Hearing date: 12/07/2018
Hearing time: 1:30 PM
Judge/Calendar:
Honorable Christopher Lanese

SUPERIOR COURT OF WASHINGTON
FOR THURSTON COUNTY

PROTECT ZANGLE COVE, et al.,

Petitioners,

v.

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, et al.,

Respondents.

No. 18-2-01972-34

FIRST DECLARATION OF DR. CHANGMOOK SOHN

I, CHANGMOOK SOHN, declare as follows:

1. I am over the age of 18 years and make this declaration based upon my personal knowledge.

2. I am a governor of Pacific Northwest Aquaculture, LLC ("PNA") and have applied for regulatory approvals on behalf of PNA to operate a commercial geoduck farm on privately owned tidelands in Thurston County. Petitioners claim in this action that PNA's geoduck farm requires a Hydraulic Project Approval permit from the Washington Department of Fish and Wildlife.

3. Attached as Exhibit A is a true and correct copy of the Thurston County Hearing Examiner Findings, Conclusions, and Decisions ("Hearing Examiner Decision") for PNA's geoduck farm. The Hearing Examiner Decision denies the appeal of a

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mitigated determination of non-significance for the farm and approves the shoreline substantial development permit for the farm, subject to conditions.

4. Attached as Exhibit B is a true and correct copy of the decision of the Board of Thurston County Commissioners concerning an appeal filed by Patrick and Kathryn Townsend and Anneke Jensen of the Hearing Examiner Decision.

5. Attached as Exhibit C is a true and correct copy of the Seattle District U.S. Army Corps of Engineers' ("Corps") authorization letter for PNA's farm pursuant to Nationwide Permit ("NWP") 48, dated August 6, 2018. The enclosures referenced in the first two paragraphs of the letter are not included in Exhibit C.

6. Attached as Exhibit D is a true and correct copy of a document published by the Seattle District Corps titled "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 01EWFW00-2016-F-0121, National Marine Fisheries Service (NMFS) Reference Number WCR-2014-1502)." This document is publicly available on the Corps' website: https://www.nws.usace.army.mil/Portals/27/docs/regulatory/NewsUpdates/20170418%20Verification%20Enclosure%201.pdf.

I certify under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

EXECUTED at Olympia, Washington, this 9th day of November, 2018.

By: _____
Dr. ChangMook Sohn, Pacific Northwest Aquaculture, LLC.

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Exhibit A

THURSTON COUNTY
WASHINGTON
SINCE 1852

COUNTY COMMISSIONERS

John Hutchings
District One
Gary Edwards
District Two
Bud Blake
District Three

HEARING EXAMINER

Creating Solutions for Our Future

BEFORE THE HEARING EXAMINER
FOR THURSTON COUNTY

In the Matter of the Appeal of **Patrick Townsend, Kathryn Townsend, and Anneke Jensen** of the May 3, 2016 Mitigated Determination of Non-Significance in the request of ChangMook Sohn for Shoreline Substantial Development Permit for an Intertidal Geoduck Aquaculture Operation and In the Matter of the Application of **ChangMook Sohn** for a Shoreline Substantial Development Permit for an Intertidal Geoduck Aquaculture Operation on private tidelands at 930 - 76th Avenue NW, Olympia, WA	APPEAL No. 16-106159 VE Project No. 2014108800 **FINDINGS, CONCLUSIONS, AND DECISIONS**

SUMMARY OF DECISION

The Appellants did not satisfy their burden of proving that the mitigated determination of non-significance was clearly erroneous. The SEPA appeal is **DENIED**.

The request for shoreline substantial development permit to develop an intertidal geoduck aquaculture operation on private tidelands addressed as 930 - 76th Avenue NW, Olympia, is **APPROVED** subject to conditions.

SUMMARY OF RECORD[1]

Request:

ChangMook Sohn (Applicant) requested approval of a shoreline substantial development permit for a commercial intertidal geoduck operation on 1.1 acres of private tidelands. The proposed geoduck farm will be planted within an intertidal zone of the Puget Sound +3 feet to -4.5 feet Mean Lower Low Water (MLLW). The subject tidelands are located at the residential property at 930 – 76th Avenue NW in Olympia, Washington.

Thurston County Resource Stewardship Department reviewed the proposal for compliance with the requirements of the State Environmental Policy Act (SEPA) and issued a Mitigated Determination of Non-Significance (MDNS) on May 3, 2016.

Issues on Appeal:

On May 24, 2016, an appeal of the Determination of Non-Significance (DNS) was timely filed by Patrick Townsend, Kathryn Townsend, and Anneke Jensen (Appellants) through counsel, alleging that the MDNS did not adequately address the following issues: (A) eelgrass; (B) [dismissed]; (C) impact of plastic; (D) recreation; (E) aesthetics; (F) [dismissed]; and (G) [dismissed].

