, dated May 15, 2015 submitted by Applicant
- Exhibit 21 David A. Bricklin, Bricklin & Newman LLP memorandum to Hearing Examiner, dated January 12, 2024 (citations from his verbal remarks)
- Exhibit 22 Slide Presentation titled “Industrial Garbage of Henderson Inlet and Current Ecological Conditions, dated January 5, 2024, submitted by Tonni Johnston
- Exhibit 23 Post-Hearing Public Comments:
- a. Michael Mason email, dated January 10, 2024
 - b. Bryan Johnston email, dated January 10, 2024
 - c. William Reus email, dated January 11, 2024
 - d. Bruce Justinen letter, received January 12, 2024
 - e. William and Charlen Ide letter, received January 12, 2024
 - f. Pyke Johnson email, dated January 12, 2024
 - g. Shelly Gaske email, dated January 12, 2024
 - h. Ron Smith email, dated January 12, 2024
 - i. Deb Hall email, dated January 12, 2024
 - j. Marta Allen email, dated January 12, 2024
 - k. Cynthia Sheller letter, received January 12, 2024
- Exhibit 24 George Johnston presentation slides, received January 12, 2024
- Exhibit 25 David Hall presentation slides titled “Marine Education for School Children, Johnson Point Loop,” received January 12, 2024
- Exhibit 26 Applicant’s post-hearing submittal, dated January 22, 2024, with the following appendices (App.) and attachments (Att.):
- App.1. Assessment of Known, Apparent, and Likely Impacts Associated With Geoduck Aquaculture With Emphasis on The Proposed Haley Shellfish Farm, presented to Shoreline Hearings Board March 2015 by Jim Brennan

- App.2. Geoduck Gear monitoring results
- App.3. Farm Monitoring Dashboard screen capture
- App.4. Graphic depicting farm location in relation to properties of those who submitted comments (apparently based on Assessor parcel information)
- App.5. State of Washington Court of Appeals Commissioner Koe notation ruling in Case #: 839021, *Friends of Guemes Island Shorelines v. Kevin Duncan*, (Skagit County Superior Court No. 21-2-00234-9), July 29, 2022
- Att.1. Applicant Taylor Shellfish Farms' Response to Public Comments
- Att.2. Confluence Environmental company, Response to Comments on Thurston County Taylor Shellfish Farms Project No.: 2022103702
- Att.3. Ramboll, Responses to Comments on Microplastics: Mazanti Farm Hearing
- Att.4. Taylor Shellfish Company Mazanti Shellfish Farm Project No. 2022103702, Memorandum addressing consistency with SMPTR, dated October 27, 2023
- Att.E. Enclosure 1: Conservation Measures and applicable terms and conditions from the Programmatic Biological Opinions for Shellfish Activities in Washington State Inland Marine Waters (U.S. Fish and Wildlife Service (USFWS) Reference Number 01EWWF002016-F-0121, National Marine Fisheries Service (NMFS) Reference Number WCR-20141502)
- Att.F. Washington Shellfish Initiative, dated December 9, 2011
- Att.G. Washington Shellfish Initiative, dated January 2016
- Att.H. Washington Shellfish Initiative – Phase II Work Plan, dated January 2016
- Att.I. NOAA's National Shellfish Initiative, dated December 2011
- Att.K. Assessing Potential Benthic Impacts of Harvesting the Pacific Geoduck Clam *Panopea generosa* in Intertidal and Subtidal Sites in British Columbia, Canada, *Journal of Shellfish Research*, Vol.34, No.3, 757–775, 2015

Exhibit 27 Staff response to public comments, dated January 22, 2024

Based on the record developed through the open record hearing process, the Hearing Examiner enters the following findings and conclusions:

FINDINGS

Site Characteristics and Context

1. Taylor Shellfish (Applicant) requested approval of a shoreline substantial development permit (SSDP) to develop a commercial intertidal geoduck farm on 3.6 acres of leased tidelands on the east side of Henderson Inlet near Johnson Point. The privately owned tidelands are identified as tax parcel number 93000100000.³ *Exhibits 1, 1.C, 1.D, and 1.H.*
2. The subject tidelands and adjacent upland parcels are zoned Residential LAMIRD 1/1 (RL 1/1) and Residential LAMIRD 1/2 (RL 1/2). *Exhibits 1 and 1.B.* Primary permitted uses in both zones include single and two-family residences, agriculture, and home occupations. *Thurston County Code (TCC) 20.11A.020 and 20.10A.020.* The zoning ordinance defines “agriculture” as including raising, harvesting, and processing clams. *TCC 20.03.040(3).* Consequently, the proposed aquaculture use is allowed in the RL 1/1 and RL 1/2 zones. *Exhibit 1.*
3. Adjacent upland parcels, which are not under the same ownership as the subject tidelands, are developed with single-family residences and significant shoreline armoring upland of the lease area. There are no public docks in the project vicinity. The shoreline in the vicinity is not identified as a shoreline of statewide significance and the record does not indicate that it is known for aesthetic, scenic, historic, or ecological qualities, or cultural resources. *Exhibits 1, 1.D, and 26, Appendix 4 (.pdf page 30), and 26, Attachment 4 (page 9).*
4. The subject Puget Sound shoreline is under the jurisdiction of the Shoreline Master Program for the Thurston Region (SMPTR), which designates the subject shoreline as a Conservancy shoreline environment. Aquaculture is an allowed use in the Conservancy shoreline environment. Non-exempt development within shoreline jurisdiction that exceeds \$8,504.00 in fair market value requires an SSDP. In this case the proposed geoduck farm is not an exempt activity, and the fair market value would exceed \$8,504.00. Thus, an SSDP is required. *Exhibits 1 and 1.D; SMPTR, Section 3.II.D; Washington State Register (WSR) 22-11-036.*
5. The subject tidelands are in an area approved for shellfish growing by the Washington Department of Health and within an area which, based on Department of Ecology mapping, has predicted arsenic levels from the Tacoma smelter plume that are less than the state cleanup level of 20 parts per million. The marine waters in the area are not identified in the Washington State Department of Ecology 303(d) list of impaired waterbodies; there has been only one bacteria sample in the area over limits in the vicinity. *Exhibit 17; Erin Ewald Testimony.*

³ The legal description of the property is as follows: “Oyster land in Section 5, Township 19 North, Range 1 West of the Willamette Meridian commencing at the north meander corner; south 22°W 9.17 chains; southerly along meander line 11.75 chains; west 4.23 chains; northerly parallel with meander line to a point 4.23 chains west of the point of beginning; east 4.23 chains.” *Exhibit 1.H (Record of Survey).*

6. The overall leased area totals approximately 8.5 acres in Henderson Inlet in South Puget Sound, which is approximately five miles long and half a mile wide, with water depths ranging from 10 to 35 feet. The 3.6-acre proposed geoduck cultivation area (farm site) is in the southern portion of the leased area, waterward of upland tax parcels 56550-800100, -200200, and -200100. The farm site is primarily cobble, with gravel transitioning to sand and finer material substrate. *Exhibits 1.D, 1.F, and 1.K; see also Exhibit 26, Appendix 4 (.pdf page 30).* Based on an eelgrass survey of the subject tidelands, the project area does not contain eelgrass (*Zostera marina*). *Exhibit 1.G.*
7. The presence or absence of eelgrass is an important consideration due to the following: eelgrass provides cover for juvenile salmonids and structure for the spawning of salmonid prey species, including herring; geoduck harvest activities can reduce eelgrass density; and eelgrass recovery can take several years. *Exhibit 2, page 67; Exhibit 3, page 85; Exhibit 1.I, Appendix V; Exhibit 23H.*
8. The eelgrass survey of the subject tidelands relied upon by the Applicant and accepted by the County was conducted by Audrey Lamb, a biologist employed by the Applicant who had completed an Army Corps of Engineers (ACOE) eelgrass delineation training course and who had experience conducting eelgrass surveys. The survey was performed on July 5, 2019 at a -3.18 tide. No eelgrass was found. The predominant vegetation found within the project area was *Ulva spp.* *Exhibit 1.G; Erin Ewald Testimony.* This finding was consistent with Washington Department of Natural Resources (DNR) mapping depicting the results of its submerged vegetation monitoring program. The subject tidelands and surrounding vicinity are mapped as having no eelgrass present. *Exhibit 17; Erin Ewald Testimony.* This finding was also consistent with the eelgrass discussion contained in the National Marine Fisheries Services (NMFS) programmatic biological opinion (PBO) for shellfish aquaculture activities in Washington, which notes a lack of eelgrass beds in southern Puget Sound. *Exhibit 2, page 60.*

Proposal

9. As originally proposed, the shellfish operation was to grow geoduck, manilla clams, and oysters on the subject tidelands. During the course of review, the proposal was modified to exclude all species but geoducks. As clarified in the record, the Applicant proposes to plant geoduck between the tidal elevations of +1 foot mean lower low water (MLLW) and -4.5 MLLW. *Exhibits 1.D and 10.* All access to the aquaculture operation would be by boat. *Erin Ewald Testimony.*
10. Although the application and project narrative describe use of “PVC and/or mesh nursery tubes” (see Exhibits 1.D and 1.E), the Applicant proposes to plant the geoducks in eight-inch-diameter flexible HDPE mesh nursery tubes. *(See images on slides 2 and 11 of Exhibit 19.)* The planting process would take approximately two months and would not require beach preparation. The mesh tubes would be inserted into the substrate with a modified eight-inch diameter clam gun, which would be inserted approximately eight inches into the substrate. Each tube would be left behind as the clam gun is pulled out.

The top six to nine inches of the tubes would extend above the substrate. The tubes would be installed at a density of 28,000 tubes per acre, resulting in roughly 100,000 tubes within the project area. Four geoduck seeds would be placed in each tube. *Exhibits 12 and 17; Testimony of Erin Ewald and Nyle Taylor.*

11. The Applicant identified several benefits associated with use of flexible HDPE mesh tubes for predator exclusion as compared to use of PVC tubes or rigid HDPE mesh tubes (materials used by the Applicant prior to 2023):

- The material is flexible and can lie flat against the substrate.
- As proposed, the mesh tubes would be installed at a slightly lower density (one tube per 1.25 square feet) than is typical for the other methodologies (one tube per one square foot).
- Area nets are not needed over flexible mesh tubes, whereas they are sometimes needed over PVC tubes. The lack of area nets while the tubes are present reduces risks associated with entanglement of wildlife.
- Installation does not require disturbance of the substrate other than insertion of the modified clam gun. In contrast, installation of PVC or rigid mesh tubes disturbs the substrate to a depth of up to 12 inches and involves removal and replacement of a core of sediment. In addition, water pressure is not required for installation of the flexible mesh tubes, whereas the PVC or rigid mesh tubes might require use of low-pressure water pumped through a hose.
- Installation would result in less turbidity because it would occur at low tide when the substrate is exposed or when less than two feet of water is present.
- The retention rate of the flexible mesh tubes within the substrate is expected to be high, reducing the potential for loose geoduck gear in the marine environment. Unlike PVC tubes, which can be dislodged by wave action, the buried portion of the flexible mesh tubes would not be disturbed by wave energy. The Applicant has successfully used flexible mesh tubes at other sites it operates with similar or greater exposure to wind and wave energy.
- Because the flexible mesh tubes can lie flat against the substrate, they are less likely to impede access over the planted area. In a test of the methodology conducted elsewhere, the tubes were not dislodged when nets used by tribal fishers were pulled over the planted area.
- The flexible mesh tubes would not require a dedicated barge during installation and removal periods; due to their light weight and flexibility, the material could be accommodated on smaller boats that are brought to and taken from the site each night, rather than being left on-site on a barge until planting is complete.
- The flexible mesh tubes, which are darker in color, are less visible than the solid PVC tubes, which have typically been white in color.
- Mesh tubes allow sediment to flow through, thereby reducing accretion.

- When removed, the flexible mesh tubes can often be pulled directly out of the substrate without use of water hoses to liquify the substrate, which results in less disturbance relative to the practices used for PVC tubes.