Hearing Date:

The Thurston County Hearing Examiner conducted a consolidated open record public hearing on the SSDP request and SEPA appeal. Testimony was taken on October 17 and November 7, 2016 and January 17, 2017. Public comment on the shoreline permit was accepted on October 17, 2016. At the conclusion of the proceedings, the parties agreed to a schedule for post-hearing submission of closing argument in the appeal with the record closing on January 27, 2017, and submission of proposed Findings on February 3, 2017, resulting in a decision issuance date of February 17, 2017.

Testimony:

At the open record public hearing, the following individuals presented testimony under oath:

For the Appellants

Christopher Hamilton
Patrick Townsend, Appellant
David Batker, Expert, Executive Director and Chief Economist, Earth Economics
Anneke Jensen, Appellant
Kathy Knight, Neighbor
John (Jack) Marshall, Neighbor

For the Applicant

Phil Osborne, Principal, Coastal Geomorphologist, Golder Associates, Ltd.

[1] Findings begin on page 10.

ChangMook Sohn, Ph.D., Applicant
Diane Cooper, Regulatory Compliance Director, Taylor Shellfish Company, Inc.
Brian Phipps, Geoduck Division Manager, Taylor Shellfish Company, Inc.
Philip Bloch, Senior Ecologist, Confluence Environmental Company
Louis Alan (Al) Roser, M.D.
Marlene Meaders, Senior Marine Biologist, Confluence Environmental Company
Rosalind A. Schoof, Ph.D., Principal, Ramboll-Environ US Corp

For the County

Tony Kantas, Thurston County Resource Stewardship, Associate Planner
Brad Murphy, Thurston County Resource Stewardship, Senior Planner
Dawn Peebles, Thurston County Environmental Health

Public Comment on the Shoreline Permit

Lawrence Seale
John Marshall
Sharon Thompson
John Vanek
Kathy Knight
Patricia Bolding
Marybeth Duffy
Lola Flores
Edward Steinweg
Ian Vanek
Margaret Townsend
Elizabeth Townsend
Kathryn Townsend
Jean Vanek
Patrick Townsend
Steve Wilson
David Batker

Attorney Representation:

Jessica McKeegan Jensen and Sara Beth Hewitt, Attorneys, represented the Appellants.
Samuel W. Plauche and Jesse G. DeNike, Attorneys, represented the Applicant.
Donald R. Peters, Deputy Prosecuting Attorney, represented Thurston County.

Exhibits:

The following exhibits were admitted in the record of this matter:

For the Appellants, Patrick Townsend, Kathryn Townsend, and Anneke Jensen

T1 Photograph of Zangle Cove, dated June 3, 2016
T2 Photograph of Zangle Cove, dated May 13, 2006
T3 Photograph of Zangle Cove, dated May 8, 2008
T4 Photograph of Zangle Cove, dated May 8, 2008
T5 Photograph of Zangle Cove, dated May 8, 2008
T6 Photograph of Zangle Cove, dated June 9, 2016
T7 Photograph of Zangle Cove, dated April 19, 2015
T8 Photograph of Zangle Cove, dated June 23, 2015
T9 Photograph of Zangle Cove, dated February 7, 2015

T10 Photograph of Zangle Cove, dated April 16, 2015
T11 Photograph of Zangle Cove, dated July 5, 2016
T12 Photograph of Zangle Cove, dated April 21, 2015
T13 Photograph of Zangle Cove, dated May 13, 2006
T14 Photograph of Zangle Cove, dated April 22, 2015
T15 Photograph of Zangle Cove, dated May 7, 2015
T16 Photograph of Fishermen, dated September 24, 2015
T17 Photograph of Fishermen, dated September 15, 2016
T20 Photograph of Dana Passage Geoduck Pipes, dated July 6, 2016
T21 Photograph of Dana Passage Geoduck Pipes, dated July 6, 2016
T22 Photograph of Dana Passage Dive Harvest, dated May 7, 2016
T23 Photograph of Dana Passage Dive Harvest, dated May 7, 2016
T24 Photograph of Dana Passage Dive Harvest, dated May 4, 2016
T25 Photograph of Dana Passage Dive Harvest, dated September 29, 2016
T26 Photograph of Zangle Cove, dated July 19, 2014
T27 Photograph of Zangle Cove, dated August 9, 2014
T28 Photograph of Zangle Cove, dated May 2, 2015
T29 Photograph of Zangle Cove, dated July 5, 2015
T30 Photograph of Zangle Cove, dated July 15, 2015
T31 Photograph of Zangle Cove, dated May 7, 2016
T32 Photograph of Zangle Cove, dated May 7, 2016
T33 Photograph of Zangle Cove, dated May 7, 2016
T34 Photograph of Zangle Cove, dated May 7, 2016
T35 Photograph of Zangle Cove, dated July 3, 2016
T36 Photograph of Zangle Cove, dated July 4, 2016
T37 Photograph of Zangle Cove, dated July 10, 2016
T38 Photograph of Zangle Cove, dated August 6, 2016
T39 Photograph of Zangle Cove, dated August 13, 2016
T40 Photograph of Zangle Cove, dated August 16, 2016
T41 Photograph of Zangle Cove, dated August 16, 2016
T42 Photograph of Zangle Cove, dated September 4, 2016
T43 Photograph of Zangle Cove, dated September 4, 2016