Exhibits 12 and 17; Testimony of Nyle Taylor and Chris Czesla.

12. The HDPE flexible mesh tubes are expected to be used for five growing cycles (approximately 10 years of use) and then recycled. *Nyle Taylor Testimony; Erin Ewald Testimony.* The Applicant has used the same HDPE material in other applications (such as clam bags) and has observed it to maintain its integrity for at least 10 years. *Exhibit 26, Attachment 1.*
13. The mesh tubes would be in place for 1.5 to 2.5 years and then removed by hand or with a low-pressure water pump. At that point, area nets, secured to the substrate with rebar to prevent wildlife entrapment, would be installed if needed to protect growing geoduck against active predation. Such area nets are not always required; the Applicant did not place area nets in 2023. If nets are not used, the only visible indicator of the presence of the geoduck farm during the remainder of the grow-out period would be geoduck necks extending through the substrate and the farm site corner boundary markers. The grow-out period after tube removal would be between 2.5 and 4.5 years, resulting in a total growing cycle of five to seven years. *Nyle Taylor Testimony; Exhibit 17.*
14. The harvest and replanting process would take four to six months, with harvest activities limited to approximately four hours per day. Harvest would occur at low tide or with divers at high tide. A low-pressure hose would be used to loosen the substrate to remove the geoducks. The low water pressure is needed to avoid injuring the geoducks, as they must be sold live. The water pump would be enclosed in an insulated box to dampen noise levels, and the water intake line would be screened to protect wildlife. There would be no overhead lights used for nighttime harvest activities; employees would wear headlamps. *Nyle Taylor Testimony; Exhibit 17.*
15. Addressing the obligation to avoid adverse impacts to the shoreline, its vegetation, and wildlife, the Applicant submitted the following. The project would avoid sensitive habitats and species, such as eelgrass, forage fish, and kelp. All proposed farm activities would occur outside of documented and potential spawning areas for sand lance and surf smelt, which at elevations of +5 feet MLLW to mean higher high water and +7 feet MLLW to extreme high water respectively, are well outside the proposed farm perimeter. Thus, impacts to forage fish are avoided. The farm is proposed at a tidal elevation well below juvenile salmon nearshore migration paths. There could be minor shifts in species abundance within the farm site when predator protection is present, with numbers of some species increasing and other species decreasing related to structure of the mesh tubes. Bird species would potentially be impacted by avoiding the vicinity during active planting or harvesting activities, which are time limited and infrequent. Several species of birds have been shown to increase in numbers around geoduck farm sites due to increased feeding opportunities. The farm would not directly impact marine mammals

beyond the addition of structure could increase foraging opportunities. The effects of the proposed activities have been found to be localized and limited, consistently similar or less than the natural disturbance regime (storms). The Applicant submitted that the project would contribute to improved water quality due to filter feeding, which removes excess nutrients. All operations and activities would be conducted consistent with industry best management practices and conservation measures identified by federal agencies with jurisdiction to avoid and minimize potential impacts to species and habitats. The Applicant submitted that the proposal would not affect the viability, persistence, or distribution of any regulated species potentially present at the project site. *Exhibits 1.I, 1.M, 10, and 26, Attachments 1 and 2; Testimony of Chris Czesla and Erin Ewald.*

Agency Review for Potential Impacts of the Proposed Farm

16. The Seattle District of the US Army Corps of Engineers (ACOE) is responsible for regulating shellfish-related activities in Washington under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA) of 1899. The issuance of permits by the Corps is an action requiring compliance with the Endangered Species Act (ESA). Section 7 of the ESA requires the ACOE to complete consultation with the National Marine Fisheries Services (NMFS) and/or US Fish and Wildlife Service (USFWS) on any action that may affect an ESA-listed species or designated critical habitat. Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires the ACOE to complete consultation with NMFS on any action that may adversely affect essential fish habitat. *Exhibit 3, page 1; see also Exhibit 10.*
17. As part of the consultation process for its permitting of aquaculture (including the issuance of individual permits and the issuance of verification letters under nationwide permits), the ACOE issued a Programmatic Biologic Assessment (PBA) for Shellfish Activities in Washington State Inland Marine Waters in October of 2015. *Exhibit 3.* NMFS and USFWS subsequently issued programmatic biological opinions (PBOs) on the ACOE action. *See Exhibit 2 for NMFS PBO.* The consultation process resulted in a list of 32 terms, conditions, and conservation measures to ensure that impacts to listed species are avoided or minimized. *Exhibit 26, Attachment 4(E).* The proposal is within the scope of activities and geographic area covered by the PBA, and the Applicant proposes to comply with all conservation measures. Consequently, the PBA and PBOs function as the Application's biological evaluation for the proposed geoduck farm. *Exhibit 3, page 38; Exhibit 26, Attachment 4.*
18. The effect determinations rendered in the NMFS PBO address the total impacts of all shellfish activities in all inland marine waters of Washington State ("the action") excluding the Columbia River as subdivided into five geographic regions: Grays Harbor, Willapa Bay, Hood Canal, South Puget Sound, and North Puget Sound. The effect determinations of the overall assessment of the ACOE action were as follows:
 - The action may affect but not likely adversely affect, and would not affect or not

likely adversely affect the critical habitat of, these species: humpback whales, yelloweye rockfish⁴, bocaccio, lower Cowlitz River Chinook salmon, Puget Sound steelhead, Columbia River chum salmon, Pacific eulachon, marbled murrelet, and southern resident killer whales, Western snowy plover;

- The action may affect/would likely adversely affect canary rockfish, Puget Sound rockfish, and green sturgeon but not likely adversely affect these species' critical habitat;
- The action may affect but not likely adversely affect Puget Sound Steelhead and would likely adversely affect their critical habitat; and
- The action may affect/would likely adversely affect, and would likely adversely affect the critical habitat of, Hood Canal summer-run chum, Puget Sound Chinook salmon, Coastal/Puget Sound bull trout.

The total impact of all shellfish activities in all inland marine waters of Washington State is not expected to destroy or adversely modify the critical habitat for any of the listed species. *Exhibit 3*.

19. Thurston County Community Planning and Economic Development Department (CPED, the Department) acted as lead agency for review of the environmental impacts of the proposal under the State Environmental Policy Act (SEPA). In making its environmental determination, the Department considered the following:
 - Master Application
 - SEPA Environmental Checklist
 - JARPA
 - Site Plans, aerial photos, and surveys
 - Project overview
 - Eelgrass survey
 - Comment emails from adjacent property owners
 - Comments from Thurston County Floodplain Manager
 - Comments from Washington Department of Ecology
 - Letter from Nisqually Indian Tribe
 - Memo from Thurston County Environmental Health
 - Pacific Coast Shellfish Growers Association Environmental Policies
 - Sea Grant Washington, Geoduck Aquaculture Research Program, Final Report to the Washington Legislature, dated November 2013

⁴ The PBO determined there would be no effect on yelloweye rockfish critical habitat. *Exhibit 3*.

- Effects of Geoduck Aquaculture on the Environment: A Synthesis of Current Knowledge, by Washington Sea Grant, University of Washington, dated November 2013
- Washington DNR's Geoduck Aquaculture Best Management Practices dated October 15, 2007

The County determined that, with mitigation and compliance with other permit conditions, the project would not have a probable, significant adverse effect on the environment, and issued a mitigated determination of non-significance (MDNS) on September 8, 2023. The MDNS was not appealed and became final after the close of the appeal period on September 29, 2023. *Exhibits 1 and 1.K.*

20. The MDNS contains 18 mitigating measures which require the Applicant to perform or ensure the following: comply with the Washington State Geoduck Growers Environmental Codes of Practice for Pacific Coast Shellfish Aquaculture; prepare a Habitat Assessment or a biological evaluation/biological assessment addressing ESA-listed species; maintain a 10-foot buffer between the planting area and any eelgrass or kelp; install leasehold boundary markers; place shellfish below the tidal elevation of +5 MLLW and outside of sensitive areas such as herring or smelt spawning grounds; use UV-resistant fasteners for individual screens placed on tubes; install unobtrusive signage notifying of contact person for operation; label gear with contact information; remove tubes and netting within 2.5 years of installation (or when no longer needed, if earlier); harvest the geoducks during low tides when possible, to minimize turbidity; prevent gear from escaping the farm area, and patrol the beaches for escaped debris; arrange materials to be appealing to upland observers, and use pipe colored to blend with the environment when possible; maintain a minimum distance of 150 feet from the shoreline for washing, storing, fueling, or maintaining land vehicles; minimize glare for temporary lighting (permanent lighting not allowed); prevent noise from becoming "persistently annoying" to nearby property owners; halt work and provide notice if archaeological artifacts are observed during operations; and obtain all required state and federal approvals prior to commencing work. *Exhibit 1.K.*
21. The Environmental Health Division of the Thurston County Public Health and Social Services Department reviewed the proposal and determined that it meets the requirements of the Thurston County Sanitary Code. Environmental Health did not identify any issues of concern and recommended approval of the SSDP. The septic systems serving upland properties in the vicinity have renewable operational certificates, and the properties are part of a shellfish protection district. *Exhibit 1.U2; Dawn Peebles Testimony.*
22. The Nisqually Indian Tribe commented that it has no issues of concern; however, it requested to be notified if there are any inadvertent discoveries of archaeological resources or human burials. This request was incorporated into the conditions of the mitigated determination of non-significance (MDNS) and the recommended conditions of SSDP approval. *Exhibits 1 and 1.V2.*

Public Notice and Comment

23. Notice of the open record hearing was mailed to property owners within 500 feet of the subject property on December 21, 2023 and published in *The Olympian* on December 29, 2023. *Exhibits 1 and 1.A.*
24. Significant public comment was received in opposition to the proposal. *Exhibits 1.O-1.II, 1.K1-1.T2, 4, 5, 6, 7, 8, 9, 21, 22, 23, 24, and 25; Testimony of Dr. Ron Smith MD, Deborah Hall MD, Betsy Norton, David Hall, Mike Mason, Tonni Johnston, George Johnston, Dr. William Rues, Dr. Cynthia Sheller, Lisette West, and Susan Aurand.* Public comment is summarized in the Staff Report and in Staff's written response at Exhibit 27, as well as in Applicant-provided documents entered into the record as Exhibits 1.M and 26 (Attachments 1 and 2). The findings that follow address key topics of concern.

Plastic

25. Project opponents argued that the Applicant has not proven that plastic associated with the project would not negatively impact human and environmental health. The concerns included not only that nursery tubes and other gear would escape from the project area and litter the shoreline, but that the gear would degrade into microplastic and that plastic components and/or chemical additives in their manufacture would leach into the water, thus contaminating the environment, harming wildlife and bioaccumulating in the shellfish, thereby harming the health of people who consume them. *See e.g., Exhibits 1.S, 8, 4R, 7, 23E, and 23H; Testimony of Dr. Ron Smith, Betsy Norton, and Susan Aurand.*
26. Microplastics have been detected in a wide range of human tissues and fluids, including blood and breastmilk, and in human stool. Endocrine-disrupting chemicals found in some plastics, such as BPA, have been linked to adverse health effects. *Exhibit 1.S; Dr. Ron Smith Testimony.*
27. Project opponents presented credible evidence that aquaculture activities already present in the region result in escaped plastic gear (including bags, zip ties, and geoduck nursery tubes) that washes up on the beaches as litter. *See e.g., Exhibits 22 and 4O; Mike Mason, Tonni Johnston, and Lisette West Testimony.* Escaped plastic gear is an issue of concern because, in addition to being unsightly and potentially entrapping/harming wildlife, it can degrade into microplastics over time. *Exhibit 14.*
28. Some of the project opponents' objections to the proposed use of plastic assumed that the Applicant would use PVC tubes (as that was a material listed in the original application). The concerns raised that were specific to PVC tubes included that they would sink due to their density and would be difficult to recover, and that they would not be recyclable. These were not issues of concern with respect to the proposed HDPE tubes.⁵ Project opponents also submitted pictures of outdoor storage of PVC tubes at aquaculture sites in

⁵ In fact, one project opponent urged that shellfish growers should use HDPE in place of PVC because HDPE is easier to recycle. *Exhibit 22, slide 28.*

the region, a practice that exposes the tubes to UV light, which is believed to contribute to their alleged eventual breakdown into microplastics that can contaminate the environment. *Exhibits 4R, 7, and 22.*

29. One of the concerns raised in public comment with respect to either PVC or HDPE is that additives, such as plasticizers (e.g., phthalates)⁶ and UV stabilizers, would leach into the marine environment. *See e.g., Exhibits 1.S and 4R; Betsy Norton Testimony.* The specific chemical composition of the HDPE proposed for use has not been disclosed, although the Applicant's director of regulatory affairs testified that the manufacturer reported that there are no plasticizers in the material and that it designed for use in the marine environment. *Erin Ewald Testimony.*
30. The Applicant proposes to patrol the farm area for debris once every tide cycle (approximately two weeks) as well as after storms. The Applicant submitted evidence of its monitoring of existing farms for 2023 and early January 2024, in the form of a spreadsheet indicating dates, locational coordinates, and notes on the nature of the debris picked up. There were 118 entries from January 2, 2023 to January 15, 2024 corresponding to patrols on 72 calendar days. While much of the debris related to shellfish aquaculture (especially nursery tubes and oyster grow bags), residential trash was also encountered frequently. Some of the found shellfish gear was labeled as belonging to the Applicant, but the majority was unlabeled or belonged to other companies. With respect to whether the debris included the type of flexible mesh tubes proposed (as opposed to rigid mesh tubes or PVC tubes), it was unclear from the debris descriptions submitted, but for those instances in which a tube diameter was noted, the diameters were less than the eight-inch diameter proposed. The submitted spreadsheet indicates that no debris was found during more than half of the patrols. *Exhibit 26, Appendices 2 and 3, and Attachment 1.*
31. The proposed debris patrol schedule exceeds what is required by the conditions of the programmatic consultation. Condition No. 22 of that document specifies that beaches in the project vicinity must be patrolled at least once every three months, and areas known to accumulate debris must be patrolled after "weather events." The date, location, and description of the type and amount of removed debris must be recorded. *Exhibit 3, page A-7 - A-8; Exhibit 26, Attachments 4 and 4(E).* The spreadsheet the Applicant submitted for 2023 contains the patrol documentation specified in Condition No. 22 and indicates a visit frequency far exceeding once every three months. *Exhibit 3, page A-7; Exhibit 26, Appendix 2.*
32. Other conditions of the programmatic consultation relating to gear (which the Applicant proposes to follow) require gear that is not immediately needed or firmly secured to the substrate to be moved to a storage area landward of MHHW prior to the next high tide; require tubes, mesh bags and area nets to be clearly, indelibly, and permanently marked

⁶ "Plasticizers are used to make plastic more flexible, elastic, and shatter resistant Plasticizers like phthalates and bisphenol A (BPA) are known to migrate from polymers and may act as endocrine disruptors" *Exhibit 14, page 10.*

with name and contact information; and require any wildlife entanglement in area nets to be reported and documented. *Exhibit 3; Exhibit 26*. The proposal does not include storing any aquaculture gear not in active use at the subject tidelands. *Exhibit 1.D; Nyle Taylor Testimony*.

33. The NMFS PBO includes a discussion of PVC geoduck tubes in its analysis of impacts to species. The conclusion reached in the analysis (which considered the potential for PVC to leach contaminants into the water) was that there was no evidence that detectable contaminants would be released, and thus it is unlikely that PVC tubes would result in any discernable effect on protected fish species (see page 74). There was no analysis of potential impacts associated with HDPE flexible mesh tubes, although the PBO notes the use of flexible mesh tubes as a potential methodology (see page 25). *Exhibit 2*.
34. In support of the proposed use of plastic, the Applicant provided the testimony of Dr. Rosalind Schoof, who has a PhD in toxicology and is certified by the American Board of Toxicology. *Exhibit 15*. As explained in Dr. Schoof's written materials, microplastics (defined as plastics smaller than five millimeters) are "ubiquitous in marine water" (*Exhibit 14*, page 1), including Puget Sound, and have been detected in many marine organisms. Microplastics can be categorized as "primary microplastics" or "secondary microplastics." *Id.* Primary microplastics include those created as such for use in products (such as synthetic clothing fibers). Secondary microplastics are those resulting from the breakdown of larger plastic items. The degradation of plastic into microplastic can occur from physical, chemical, and biological processes. In the marine environment, UV exposure and colonization by marine organisms are two factors that can degrade plastic into microplastics. *Exhibit 14, page 1*.
35. Dr. Schoof presented evidence that most marine plastic pollution is from land-based sources, with microfibers from clothing being a significant source, and that aquaculture gear has not been identified as a significant source of marine plastic pollution.⁷ A 2015 study of plastic debris in this region found that the highest levels were in urban areas and the lowest levels of microplastics have been detected in the beaches of South Puget Sound, where aquaculture occurs. *Exhibits 14, 18, and 26; Rosalind Schoof Testimony*.
36. Because it is difficult to determine the origin of microplastics, there are few studies directly testing whether microplastics from shellfish aquaculture gear are contaminating shellfish or sediment. However, Dr. Schoof presented studies demonstrating that the

⁷ As stated in *Exhibit 14*, pages 3-4: "The National Marine Debris Monitoring Program (NMDMP), conducted by Ocean Conservancy, surveyed marine debris on U.S. beaches during a five-year period from 2001-2006 (Ocean Conservancy 2007), finding that plastic items dominated debris collected. For debris found (not limited to plastics), land-based debris made up 48.8% of all collected items, with 33.4% of items from general sources (not specifically land- or marine-based) and only 17.7% of items were ocean-based. For the 40 monitoring locations along the west coast, the contribution from ocean-based items was lower, only 11.3%. Land-based debris and debris from general sources was dominated by plastic straws, balloons, plastic bottles, and plastic bags. The ocean-based debris included rope, floats and buoys, fishing line, traps/pots, and pipe-thread protectors. None of these items is uniquely associated with shellfish aquaculture."

difference between farmed and unfarmed shellfish with respect to microplastic intake is small, with one literature review (Wootton et al., 2022) finding that wild-caught oysters contained more microplastics (though not a statistically significant amount) than farmed oysters, and one study in British Columbia that found only small differences between farmed and unfarmed oysters, with the authors attributing the difference to differences in body weight, and finding that most of the microplastics were fibers from textiles not used in aquaculture. Sediment sampling of a Puget Sound geoduck farm that had been operating for 10 years did not identify any microplastics near the PVC tubes. Dr. Schoof submitted that, of types of plastic used in marine shellfish aquaculture, the one most likely to degrade, leach, and sorb contaminants appears to be expanded polystyrene (EPS), which is often used in buoys. Harder plastics used in shellfish aquaculture, including HDPE and PVC, have not been found to contribute significantly to microplastic pollution, microplastic consumption by marine organisms, or leaching of chemical components. *Exhibits 14 and 18; Rosalind Schoof Testimony.*

37. One of the research articles highlighted by Dr. Schoof was a 2023 literature review by Shumway *et al.* entitled “A critical assessment of microplastics in molluscan shellfish with recommendations for experimental protocols, animal husbandry, publication, and future research.” The authors of the study evaluated more than 750 peer-reviewed articles, and provided conclusions including the following:

- “[T]here is no reliable evidence for transfer and bioconcentration of MP through the food chain as a result of consuming molluscs, either by invertebrates, lower vertebrates, or humans. ... Generally speaking, there are no data to support a claim that shellfish aquaculture increases the presence of the MP in the cultured animals” (p. 93).
- “There are currently no strong data to demonstrate significant uptake or impacts of MP by humans through the consumption of shellfish, and, to date, there are no credible data from field or laboratory observations to indicate detrimental impacts of MP in shellfish on human health.” (p. 97)
- “It is well-established that bivalve molluscs can and do consume MP, and nothing remarkable has been published regarding the uptake of MP by suspension-feeding and deposit-feeding shellfish, that is, it is not surprising that numerous investigators have noted MP in shellfish guts globally. What is remarkable are the extremely low levels of MP particles reported (>~ 10 per individual). It is clear that the levels of accumulation are very low, often bordering on undetectable (and hence unreliable). It is this consistent reporting of low levels that is of significance, not the fact that they are present.” (p. 107)
- “There is no evidence that the MP are a credible or demonstrated threat to human health.” (p. 108)

- “There is no evidence that the extremely low levels of MP reported in mollusks are likely to impose any measurable impacts on the shellfish in their natural habitats.” (p. 108)

Exhibit 16; Rosalind Schoof Testimony; see also Exhibit 18.

38. Dr. Schoof submitted that there are several factors that minimize the degradation of plastic gear in Puget Sound, thereby limiting the potential for production of microplastic and chemical release, including the low water temperature, low levels of sunlight, less growth of organisms on the plastic, grower practices that reduce gear losses, and use of UV inhibitors. *Exhibit 18; Rosalind Schoof Testimony.*
39. Dr. Schoof submitted that HDPE is a very common plastic that is used in nearly all domestic water supplies, and that it is less susceptible to creation of microplastics than PVC. The same type of HDPE material is used in baskets for oyster culture, and there is no data that oyster bags result in microplastics. *Rosalind Schoof Testimony.*
40. Another plastics issue of concern raised in public comment related to the potential for plastics in the marine environment to absorb and/or adsorb contaminants in the water. The concern was that wildlife would ingest the contaminants with the microplastic. *Exhibit 4R; Testimony of Betsy Norton, Dr. Ron Smith.* In response to this concern, Dr. Schoof offered a microplastics literature update issued in January 2024⁸, which reviewed the current state of science addressing microplastic ocean pollution, which indicated that the studies to date conclude that microplastics likely only play a small role in transporting hydrophobic organic chemicals (HOCs) to biota, when compared to natural pathways such as sediment. Specifically looking at the “leaching” of hazardous substances from plastics to the marine environment, and the reverse – plastics taking up hazardous substances and then, once contaminated, being ingested by marine species, one of the studies specifically looking at HDPE, from which nets and flip bags used in Pacific Northwest shellfish aquaculture are constructed, leached lower levels of specific contaminants to resident mussels than other sources of marine plastic pollution (specifically EPS), and the rates of leaching by HDPE were more similar to leaching levels of metal and rock (Jang et al. 2016). Dr. Schoof submitted that the body of currently available evidence does not show that aquaculture gear in Puget Sound releases detectable metals or plasticizers into the environment. Addressing the concern regarding chemicals from plastics impacting health, Dr. Schoof submitted that, based on recent guidance from the Interstate Technology & Regulatory Council, the more conclusive studies suggested that ingested microplastics do not serve as a vector for the

⁸ The agencies sponsoring the studies considered in this microplastics literature review included the Food and Agriculture Organization of the United Nations (FAO), which in turn relied on two reports by the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) for much of the research on the sources, fate, and effects of microplastics in marine environments (GESAMP 2015; GESAMP 2016). GESAMP is an organization composed of scientists from the FAO, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and many other organizations; their reports are designed to provide scientific advice to the sponsoring agencies. *Exhibit 14, page 2.*

transport of persistent pollutants into biota and humans. The Council concluded that microplastics do not play a “major role” in the bioaccumulation of persistent organic pollutants when compared to other exposure pathways. *Exhibits 14, 18, and 26; Rosalind Schoof Testimony.*