T44 Photograph of Zangle Cove, dated June 23, 2003

T45 Photograph of Zangle Cove, dated June 23, 2003

T46 Photograph of Zangle Cove, dated June 23, 2003

T47 Photograph of Zangle Cove, dated June 23, 2003

T48 Photograph of Zangle Cove, dated July 3, 2016

T49 Photograph of Moored Geoduck Barges in Dana Passage, dated September 13, 2016

T50 Photograph of Moored Geoduck Barge, dated September 15, 2016

T51 Photograph of Fishermen, dated July 3, 2016

T52 Photograph of Fishermen, dated September 15, 2016

T53 Photograph of Zangle Cove, dated July 3, 2016

T54 Photograph of Geoduck Farm Tubes, undated

T55 Photograph of Geoduck Farm Tubes, undated

T56 Aerial Photograph of Zangle Cove #1, dated August 11, 2014

T57 Aerial Photograph of Zangle Cove #2, dated August 11, 2014

T58 Aerial Photograph of Zangle Cove #3, dated August 11, 2014

T59 2016 Budd Inlet-Olympia Shoal Tide Visibility from NOAA, 6 Minute Chart, dated October 1, 2016

T61 2016 Tide Table: Dofflemeyer Point, Budd Inlet, Washington, dated January 2010 to December 2015

T62 2016 Tide Table: Dofflemeyer Point, Budd Inlet, Washington, dated January 1, 2016 to December 31, 2016

T63 Geoduck Farm Visibility for 2010 to 2015

T64 Distance between Zangle Cove and Puyallup Delta, dated October 3, 2016

T65 NOAA Map of Tide Prediction Stations, dated October 3, 2016

T67 Application to Purchase Tide, Shore, or Oyster Lands, dated January 13, 1927

T68 Map of Second Class Tidelands, dated March 6, 1866

T69 USCG Geodetic Survey Map, dated 1873

T76 Washington State Department of Natural Resources summary of site visits to document native eelgrass in Zangle Cove, dated July 25, 2007

T78 Thurston County Assessor's Map (showing Townsend parcels), dated October 10, 2016

T80 Thurston County Assessor's Map (showing Sohn and other parcels in Zangle Cove), dated October 10, 2016

T82 PVC Pipe Segment, dated October 7, 2012

T83 PVC Pipe Segment, dated 2013

T84 Photograph of Netting taken between 2012 and 2014

T85 Summary of Recreational Vessels owned by Zangle Cove Residents, dated October 2016

T86 Photograph of Zangle Cove, undated

T87 Photograph of Zangle Cove, dated July 3, 2016

T88 Photograph of Zangle Cove, dated July 3, 2016

T89 Photograph of Zangle Cove, dated June 11, 2016

T90 Photograph of Zangle Cove, dated July 3, 2016

T91 Photograph of Zangle Cove, dated September 3, 2005

T92 Photograph of Zangle Cove, dated August 1, 2014

T93 Photograph of Zangle Cove, dated September 4, 2011

T94 Photograph of Zangle Cove, dated September 4, 2011

T95 Photograph of Zangle Cove, dated August 5, 2012

T96 Photograph of Zangle Cove, dated July 4, 2016

T97 Photograph of Zangle Cove, dated September 5, 2005

T98 Photograph of Zangle Cove, dated September 3, 2005

T99 Photograph of Zangle Cove, dated August 8, 2005

T102 Tideland Survey Plan View, dated December 8, 2014

T103 Map showing shoreline length in Zangle Cove, dated October 2016

T104 Proposed Geoduck Farm Acreage, dated October 2016

T105 Proposed Geoduck Farm Acreage, dated October 2016

T106 Approved Shellfish Operations in Puget Sound, Department of Health

T107 Aerial Photograph showing land cover in Zangle Cove, dated October 2016

T108 Aerial Photograph showing land cover in Zangle Cove and surrounding areas, dated October 2016