41. Overall, Dr. Schoof submitted that plastics used in aquaculture do not contribute significantly to microplastic pollution, microplastic consumption by marine organisms, or leaching of chemical components. According to the Applicant, there are no documented instances of area nets escaping a farm site. This was not controverted in the record. Applicant representatives submitted that the proposed farm would utilize gear that is specifically manufactured to withstand environmental conditions without degrading, which would be routinely monitored to ensure it remains properly deployed and does not experience unexpected wear. Of note, the record shows that over the past decade, bi-annual beach cleanups organized by Washington shellfish farmers to remove all forms of marine debris have led to a downward trend in the amount of aquaculture-related and other marine debris. Dr. Schoof noted that because most of the collected debris is from sources other than aquaculture, shellfish operations may be responsible for a net reduction of marine debris. Finally, the Applicant contended that concerns regarding the use of plastics in shellfish aquaculture have been exhaustively analyzed in multiple prior permit appeals before the Shorelines Hearings Board, which Board has determined that the use of marine-grade gear following best management practices does not cause significant adverse impacts.⁹ *Testimony of Rosalind Schoof and Erin Ewald; Exhibits 14, 18, and 26.*

Impacts to Wildlife and Habitat

42. To address wildlife and habitat issues the Applicant provided the testimony of Chris Cziesla, a marine fisheries biologist with 27 years of experience including extensive experience writing many project-specific and programmatic biological assessments and reviewing the adequacy of such assessments for state and federal agencies. *Exhibit 11.*
43. Project opponents argued that the eelgrass survey submitted by the Applicant is out-of-date, should have been conducted by a third-party and not an employee of the Applicant, and should have been conducted at a lower tidal elevation. *See e.g., Exhibits 1.O and 1.M2; Testimony of Dr. Ron Smith, Mike Mason; David Bricklin argument.*
44. Mr. Cziesla concurred with the methodology used to conduct the eelgrass survey. *Exhibit 26, Attachment 2.* He testified that it is typical for a qualified shellfish grower employee to conduct eelgrass surveys, at least when eelgrass is not present, as is typical in the south Puget Sound area. There is no specific requirement in County, ACOE, WDFW, or NFMS rules that eelgrass surveys be performed by a third party. Federal agencies often

⁹ The Applicant cited the following Shoreline Hearings Board decisions: SHB No. 11-019 (FF 10, 11, and COL 6, 14); SHB No. 13-006c (FF 36-42 and COL 16); SHB No. 14-024 (FF 3943, 47 and COL 13, 20) (marine debris); SHB No. 11-019 (FF 9); SHB No. 13-006c (FF 41-42 and COL 16); SHB No. 14-024 (FF 44-47 and COL 13, 20) [microplastics and leaching concerns]. *Exhibit 26.*

accept studies prepared by applicant employees. The ACOE routinely recommends project proponents conduct eelgrass surveys using the methods that were implemented in the eelgrass study for the instant proposal in areas where eelgrass is not expected to occur. The Taylor Shellfish employee who conducted the eelgrass survey was fully qualified to conduct such surveys. *Testimony of Erin Ewald and Chris Czesla; Exhibit 26, Attachment 2.* With respect to the timing of the survey, the survey was conducted in 2019 because the original application date targeted by the Applicant was 2020, but submittal was delayed due to the pandemic. *Erin Ewald Testimony.* County Planning Staff has not required an updated survey and does not think it is necessary. *Scott McCormick Testimony; Exhibit 27.*

45. Although project opponents argued that the Applicant's eelgrass survey is inadequate, they did not provide independent evidence that eelgrass is or might be present on or near the subject property, and in fact acknowledged a lack of native eelgrass in Henderson Inlet (see Exhibit 23H, slide 24). The testimony presented on eelgrass occurrence in the region is that it is present at Joemma State Park, which is 3.4 nautical miles to the north of the subject property. *Ron Smith Testimony.* This testimony was consistent with the DNR mapping provided by the Applicant, which depicts the presence of eelgrass in the vicinity of Joemma State Park but not in the near vicinity of the subject property.¹⁰ *Exhibit 17.*
46. Although NMFS determined that the Puget Sound Chinook Salmon would be adversely affected by the aquaculture activities covered by the ACOE action, it explained that "the main mechanism through which the proposed action is likely to affect PS Chinook salmon is through effects to eelgrass. With the exception of new culture areas that require a 16-foot buffer from eelgrass, the proposed action is reasonably certain to disturb eelgrass" *Exhibit 2, page 66.* In this case no eelgrass has been located on site, and if any were discovered, the Applicant would comply with the 16-foot setback required by Condition No. 6 the programmatic consultation. *Exhibit 26, Attachments 1 and 4(E).*
47. With respect to impacts associated with geoduck harvest activities, Mr. Czesla credibly testified that the turbidity created during harvest is similar to that resulting from natural disturbances such as wind and storms (but occurs much less frequently than the natural disturbances), that the physical effect is localized and of limited duration (i.e., 2 -3 tidal cycles), and that benthic infauna rapidly recover. Due to the difference in tidal elevation between the geoducks and surf smelt spawning areas, harvest occurring at low tide would not send suspended sediments to the spawning area. *Exhibit 10; Chris Czesla Testimony.*
48. In 2007, the Washington state legislature commissioned Washington Sea Grant, based at the University of Washington, to conduct studies assessing the effects of geoduck aquaculture on Puget Sound and the Strait of Juan de Fuca. Sea Grant issued a final

¹⁰ The DNR eelgrass map is slide 8 of Exhibit 17. Joemma State Park is not identified on the DNR map, but when the DNR map is compared to Google Maps imagery, it is clear that eelgrass has been documented in an area generally correlating with the park.

report of its work to the legislature in November 2013. Two of the studies (both of which were subsequently published in peer-reviewed journals) are of particular relevance to the proposed geoduck farm – *Ecological effects of the harvest phase of geoduck clam (Panopea generosa* Gould, 1850) *aquaculture on infaunal communities in southern Puget Sound, Washington USA* by VanBlaricom et al. and *Effects of geoduck (Panopea generosa) outplanting and aquaculture gear on resident and transient macrofauna communities of Puget Sound, Washington* by McDonald et al. *Exhibit 1.1; Exhibit 26, Attachment 2.*

49. The impact of harvest was considered in one of the Sea Grant studies (VanBlaricom et al). The study sites included two geoduck aquaculture plots operated by Taylor Shellfish and one operated by another grower, all within southern Puget Sound. Impacts on 10 frequently sampled organisms were considered, including one known to be an important prey species for juvenile salmonids. There were at least four monthly sampling events prior to harvest, monthly sampling events during harvest, and four monthly sampling events after harvest. The results from the three farmed plots were compared to nearby unfarmed reference plots with similar physical characteristics. The conclusions of the study included the following:

Our study revealed only modest effects on infaunal communities from the harvest phase of geoduck aquaculture operations. Multivariate analyses indicated an absence of significant shifts in community composition (both means and variability) at any of the three study sites as a result of harvesting activities. Similarly, we found little evidence of a significant “spillover” effect of cultured geoduck harvest operations on resident infaunal communities. Univariate analyses of variance provided no evidence of significant impacts of cultured clam harvest on the biodiversity of resident infauna. Of the ten most frequently sampled infaunal taxa, only three indicated evidence of reduction in abundance persisting as long as four months after conclusion of harvest activities. None of the proportionate changes in the three affected species approached local extinction.

Exhibit 1.1, page 26; see also Exhibit 26, Attachment 2. The study authors suggested that the principal reason for insensitivity of resident infauna to the disturbance of geoduck harvest is that they are adapted to significant natural disturbance within the Puget Sound intertidal zone, and that the rate of disturbance from natural causes exceeds disturbance from aquaculture operations. *Exhibit 1.1, pages 27-28; see also Exhibit 10 and Chris Czieszla Testimony.* Similar conclusions were described in the NMFS PBO: “Based on the currently available evidence, the level of benthic disturbance from existing shellfish aquaculture in Washington State is well within the range of normal sediment-disturbing processes ... and that adverse effects are likely to be quite limited in space ... and durationTherefore, we believe that the effects of these existing, new, and expanded aquaculture activities on benthic communities are unlikely to cause large scale impacts to EFH [essential fish habitat].” *Exhibit 2, page 110.*

50. Similar results to those of the VanBlaricom study were reported in *Assessing potential benthic impacts of harvesting the Pacific geoduck clam Panopea generosa in intertidal and subtidal sites in British Columbia, Canada* (Liu et al., 2015). The study – which considered harvest impacts at two sites, a subtidal geoduck farm and an intertidal plot, found no significant benthic impacts from harvest activities. *Exhibit 26, Attachment 4(K)*. However, the study had significant limitations in that the intertidal plot was very small (450 square meters) and did not have geoducks present; the harvest was only simulated. *Exhibit 26, Attachment 4(K); Exhibit 9*.
51. A second Sea Grant study with relevance to the application is *Effects of geoduck (Panopea generosa Gould, 1850) aquaculture gear on resident and transient macrofauna communities of Puget Sound, Washington, USA* (McDonald et al). The objective of the study was to “to assess differences in the abundance and diversity of resident and transient macrofauna at sites with (culture) and without (reference) geoduck aquaculture at distinct phases of the aquaculture sequence (prior to gear addition, gear-present, and after gear removal).” *Exhibit 1.I, page 51*. Three study sites in southern Puget Sound were selected, none of which had previously been used for geoduck aquaculture. Sediment cores were taken to evaluate resident macroinvertebrates, and SCUBA transect surveys were used to evaluate transient fish and macroinvertebrates. With respect to resident macroinvertebrates, the researchers identified 68 species over 63 sampling events, and selected 12 of the most common for analysis. They found that there was no consistent response to aquaculture gear. For two taxa, the abundance decreased in the presence of aquaculture gear and the negative effects were persistent. Two taxa were reduced by gear but then recovered, and three increased during the post-gear period. Two taxa increased while gear was present and went back to pre-gear levels when gear was removed. Three taxa showed no response to geoduck aquaculture activities. With respect to transient fish macroinvertebrate communities, there was no significant difference between the culture plots and reference areas when gear was absent, but when gear was present, over two times more organisms were observed, suggesting that the increased complexity offered by the tubes and nets attracted some species to the habitat. The effects did not persist after the tubes were removed. *Exhibit 1.I, Appendix II; Exhibit 10; Chris Czieszla Testimony*.
52. Project opponents identified several limitations to the Sea Grant studies. With respect to the McDonald study, objections included that the data was collected in 2009-2011, the transient species data from the sites was aggregated (see page 53 of Exhibit 1.I), the analysis only looked at a limited subset of species (12 of 68), and the effects of harvest were not considered. *Exhibits 1.Q, 23H, and 1.I, Appendix II*. With respect to the VanBlaricom study, objections included that only 10 of 50 species identified in the samples were evaluated and that there were numerous disclaimers in the study. *Exhibit 1.Q*. Some of the disclaimers included that it might be inappropriate to project the results to larger temporal or spatial scales in the absence of additional studies, and that the study plots were being used for the first time so that data might not provide a sufficient basis for unequivocal extrapolation to cases in which a plot is exposed to a series of successive geoduck aquaculture cycles. *Exhibit 1.I, page 28; Exhibit 1.Q*. In general, project

opponents argued that the Sea Grant research contains negative or inconclusive findings, that peer-reviewed research on intertidal operations is lacking, that there is insufficient scientific evidence in favor of the proposed geoduck farm, and that the studies submitted are not adequate to satisfy an applicant's burden of proof. *See e.g., Exhibit 4F; Exhibits 8 and 9; Ron Smith Testimony.* Some commenters requested that a moratorium be initiated until further study of the effects of geoduck aquaculture can be conducted. *George Johnston Testimony; Exhibits 4g, 4n, and 24.*

53. Mr. Czesla submitted that the questions and research recommendations contained in the Sea Grant research “are a demonstration of the scientific process, where each new step in research leads to additional questions and new hypotheses to test, and in no way call into question the veracity of their reported results and conclusions.” *Exhibit 26, Attachment 2, pages 2-3.* Mr. Czesla also provided a credible basis for the study designs which use a limited number of species:

In ecological studies, standard study design includes evaluating total species present in the samples and focusing detailed analytical effort on representative species from the various taxonomic groups present. This use of representative species has both statistical, ecological, and practical rationale. From a statistical perspective, the numbers of replicate samples required to produce valid analysis and conclusions is defined by the statistical tests being applied and the resulting confidence intervals, correlation coefficients, and other metrics of significance being reported. That is to say, you need a certain number of samples to develop meaningful conclusions. Ecologically, representative species or genera are used, instead of all identified species, because they exhibit similar life history traits, have similar environmental requirements, and play a similar role in food webs and trophic structure. While practically, representative or grouping of species are used because detailed identification of benthic infaunal organisms (to the species level versus family or genus) is incredibly labor intensive and time-consuming work done via dissecting microscope and requiring a high degree of taxonomic expertise. Therefore, given the similar ecological role of multiple individual species, the need to produce valid statistically defensible results, and the practical limitations of detailed identifications, the Sea Grant studies appropriately focused their efforts on a limited subset of species to reach their conclusions.

Exhibit 26, Attachment 2, page 10.

54. The Sea Grant research on the impacts of geoduck gear and geoduck harvest has been relied on by the Shoreline Hearings Board to uphold a shoreline permit for a geoduck farm. In *Coalition to Protect Puget Sound Habitat v. Pierce County (SHB No. 14-024 (2015))*, the SHB recognized that the studies have limitations, but ultimately concluded that they represent “the most specific and relevant scientific information currently available” on those topics. *Exhibits 1.M, 20, 26, and 26, Attachment 1.*

55. Sea Grant produced another report to the legislature in December of 2015, which contained new research.¹¹ One of the articles – *Evaluating trophic and non-trophic effects of shellfish aquaculture in the central Puget Sound food web* (Ferriss *et al*), later published as *Evaluating trophic and non-trophic effects of shellfish aquaculture in a coastal estuarine food web*, was cited in support of concerns that the anti-predator gear used in geoduck culturing would adversely affect certain species. *See e.g., Exhibits 9 and Exhibit 23.H.* The researchers used a computer model (EcoPath with EcoSim (Ewe)) of Central Puget Sound and modified it to include relationships between geoduck aquaculture and the larger food web. Effects observed in the McDonald research with respect to anti-predator structures were incorporated into the model. The study authors reported that the model indicated that increasing geoduck biomass by 120% over 50 years was associated with increases in biomass in certain groups of wildlife and reductions in other groups of wildlife, including a reduction of roughly 20% for several bird groups. *2015 Sea Grant, p. 22; see also Exhibits 5, 9, and 13.* However, Mr. Czesla’s argument was credible that the modeling does not necessarily represent real-world conditions or real-world thresholds after which certain impacts can be expected to occur, but instead demonstrates that certain species may be more sensitive to increased aquaculture and would be appropriate subjects for empirical research. The modeling was not intended to identify a “cap” on geoduck aquaculture, does not reflect exact quantities of increase or decrease, and was not intended to be used predictively. The study authors concurred with this assessment. *Exhibits 13 and 26; Chris Czesla Testimony.*
56. Sand dollars, which are abundant in south Puget Sound and are also present in the project area, are not expected to be adversely affected by geoduck planting. Mr. Czesla, who has evaluated impacts to sand dollars at other geoduck farms, credibly testified that, while some individual sand dollars might be harmed (for example, if they are stepped on), the overall population density should remain the same after planting. Impacts would be avoided by having workers move sand dollars aside by hand for planting. *Chris Czesla Testimony; Exhibits 1, 1.Y, 19, 20, and 26.*
57. Planning Staff’s recommended conditions of SSDP approval included the following regarding sand dollars: “22. Sand dollars shall not be negatively impacted by preparation or planting of Geoduck.” *Exhibit 1, page 16.* The Applicant requested that the condition be amended to read: “Sand dollar populations shall not be significantly negatively impacted by preparation or planting of Geoduck.” *Exhibit 26.* The Applicant argued that the condition as originally worded suggested a zero-impact standard that would not be possible for geoduck aquaculture or any other activity to reach. *Exhibit 26.*
58. The only species of forage fish known to spawn near the project area is the surf smelt, which spawn on sands and small gravel in the high intertidal zone at +7 mean lower low water (MLLW). The geoducks would be planted between +1 and -4.5 feet MLLW, a location that is vertically and horizontally separated from the potential spawning area.

¹¹ <https://wsg.washington.edu/wordpress/wp-content/uploads/Shellfish-Aquaculture-Washington-State.pdf> (referenced in Exhibit 9).

Access to the farm area would be by boat and would avoid crossing the spawning area. The project would comply with the conditions of the programmatic consultation, which require a surf smelt spawn survey prior to conducting bed preparation, maintenance, and harvest activities in or adjacent to potential spawning habitat if the work occurs outside of the approved work window for the species. *Exhibit 10; Exhibit 26, Attachments 2 and 4(E); Chris Czesla Testimony.*

59. One issue of concern raised in public comment on the application was that the geoducks might ingest juvenile or larval forage fish. This has been demonstrated in other species of clams. *Exhibit 6; Deborah Hall Testimony.* Mr. Czesla provided credible evidence that ingestion - while possible - would be uncommon because the geoducks are selective filter feeders, and the larval fish are significantly larger (at 3,000 microns) than the food particles typically consumed by geoducks (1-15 microns). Most larval fish would be too large and would be rejected by the geoduck. In addition, a geoduck filters water located within a few centimeters of its siphon (at +1 to -4.5 MLLW), whereas the larval surf smelt would be entering the water at +7 MLLW or greater. *Exhibits 10 and 26; Chris Czesla Testimony.*
60. One of the concerns raised in public comment on the application was that the project could have genetic impacts on wild geoducks. The topics the state legislature requested Sea Grant to research included the genetic interactions between cultured and wild geoducks, and whether use of sterile triploid geoducks would diminish the genetic interactions. These topics were not addressed in the research that occurred, and the Sea Grant final report identifies genetics as an issue warranting future research. *Exhibits 1.I; 8, and 23H; David Bricklin argument.* Addressing this concern, Applicant witnesses testified that Taylor Shellfish collects wild geoduck seed for use in its nurseries. Also, the Washington Department of Fish and Wildlife (WDFW) regulates the transfer of geoduck seeds and has issued a transfer permit to the Applicant approving their best management practices to reduce genetic risks to wild stocks. Parasites have not been shown to transfer from farm to farm. According to the Washington Department of Natural Resources, while there are 44,000 acres of wild geoduck in Washington State and fewer than 500 acres in farmed geoduck, meaning cultivated geoducks represent 1% by mass and 3% of total annual geoduck harvest. *Exhibit 26, Attachment 1; Erin Ewald Testimony.*

Water Quality

61. The presence of shellfish such as geoducks can improve water quality by removing anthropogenic nutrient contributions (such as runoff from agricultural uses and lawn management) through filtration of phytoplankton. When geoducks are harvested, large amounts of nitrogen are removed from the culture area. *Exhibit 10; Chris Czesla Testimony.* Project opponents discounted this effect from geoducks, arguing that the water in the location of the proposed aquaculture operation is already sufficiently clean so as not to “benefit” from filter feeding. *Exhibit 6; Testimony of Dr. Ron Smith and George Johnston.*

Recreation, Navigation, and Visual Effects

62. The proposal is not expected to adversely affect water access to residential parcels or recreational boating. The lease area has been professionally surveyed and the corners would be marked prior to planting. The horizontal distance between the planting area and the nearest property line would be approximately 15 feet, and the vertical distance between the planting area and the nearest property line would be approximately 10 feet. The flexible mesh tubes would extend only a few inches above the ground surface and would have the ability to lie flat against the ground surface both during wave action and when exposed at low tide. Watercraft could thus pass over the tubes if the tide is sufficiently high. The Applicant submitted, and offered legal precedent supporting the position, that there is not a public right of access to the privately owned tidelands when they are exposed at low tide. Addressing visual impacts, the proposed mesh tubes would only be present for a portion of the crop cycle and would not be visible for the majority of the time they are present. They would be neutral in color, arranged in an orderly manner, and would become covered in plant and animal materials, causing the tubes themselves not to be visible in a relatively short period of time. *Exhibits 18 (slide 11), 26, 26, Attachment 1, and 26, Appendix 5.*
63. With respect to impacts to access and recreation for shoreline residents, comments were received from a shoreline resident to the south of the project area (Tonni Johnston) arguing that she would not be able to navigate her catamaran and outboard motorboat without entanglement in the geoduck gear. However, Ms. Johnston's property is nearly a quarter mile south of the project area¹², and comments opposing the project failed to demonstrate that tubes at such distance would prevent access to and from her property or recreational usage of Puget Sound. *Exhibit 22; Tonni Johnston Testimony.* Only three parcels, representing two households, are immediately adjacent to and upland of the project area such that water access might be an issue of concern, and comments were received from only one of them. *Exhibit 26, Appendix 4.*
64. One property owner located adjacent to the project area, David Hall, plants oysters in a small hobby garden and hosts a beach education program in conjunction with Thurston Conservation District and South Sound Green Program. Visitors arrive by car or bus via a beach access to the south of Mr. Hall's property. Mr. Hall is concerned that the project would prevent continued access to and operation of the educational program, due to the presence of geoduck gear in the tidelands and potential safety issues associated with commercial operations. *Exhibit 25; Exhibit 1.C1.* The precise spatial relationship between the proposal and Mr. Hall's educational activities is not clear from the submitted materials, but Mr. Hall's testimony suggested that access to the location requires visitors to walk through the proposed planting area. *Exhibit 25; David Hall Testimony.*

¹² Based on the map provided by the Applicant in Exhibit 26, Appendix 4, Thurston County GeoData Center mapping, and Google Maps, Ms. Johnston's parcel is immediately south of the Smith parcel depicted on Exhibit 26, Appendix 4, a distance of 1,250 feet.

Other

65. There was significant public comment requesting that the permit be denied for lack of community benefit, for reasons including the following: the fact that most geoduck are exported to overseas markets; the difference in property tax burden between the subject parcel and neighboring residential parcels; and the burdens placed on homeowners within the Henderson Inlet Shellfish Protection District to maintain good water quality for shellfish, which the project opponents argue will be harmed by the addition geoduck gear. *See e.g., Exhibit 23C; Testimony of George Johnston, Dr. William Rues.*
66. Responding to these concerns, County Planning Staff indicated that the export of the farmed product, property taxation issues, adjacent property owner burdens related to protection of Henderson Inlet water quality are not things contemplated in the criteria for SSDP review and approval. *Scott McCormick Testimony; Exhibit 27.*
67. Addressing public questions and concerns, the Applicant offered information from the Washington Shellfish Initiative indicating that shellfish are critical to the health of Washington's marine waters and the state's economy.¹³ According to a 2016 publication by that entity, at that time Washington led the nation in farmed shellfish production, with approximately 10,500 metric tons of oysters, clams and mussels harvested in 2013, contributing \$184 million in economic benefits, employing more than 1,900 people and creating 810 indirect and induced jobs across the state. *Exhibit 26, Attachments F and G.* As stated by the Applicant, the instant farm would *create farm crew, diver, farm manager, and processor jobs*. Taylor employees are paid livable wages and benefits. The Applicant submitted that this is consistent with the SMPTR acknowledgement that shellfish farming strengthens and diversifies the local economy, and it is encouraged use for this reason (citing SMPTR p. 39, Thurston County Comp Plan p. 9). The Applicant indicated that shellfish from the farm site would be sold in domestic and international markets, and that foreign sales help address the national seafood trade deficit, stated to range from \$17 to \$20 billion dollars. *Exhibits 26, Attachments 4, D, and E.* The Applicant submitted written responses to public comment offered prior to, during, and after the public hearing. *Exhibits 26 and 26, Attachments 1, 2, 3, 4, D, and E.*

CONCLUSIONS

Jurisdiction

The Hearing Examiner has jurisdiction to decide substantial shoreline development applications pursuant to TCC 2.06.010(C), RCW Chapter 36.70, WAC 173-27, and Section One, Part V of the Thurston County Shoreline Master Program.

Criteria for Review

Pursuant to WAC 173-27-150, in order to be approved by the Hearing Examiner, a

¹³ The Washington Shellfish Initiative is a partnership among Washington state government agencies, the federal government, tribes, the shellfish industry, and non-profit organizations to promote clean water commerce, create family-wage jobs, and elevate the role that shellfish play in keeping our marine waters healthy. <https://www.fisheries.noaa.gov/west-coast/aquaculture/washington-shellfish-initiative>

shoreline substantial development permit application must demonstrate compliance with the following:

1. The policies and procedures of the Shoreline Management Act;
2. The provisions of applicable regulations; and
3. The Shoreline Master Program for the Thurston Region.

1. Shoreline Management Act

Revised Code of Washington (RCW) Chapter 90.58, the Washington State Shoreline Management Act (SMA) of 1971, establishes a cooperative program of shoreline management between the local and state governments with local government having the primary responsibility for initiating the planning required by the chapter and administering the regulatory program consistent with the Act. The Thurston County Shoreline Master Program (SMPTR) provides goals, policies, and regulatory standards for ensuring that development within the shorelines of the state is consistent with the policies and provisions of Chapter 90.58 RCW.

The policy of the Shoreline Management Act is as follows:

It is the policy of the state to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses. This policy is designed to insure the development of these shorelines in a manner which, while allowing for limited reduction of rights of the public in navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse effects to the 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.

RCW 90.58.020.

With respect to shorelines of statewide significance, the SMA mandates that local governments adopt shoreline management programs that give preference to uses that (in the following order of preference): recognize and protect the statewide interest over local interest; preserve the natural character of the shoreline; result in long term over short term benefit; protect the resources and ecology of the shoreline; increase public access to publicly owned areas of the shorelines; and increase recreational opportunities for the public in the shoreline.¹⁴

In implementing shoreline policy, the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state is to be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally. To this end, uses that are consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state's shoreline, are to be given preference. *RCW 90.58.020.*

¹⁴ There is no indication in the record that the subject tidelands are located on a designated shoreline of statewide significance.

2. Applicable regulations from the Washington Administrative Code

WAC 173-27-140 Review criteria for all development.

- (1) No authorization to undertake use or development on shorelines of the state shall be granted by the local government unless upon review the use or development is determined to be consistent with the policy and provisions of the Shoreline Management Act and the master program.
- (2) No permit shall be issued for any new or expanded building or structure of more than thirty-five feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where a master program does not prohibit the same and then only when overriding considerations of the public interest will be served.

WAC 173-27-150

- (2) Local government may attach conditions to the approval of permits as necessary to assure consistency of the project with the act and the local master program.

WAC 173-27-190 Permits for substantial development, conditional use, or variance.

- (1) Each permit for a substantial development, conditional use or variance, issued by local government shall contain a provision that construction pursuant to the permit shall not begin and is not authorized until twenty-one days from the date of filing as defined in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within twenty-one days from the date of such filing have been terminated; except as provided in RCW 90.58.140 (5)(a) and (b).

3. Shoreline Master Program for the Thurston Region

SMPTR Section Two, V, Regional Criteria

- A. Public access to the shorelines shall be permitted only in a manner which preserves or enhances the characteristics of the shoreline which existed prior to establishment of public access.
- B. Protection of water quality and aquatic habitat is recognized as a primary goal. All applications for development of shorelines and use of public waters shall be closely analyzed for their effect on the aquatic environment. Of particular concern will be the preservation of the larger ecological system when a change is proposed to a lesser part of the system, like a marshland or tideland.
- C. Future water-dependent or water-related industrial uses shall be
- D. Residential development shall be undertaken in a manner that will maintain existing public access....
- E. Governmental units shall be bound by the same requirements as private interests.
- F. Applicants for permits shall have the burden of proving a proposed substantial development is consistent with the criteria which must be met before a permit is granted. In any review of the granting or denial of an application for a permit as provided in RCW 90.58.18.180(1), the person requesting the review shall have the burden of proof.

- G. Shorelines of this Region which are notable for their aesthetic, scenic, historic, or ecological qualities shall be preserved. Any private or public development which would degrade such shoreline qualities shall be discouraged. Inappropriate shoreline uses and poor quality shoreline conditions shall be eliminated when a new shoreline development or activity is authorized.
- H. Protection of public health is recognized as a primary goal. All applications for development of use of shorelines shall be closely analyzed for their effect on the public health.

SMPTR Section Three, II, Aquacultural Activities

A. Scope and Definition

Aquaculture involves the culture and farming of food fish, shellfish, and other aquatic plants and animals in lakes, streams, inlets, bays, and estuaries. Aquacultural practices include the hatching, cultivating, planting, feeding, raising, harvesting, and processing of aquatic plants and animals, and the maintenance and construction of necessary equipment, buildings, and growing areas. Methods of aquaculture include but are not limited to fish hatcheries, fish pens, shellfish rafts, racks, and longlines, seaweed floats and the culture of clams and oysters on tidelands and subtidal areas.

B. Policies

1. The Region should strengthen and diversify the local economy by encouraging aquacultural uses.
2. Aquacultural use of areas with high aquacultural potential should be encouraged.
3. Flexibility to experiment with new aquaculture techniques should be allowed.
4. Aquacultural enterprises should be operated in a manner that allows navigational access of shoreline owners and commercial traffic.
5. Aquacultural development should consider and minimize the detrimental impact it might have on views from upland property.
6. Proposed surface installations should be reviewed for conflicts with other uses in areas that are utilized for moorage, recreational boating, sport fishing, commercial fishing, or commercial navigation. Such surface installations should incorporate features to reduce use conflicts. Unlimited recreational boating should not be construed as normal public use.
7. Areas with high potential for aquacultural activities should be protected from degradation by other types of uses which may locate on the adjacent upland.
8. Proposed aquacultural activities should be reviewed for impacts on the existing plants, animals, and physical characteristics of the shorelines.
9. Proposed uses located adjacent to existing aquaculture areas which are found to be incompatible should not be allowed.

C. General Regulations

1. Aquaculture development shall not cause extensive erosion or accretion along adjacent shorelines.
2. Aquacultural structures and activities that are not shoreline dependent (e.g., warehouses for storage of products, parking lots) shall be located to minimize the detrimental impact to the shoreline.
3. Proposed aquaculture processing plants shall provide adequate buffers to screen operations from adjacent residential uses.
4. Proposed residential and other developments in the vicinity of aquaculture operations shall install drainage and waste water treatment facilities to prevent any adverse water quality impacts to aquaculture operations.
5. Land clearing in the vicinity of aquaculture operations shall not result in offsite erosion, siltation or other reductions in water quality.
6. For non-aquacultural development or uses proposed within or adjacent to an Aquacultural District
7. Establishment of Aquacultural District. Due to the importance of aquaculture to the Thurston County economy and the unique physical characteristics required to initiate or continue operation, this section allows the establishment of an Aquacultural District.

Conclusions Based on Findings

1. As conditioned, the proposal is consistent with the policies and procedures of the SMA. As the Shoreline Hearings Board has acknowledged, the Washington State Legislature has identified aquaculture as an activity of statewide interest that is a preferred, water-dependent use of the shoreline, which when properly managed can result in long-term over short-term benefits and protect the ecology of the shoreline. Aquaculture is allowed outright in the underlying zoning district and in the Conservancy shoreline environment following review for compliance with applicable provisions in the Shoreline Master Program for the Thurston Region. With the conditions contained in the MDNS and in this decision, and those required by state and federal agencies with jurisdiction, the proposal would be consistent with the policies of the SMA and would be a reasonable and appropriate use of the shoreline. On balance (and as discussed more fully in additional conclusions below), the evidence in the record supports the conclusion that the proposed aquaculture gear – flexible HDPE mesh tubes followed by area nets for portions of each grow cycle – is not a significant contributor to microplastics or chemical contamination of the environment by “leaching” that results in detriment to human health or the health of marine species. Credible evidence in the record supports the conclusion that the aquaculture activities would not result in take of, or significant adverse impacts to, any species of wildlife that is listed as protected under the Endangered Species Act. The undersigned is not persuaded by project opponents’ assertion that the SMPTR contains a no net loss standard for shoreline substantial development permit approval; nonetheless, to the extent that “no net loss” is determined by a reviewing body to apply to

the instant project, the record submitted supports a conclusion that approval would not result in net loss of shoreline ecological functions and values. The farm site would be outside of sensitive habitats, and this approval incorporates conservation measures and best management practices which when applied avoid and minimize potential adverse impacts. As conditioned, installation and operation of the proposed geoduck farm would not result in adverse effects to public health, the land, vegetation, or wildlife. *Findings 2 - 14, 17 - 22, 25 - 41, and 43 - 67.*

2. As conditioned, the proposal is consistent with the applicable shoreline regulations in the Washington Administrative Code. The proposal has received thorough review by the County as described herein, consistent with WAC 173-27-140(3). No structure greater than 35 feet in height is proposed. Conditions of approval have been imposed by the local government in the instant decision consistent with WAC 173-27-140(4) and WAC 173-27-150(2), including a condition added to ensure that final Department of Ecology approval is obtained prior to the commencement of physical alterations to the shoreline as required by WAC 173-27-190. The proposed farm would be consistent with State shoreline regulations that express a preference for water-dependent uses that utilize the shoreline for economically productive uses and protect the ecological functions of shorelines as required in WAC 173-26-176(3). *Findings 9, 10, 11, 12, 13, 14, 20, 31, 32, 46, 57, and 58.*
3. As conditioned, the proposal is consistent with the applicable provisions of the County's SMP, the Shoreline Master Program for the Thurston Region, in effect at the time of complete application as discussed below.

A. Regional Criteria

- 1) The proposal does not include new public access to the shoreline. The record supports the conclusion that the geoduck farm as conditioned would not alter existing public access to the shoreline. *Findings 9, 10, 11, 12, 13, 14, 20, 31, 32, 46, 57, and 58, 62, and 64.*
- 2) As conditioned, the proposal would comply with the Programmatic Consultation, which based on the most credible scientific evidence in the record would ensure protection of marine water quality and habitat. Following 2007 legislative direction, Washington Sea Grant issued its final geoduck aquaculture report in November 2013, concluding geoduck aquaculture results in limited disruptions within the range of natural variation to benthic communities in the Sound. Conclusions specifically included the following: geoduck harvest practices cause minimal impact to benthic communities, with no observed "spillover effect" in habitats adjacent to cultured plots; and differences between planted areas containing geoduck gear and nearby control areas do not remain during or after the grow out phase. The Shoreline Hearings Board has recognized Washington Sea Grant as the most specific and relevant scientific authority on the environmental impacts of geoduck farming. As proposed and conditioned, the proposed farm would comply with the current version of the Washington State Environmental Codes of Practice for Pacific Coast Shellfish

Aquaculture, which require (among other items) locating geoduck aquaculture activities away from eelgrass, kelp, and documented forage fish spawning habitat and routine inspection of gear while installed. While public comment contained extensive concerns about the lack of studies conclusively addressing microplastics and contamination resulting from the interaction of geoduck gear with the marine environment, these critiques of the existing science do not themselves amount to evidence of the asserted concerns. On balance, the record supports the conclusion that geoduck aquaculture gear in South Puget Sound is not a significant source of microplastic pollution resulting in environmentally significant harm to the marine environment or human health. *Findings 9, 10, 11, 12, 13, 14, 20, 25 - 41, and 43 - 61.*

- 3) Regional criterion C is not applicable because industrial use is not proposed.
- 4) Regional criterion D is not applicable because no residential use is proposed.
- 5) Regional criterion E is not applicable because the Applicant is not a governmental unit.
- 6) As described in these conclusions as a whole, the undersigned is persuaded the Applicant has met its burden of proving that the criteria for SSDP approval are satisfied. *Findings 6 - 67.*
- 7) The subject shoreline is not notable for aesthetic, scenic, historic, or ecological qualities. On the record submitted, it does not contain eelgrass, rooted kelp, or cultural resources. *Findings 3, 5, 6, 8, 22, and 43 - 46.*
- 8) The proposal was reviewed by the County Public Health and Social Services Department, Environmental Health Division, which agency found no concerns. As concluded above, the record supports the conclusion that the proposed farm, including the use of geoduck aquaculture gear in South Puget Sound, would not be a significant source of microplastic pollution and would not result in significant harm to the marine environment or to human health. *Findings 21 and 25 - 41.*

B. Aquaculture Activity Policies

- 1) Approval of the proposal is consistent with aquaculture policy number 1, to strengthen and diversify the local economy by encouraging aquaculture uses in that would further the objectives of a local shellfish farming company, produce shellfish for local use and international export, create local jobs, provide revenue for tideland property owners, and increase tax revenues. *Findings 65, 66, and 67.*
- 2) Consistent with aquaculture policy number 2, the subject tidelands are comprised of a muddy, sandy, gravelly substrate with no structures, no eelgrass, no kelp, and no forage fish habitat. The project area possesses high aquacultural potential due to

good water quality and appropriate beach characteristics. *Findings 3, 5, 6, 8, 9, 20, 21, 43 - 47, 51, and 56 - 59.*

- 3) The proposed use of flexible mesh tubes is a relatively recently adopted geoduck culturing technique. Based on the record, PVC pipe was historically the more common geoduck nursery gear material. Although some members of the public expressed concern that there are no studies specifically evaluating impacts associated with flexible mesh HDPE tubes, aquaculture policy 3 - which allows flexibility to experiment with new aquaculture techniques - suggests that such studies are not a necessary prerequisite to approval. Even without studies specific to flexible mesh tubes, the Applicant's evidence was credible that the use of flexible mesh tubes would not introduce untested materials into the marine environment and would be protective of shoreline ecology, offering significant benefits over PVC tubes. There would be less plastic in the shoreline environment by volume, less accretion of sediment, less potential conflict with navigation, a reduced potential for tubes to become dislodged, elimination of individual tube netting, and a reduced requirement for area netting. The process of installing mesh tubes results in less impact to the substrate and thus less direct benthic organisms at the time of geoduck planting. In addition, the flexible mesh tubes, while still plainly visible from upland properties, would be less visually conspicuous than the solid, white PVC tubes. The use of mesh tubes further reduces visual impacts to those observing the operation in that there is no need for barges of PVC tubes to be stationed at the farm during planting and harvest activities; all materials can be transported to and from the site with workers during active planting. For these reasons, approval of the technique is appropriate. *Findings 10 - 13, 27, 28, 30, 31, and 62.*
- 4) Consistent with aquaculture policy number 4, the use would be operated in a manner that allows navigational access by shoreline owners, visitors, and commercial traffic. Navigational access of shoreline owners is of particular concern in this case because the owner of the subject tidelands does not also own the adjacent residential parcels. However, the Applicant has demonstrated that the use would not prevent navigational access. The flexible mesh tubes, which only extend a few inches above the substrate when underwater, have the ability to flatten against the substrate when the tide is out and with wave action, allowing watercraft to pass over. The vertical separation between the project area and adjacent properties is approximately 10 feet. Although members of the public maintain that the farm would interfere with both seagoing vessels and pedestrian access to the shoreline environment, the record shows that the farm footprint would be setback at least 15 feet from the subject parcel's exterior boundaries, such that in low water conditions concerned boaters would be able to navigate around the farm to access the shoreline. Geoduck aquaculture gear would only be in place on the beach for a portion of each cultivation cycle. *Findings 6, 9 - 14, and 62 - 64.*
- 5) Consistent with aquaculture policy number 5, detrimental impacts on views from upland properties have been considered and minimized. The proposed flexible mesh

tubes would be less conspicuous than the solid white PVC tubes. The tubes would only be present for a maximum of 2.5 years during each growing cycle. Being underwater, they would not be visible at high tide. As shown in photos in the record, with time they would become biofouled, such that at low tides the sight of the manmade materials would be obscured by plants and animals living upon them. The conditions of the MDNS prohibit permanent lighting of the aquaculture beds and require the Applicant to patrol the area beaches regularly for debris. A condition has been added requiring the Applicant to monitor the farm area for debris at the same schedule as described for existing farms in the region, which is approximately once every two weeks as well as after every storm event, which would effectively reduce the potential for escaped gear resulting in unsightly marine debris visible to neighbors and visitors. *Findings 9 - 13, 20, 30, 31, and 62 - 64.*

- 6) Consistent with aquaculture policy number 6, the project has been reviewed for conflict with recreational and commercial uses and the proposal incorporates features (flexible mesh tubes) to reduce use conflicts. No evidence was presented that the proposal is near a public park or boat launch, or that the area is used for commercial shipping. The use would not prevent recreational use of the shoreline by adjacent property owners. As described previously, the flexible mesh tubes would extend only a few inches above the substrate and have the ability to lie flat against the substrate, allowing watercraft to pass over. The vertical separation between the project area and adjacent properties would be approximately 10 feet. The public's argument about the farm limiting their access to the privately owned tidelands when exposed at low tide was not supported by legal authority demonstrating they are entitled to access to the farm site when it is not submerged.¹⁵ As stated expressly in the SMPTR policy, unlimited recreational boating is not to be construed as normal public use. The undersigned is persuaded that the farm's interruption - if any - to recreational shoreline access would fall within that acknowledged by policy number 6. *Findings 6, 9 - 14, and 62 - 64.*
- 7) With respect to aquaculture policy number 7, the upland parcels are already developed with residential uses and such development does not threaten the proposed use, as the water quality meets Department of Health standards for shellfish aquaculture. *Findings 3, 5, and 21.*
- 8) Consistent with aquaculture policy number 8, the proposal has been thoroughly reviewed for impacts to the existing plants, animals, and physical characteristics of the shoreline, and on balance, the record supports approval of the shoreline permit.

¹⁵ As cited by the Shoreline Hearings Board in *in matter of Coalition to Protect Puget Sound Habitat v Pierce County, Taylor Shellfish, and Seattle Shellfish*, SHB No. 14-024: "The Washington Supreme Court has held that shellfish growers farming on private tidelands, whether owned or leased, are entitled to exclusive possession and control of such tidelands and the shellfish grown on them. *State v. Longshore*, 141 Wn.2d 414, 424-429, 5 P.3d. 1256 (2000). A shellfish grower's right to exclusive possession includes the right to exclude the public from such tidelands when they are not submerged. *Wilbur v. Gallagher*, 77 Wn.2d 306, 314, 462 P.2d 232 (1996)." *Exhibit 20.*

Of crucial importance is the fact that the project area does not contain eelgrass. While there was much objection to the eelgrass survey that was performed in this case, there was no credible evidence supporting the inference that a more extensive survey performed by a third-party would yield a different result. The nearest documented eelgrass is a significant distance away, no witness alleged seeing it in the near vicinity of the subject property¹⁶, and eelgrass is not common in southern Puget Sound. Consequently, despite the importance of eelgrass to the shoreline environment, a new eelgrass survey is not warranted in this case. With respect to impacts to wildlife, the NMFS and ACOE ESA consultation documents and the Sea Grant research support a conclusion that impacts of the proposed farm on protected species would be minimal, particularly given the lack of eelgrass in the project area. Although project opponents posited several limitations to the Sea Grant research, the Hearing Examiner finds, similar to the Shoreline Hearings Board in *Coalition to Protect Puget Sound Habitat v. Pierce County*, that the Sea Grant studies represent “the most specific and relevant scientific information currently available (see Exhibit 20).” With respect to forage fish, the project area is well below the tidal elevation of the surf smelt spawning area, access to the project area would be by water and not from the upper beach meaning no gear or personnel would physically cross the spawning area, and the project would be subject to conservation measures requiring a spawn survey to be conducted prior to bed preparation, maintenance, and harvest activities if work occurs outside of the approved work window for the species. Addressing concern for impacts to sand dollars, credible evidence in the record demonstrates that sand dollar populations can and do coexist with geoduck aquaculture without population-level impacts. With respect to general impacts to the physical characteristics of the shoreline, the effects of harvest are limited in duration, with recovery occurring within two to three tidal cycles. However, the conditions as recommended by Planning Staff require modification to ensure that the approval is in alignment with the proposal described through the hearing process. The modified conditions in this decision are explicit that the maximum approved tidal elevation for project activities is +1MLLW, that this maximum tidal elevation must be marked in the field, that the Applicant must comply with the forage fish protection measures of the programmatic consultation, and that sand dollars must be moved by hand and not by mechanical means during planting and harvest. *Findings 6, 8, 9 - 14, 16 - 20, 25 - 41, 42 - 60, and 61.*

- 9) The proposal is for a new aquaculture use, and it is not adjacent to an existing aquaculture use. Consequently, aquaculture policy number 9 is not applicable.

C. Aquaculture general regulations:

- 1) Consistent with general regulation number 1, the proposed aquaculture development would not cause extensive erosion or accretion along adjacent shorelines. The proposed use of flexible mesh tubes would minimize the potential

¹⁶ One commenter submitted Google Maps aerial imagery of the shoreline and submitted that the green color visible in the imagery indicated the presence of eelgrass, but the Hearing Examiner does not consider that to be evidence of eelgrass. Other shoreline vegetation has been documented on the site.

for accretion because sediment flows through the mesh. Physical changes to the shoreline resulting from harvest would be limited in duration. Because this decision is based on the use of flexible mesh tubes, a condition of approval has been added prohibiting the use of PVC tubes unless the Applicant obtains approval of an amended permit. *Findings 9 - 14 and 49 - 57.*

- 2) Only shoreline-dependent activities are proposed. General regulation number 2 is inapplicable.
 - 3) No aquaculture processing plants are proposed. General regulation number 3 is inapplicable.
 - 4) No residential development is proposed, and upland properties are already developed. General regulation number 4 is inapplicable.
 - 5) No land clearing is proposed. General regulation number 5 is not applicable.
 - 6) Only aquacultural development is proposed. General regulation number 6 does not apply.
 - 7) No Aquacultural District is proposed. General regulation number 7 is inapplicable.
4. Project opponents offered a coordinated and multipronged critique of the currently available science and asked that, based on their assessment of its inadequacy and/or inconclusively, the instant geoduck aquaculture operation not be approved. Several of the project opponents have scientific backgrounds, including several medical doctors and at least one bachelor's degree in chemistry; however, none of them provided evidence of having had marine biology, environmental science, or toxicology education or professional experience. Because of this lack of subject matter expertise, their critiques of the studies relied upon by the Applicant, and by the shellfish industry as a whole, are relatively less persuasive than are the opinions of the Applicant's expert witnesses who in addition to education in the directly applicable fields of marine biology and toxicology have approximately 30 years professional experience each. Further, opponents' critiques are not backed by scientific evidence demonstrating the adverse impacts they allege that is sufficient to overcome the scientific evidence submitted by the Applicant. The project opponents are asking that, based on their critiques, a local government permit decision maker should set aside the body of scientific evidence that has been accepted as adequate and relied upon by the Washington State Legislature, the Shoreline Hearings Board, the US Army Corps of Engineers, and the National Marine Fisheries Service. Some commenters even suggested that all geoduck permits should be paused, such as by moratorium, until more complete scientific evidence of impacts is available. To this last point, clearly a county hearing examiner lacks authority to impose a moratorium on a local much less a statewide level. Such an action is reserved to legislative bodies. Based on the record as a whole, the undersigned is persuaded that, on balance, the scientific

evidence presented succeeds in demonstrating the proposed geoduck aquaculture operation would not have impacts to the subject tidelands, the surrounding marine environment, or to public health that would be inconsistent with the Shoreline Management Act or the Shoreline Master Program for the Thurston Region. *Findings 24 - 67.*

DECISION

Based on the preceding findings and conclusions, the requested shoreline substantial development permit is **APPROVED** subject to the following conditions.

1. The proposed project must be consistent with all applicable policies and other provisions of the Shoreline Management Act, its rules, and the Shoreline Master Program for the Thurston Region.
2. Prior to planting, the Applicant shall provide to Thurston County Community Planning and Economic Development Department (CPED) written confirmation from FEMA that a FEMA Habitat Assessment is not required for the project.
3. The preparation, planting, maintenance and harvesting at the subject site shall be in compliance with the most current version of the Washington State Geoduck Growers Environmental Codes of Practice for Pacific Coast Shellfish Growers Association.
4. An unobtrusive but visible sign shall be placed at each aquaculture bed listing the name and contact information for a person designated to immediately address problems associated with the aquaculture bed when discovered by a citizen or agency representatives. This condition may be satisfied by providing the required contact information on buoys or corner markers.
5. Shellfish culturing shall not occur within 16 horizontal feet of eelgrass (*Zostera marina*) or rooted kelp.
6. All protective tubes and netting related to the proposed Geoduck aquaculture shall be removed from the subject tidelands to an appropriate upland location as soon as they are no longer needed to perform protective functions, and in no case later than two and one-half (2.5) years from installation.
7. Shellfish culturing shall not occur above the tidal elevation of +1 MLLW.¹⁷
8. Vehicles and equipment shall not be washed, stored, fueled, or maintained within 150 feet of any waterbody. All vehicles shall be inspected for fluid leaks daily within 150 feet of any waterbody.

¹⁷ Mean Lower Low Water

9. Permanent lighting of the aquaculture beds is not permitted. Any temporary lighting shall be directed such that off-site glare is minimized to the extent possible.
10. [stricken]¹⁸
11. If archaeological artifacts are observed during any phase of the aquaculture operation, all work shall be immediately halted. The State Department of Archaeology and Historic Preservation, the Thurston County Community Planning and Economic Development Department and affected Tribes shall be contacted to assess the situation prior to resumption of work.
12. No physical work on the beds shall be initiated until the Applicant obtains all required local, State, and Federal permits and/or approvals. On site physical farm preparation pursuant to this permit shall not begin and is not authorized until twenty-one days from the date of filing as defined in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within twenty-one days from the date of such filing have been terminated; except as provided in RCW 90.58.140 (5)(a) and (b).
13. All tubes, area nets, and other gear used in the intertidal geoduck aquaculture operation shall be clearly, permanently marked to identify the permittee name and contact information (e.g., telephone number, email address, and mailing address). On area nets, if used, identification markers will be placed with a minimum of one identification marker for each 100 square feet of net.
14. Boundary Markers: Leasehold boundary corners shall be assigned GPS coordinates during the land survey. Corner markers shall be in place during site preparation and planting. They may be removed during the grow out period, but the corner marker positions must be replaced at the GPS coordinates recorded by the land surveyor prior to any harvest activities, and they must remain in place during harvest activities. Rebar shall not be used for markers. In order to ensure the proposed vertical separation between the culture area and the surf smelt spawning area/the nearest residential property lines is maintained, if the upper culture elevation allowed by this decision (+1 MLLW) is waterward of the eastern leasehold boundary, the upper culture elevation shall also be marked in the field prior to planting. The +1 MLLW markers may be removed after planting is complete and replaced prior to harvest.
15. The Applicant shall install tubes or other predator exclusion devices in straight rows or blocks that are orderly as viewed by upland observers.
16. Whenever possible, the farm shall use tubes colored to blend into the surrounding environment.


¹⁸ No individual screens are proposed or possible for the mesh tubes that are under consideration.

17. No seeding, culture, or other operations are to be done in biologically sensitive areas of the beach such as herring or smelt spawning grounds.
18. No materials should escape from the farm. Every effort must be made to ensure that tubes, nets, and fasteners do not wash off the farm area. The Applicant shall patrol area beaches on a regular basis - at least once every two weeks - while any gear is in place to retrieve gear that escapes the farm as well as other non-natural debris. Areas where debris tends to accumulate due to wave, current, or wind action shall be identified early in the growing cycle, and crews shall patrol these areas after strong weather events to pick up debris.
19. Noise from equipment or personnel engaged in the operation shall not rise to the level of persistently annoying as reported by any nearby property owner. Although this level of noise is subjective, the County will investigate and may require appropriate mitigation. Additionally, noise from machinery and equipment shall not exceed 60 decibels at the property line during daylight hours and 50 decibels from 10:00 PM to 7:00 AM as limited by WAC 173-60-040.
20. Washington State Water Quality Laws, Chapter 90.48 RCW, Water Pollution Control and WAC 173-201A, Water Quality Standards for Surface Waters of the State of Washington, define quality of state waters. Any discharge of sediment-laden runoff or of other pollutants to waters of the state is in violation of these state laws and may be subject to enforcement action.
21. Bed preparation must commence within two years and all tubes must be installed within five years of the effective date of this permit. The effective date is the date of the last action required on the shoreline permit and all other government permits and approvals that authorize the development to proceed.
22. Every effort shall be made to prevent injury to sand dollars. If sand dollars must be moved to avoid conflict with tube installation or removal, sand dollars shall be moved by hand the minimum distance necessary to allow tube placement. In no case shall mechanical means be used to clear the planting area. In no event shall aquaculture activities be conducted in a manner that results in significant adverse effects on sand dollar populations.
23. All activities related to the proposed geoduck bed shall be in substantial compliance with the site plans and application materials in the record as modified by this approval. Any expansion or alteration of this use shall require approval of a new or amended shoreline substantial development permit as determined by the Community Planning and Economic Development Department.
24. Any revision to the shoreline permit must be in compliance with WAC 173-27-100.

25. A construction stormwater permit from the Washington State Department of Ecology may be required. Information about the permit and the application can be found at: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/permit.html>. It is the Applicant's responsibility to obtain this permit if required.

26. No PVC tubes shall be used in the approved geoduck aquaculture operation.

Decided February 20, 2024.



Sharon A. Rice
Thurston County Hearing Examiner

THURSTON COUNTY
PROCEDURE FOR RECONSIDERATION AND APPEAL
OF HEARING EXAMINER DECISION TO THE BOARD

NOTE: THERE MAY BE NO EX PARTE (ONE-SIDED) CONTACT OUTSIDE A PUBLIC HEARING WITH EITHER THE HEARING EXAMINER OR WITH THE BOARD OF THURSTON COUNTY COMMISSIONERS ON APPEALS (Thurston County Code, Section 2.06.030).

If you do not agree with the decision of the Hearing Examiner, there are two (2) ways to seek review of the decision. They are described in A and B below. Unless reconsidered or appealed, decisions of the Hearing Examiner become final on the 15th day after the date of the decision.* The Hearing Examiner renders decisions within five (5) working days following a Request for Reconsideration unless a longer period is mutually agreed to by the Hearing Examiner, applicant, and requester.

The decision of the Hearing Examiner on an appeal of a SEPA threshold determination for a project action is final. The Hearing Examiner shall not entertain motions for reconsideration for such decisions. The decision of the Hearing Examiner regarding a SEPA threshold determination may only be appealed to Superior Court in conjunction with an appeal of the underlying action in accordance with RCW 43.21C.075 and TCC 17.09.160. TCC 17.09.160(K).

A. RECONSIDERATION BY THE HEARING EXAMINER (Not permitted for a decision on a SEPA threshold determination)

1. Any aggrieved person or agency that disagrees with the decision of the Examiner may request Reconsideration. All Reconsideration requests must include a legal citation and reason for the request. The Examiner shall have the discretion to either deny the motion without comment or to provide additional Findings and Conclusions based on the record.
2. Written Request for Reconsideration and the appropriate fee must be filed with the Resource Stewardship Department **within ten (10) days of the written decision**. The form is provided for this purpose on the opposite side of this notification.

B. APPEAL TO THE BOARD OF THURSTON COUNTY COMMISSIONERS (Not permitted for a decision on a SEPA threshold determination for a project action)

1. Appeals may be filed by any aggrieved person or agency directly affected by the Examiner's decision. The form is provided for this purpose on the opposite side of this notification.
2. Written notice of Appeal and the appropriate fee must be filed with the Community Planning & Economic Development Department **within fourteen (14) days of the date of the Examiner's written decision**. The form is provided for this purpose on the opposite side of this notification.
3. An Appeal filed within the specified time period will stay the effective date of the Examiner's decision until it is adjudicated by the Board of Thurston County Commissioners or is withdrawn.
4. The notice of Appeal shall concisely specify the error or issue which the Board is asked to consider on Appeal, and shall cite by reference to section, paragraph and page, the provisions of law which are alleged to have been violated. The Board need not consider issues, which are not so identified. A written memorandum that the appellant may wish considered by the Board may accompany the notice. The memorandum shall not include the presentation of new evidence and shall be based only upon facts presented to the Examiner.
5. Notices of the Appeal hearing will be mailed to all parties of record who legibly provided a mailing address. This would include all persons who (a) gave oral or written comments to the Examiner or (b) listed their name as a person wishing to receive a copy of the decision on a sign-up sheet made available during the Examiner's hearing.
6. Unless all parties of record are given notice of a trip by the Board of Thurston County Commissioners to view the subject site, no one other than County staff may accompany the Board members during the site visit.

C. STANDING All Reconsideration and Appeal requests must clearly state why the appellant is an "aggrieved" party and demonstrate that standing in the Reconsideration or Appeal should be granted.

D. FILING FEES AND DEADLINE If you wish to file a Request for Reconsideration or Appeal of this determination, please do so in writing on the back of this form, accompanied by a nonrefundable fee of **\$861.00 for a Request for Reconsideration or **\$1,174.00** an Appeal. Any Request for Reconsideration or Appeal must be **received** in the Building Development Center at 3000 Pacific Ave SE, Suite 100 no later than 4:00 p.m. per the requirements specified in A2 and B2 above. **Postmarks are not acceptable**. If your application fee and completed application form is not timely filed, you will be unable to request Reconsideration or Appeal this determination. The deadline will not be extended.**

* Shoreline Permit decisions are not final until a 21-day appeal period to the state has elapsed following the date the County decision becomes final.



Project No. _____
Appeal Sequence No.: _____

☐ Check here for: **RECONSIDERATION OF HEARING EXAMINER DECISION**

THE APPELLANT, after review of the terms and conditions of the Hearing Examiner's decision hereby requests that the Hearing Examiner take the following information into consideration and further review under the provisions of Chapter 2.06.060 of the Thurston County Code:

(If more space is required, please attach additional sheet.)

☐ Check here for: **APPEAL OF HEARING EXAMINER DECISION**

TO THE BOARD OF THURSTON COUNTY COMMISSIONERS COMES NOW _____
on this _____ day of _____, 20____, as an APPELLANT in the matter of a Hearing Examiner's decision
rendered on _____, 20____, by _____ relating to _____

THE APPELLANT, after review and consideration of the reasons given by the Hearing Examiner for his decision, does now, under the provisions of Chapter 2.06.070 of the Thurston County Code, give written notice of APPEAL to the Board of Thurston County Commissioners of said decision and alleges the following errors in said Hearing Examiner decision:

Specific section, paragraph and page of regulation allegedly interpreted erroneously by Hearing Examiner:

1. Zoning Ordinance _____
2. Platting and Subdivision Ordinance _____
3. Comprehensive Plan _____
4. Critical Areas Ordinance _____
5. Shoreline Master Program _____
6. Other: _____

(If more space is required, please attach additional sheet.)

AND FURTHERMORE, requests that the Board of Thurston County Commissioners, having responsibility for final review of such decisions will upon review of the record of the matters and the allegations contained in this appeal, find in favor of the appellant and reverse the Hearing Examiner decision.

STANDING

On a separate sheet, explain why the appellant should be considered an aggrieved party and why standing should be granted to the appellant. This is required for both Reconsiderations and Appeals.

Signature required for both Reconsideration and Appeal Requests

APPELLANT NAME PRINTED

SIGNATURE OF APPELLANT

Address _____

Phone _____

Please do not write below - for Staff Use Only:

Fee of ☐ \$861.00 for Reconsideration or \$1,174.00 for Appeal. Received (check box): Initial _____ Receipt No. _____
Filed with the Community Planning & Economic Development Department this _____ day of _____, 20____.