T109 Summary of Recreation in Zangle Cove, Earth Economics, dated October 2016

T110 The Value of Ecosystem Services, Earth Economics, dated October 2016

T111 Economic Analysis of Outdoor Recreation in Washington State, Earth Economics, dated October 2016

T113 Photo of eelgrass in Zangle Cove, dated May 27, 2013

T126 Certified Copy of Records Titled "Application to Purchase Aquatic Lands, identified as Application Number 26-008410, Washington State Department of Natural Resources

For the Applicant, ChangMook Sohn

S1 Curriculum Vitae of Phil Osborne, Ph.D., dated October 2016

S2 Coastal Processes Assessment, Golder Associates Inc., dated October 2016

S4 Assessment of Coastal Sediment and Shoreline Morphology Impacts - Proposed Longbranch Shellfish Farm, P. Osborne, Ph.D., dated February 15, 2011

S5 Curriculum Vitae of Rosalind Schoof, Ph.D., dated October 2016

S6 Steps of Risk Assessment Flow Chart, undated

S9 Curriculum Vitae of Philip Bloch, dated October 2016

S11 Assessing Potential Benthic Impacts of Harvesting the Pacific Geoduck Clam Panopea Generosa in Intertidal and Subtidal Sites in BC, Canada, Journal of Shellfish Research 34.3:757-775, 2015

S14 Seasonal Effects of Clam on Eelgrass Density but not Recovery Dynamics at an Intertidal Site, Aquatic Conservation Marine and Freshwater Ecosystems 22:712-720, 2012

S18 Curriculum Vitae of Marlene Meaders, dated October 2016

S24 Geoduck Culture Flow Chart, undated

S25 Newspaper article from *The Olympian*, "Dirty Job: Shellfish workers rid beaches of tons of trash," dated October 23, 2006

S26 Geoduck Aquaculture Photographs, various dates

S28 Shellfish Interagency Permitting Team, Existing Permitting Processes flowchart, dated November 2014

S30 Programmatic Biological Assessment, Shellfish Activities in Washington State Inland Marine Waters, U.S. Army Corps of Engineers Regulatory Program, dated October 2015

S31 Letter from National Marine Fisheries Service to U.S. Army Corps of Engineers, attaching Formal Biological Programmatic Opinion, dated September 2, 2016

S32 Map of Zangle Cove Identifying Historic Eelgrass Observations and Sohn Property, Confluence Environmental Company, dated October 2016

S33 Sohn Property Field Observations, Confluence Environmental Company, dated October 2016

S34 Tube Visibility Analysis Presentation, Marlene Meaders, dated October 2016

S35 Tube Exposure Spreadsheet, Confluence Environmental Company, dated October 2016

S37 State of the Science Assessment: Shellfish Aquaculture Interactions with Submerged Aquatic Vegetation, Confluence Environmental Company, dated April 17, 2015

S39 Effects of Climate Change and UV-B on Materials, Andrady AL, Hamid HS, Torikai A., dated 2003

S48 National Marine Debris Monitoring Program, Final Program Report, Data Analysis and Summary, dated September 2007

S50 An Assessment of the Value of Pacific County's Nearshore Ecosystems, Economic Data for the Shoreline Master Program Planning Process, Earth Economics, dated July 2014

S51 Sediment Analysis for Metals and Microplastics, Foss Geoduck Farm, Key Peninsula, Pierce Co., Washington, Environ, dated February 15, 2011

S52 Puget Sound Submerged Vegetation Monitoring Program, Washington State Department of Natural Resources, dated March 5, 2016

S53 ChangMook Sohn Project No. 2014108800, Executive Summary, dated January 17, 2017, including the following:
Appendices A - J

For the County

C1 Resource Stewardship Land Use and Environmental Section Report on Special Use Permit, including the following attachments:

A. Notice of Hearing

B. Master Applications, submitted December 18, 2014

C. SEPA Environmental Checklist, submitted December 18, 2014

D. JARPA Applications, submitted December 18, 2014

E. Site Plans, submitted December 18, 2014

F. Notice of Application, mailed March 12, 2015

G. Aerial Photograph, dated 2015

H. Comment Letter from Washington State Department of Ecology, dated April 1, 2015

I. Comment Letter from Washington State Department of Ecology, dated January 8, 2015

J. Comment Letter from Washington State Department of Ecology, dated October 29, 2015

K. Email from Washington State Department of Fish and Wildlife

L. Comment Letter from Washington State Department of Ecology, dated May 17, 2016

M. Mitigated Determination of Non-Significance (MDNS), dated May 3, 2016

N. Reports Considered in the Review of The Shoreline Substantial Development Permit (SSDP) and SEPA Review:

1. Confluence Environmental Company Addendum Response to Public Comments, dated February 26, 2016
2. Confluence Environmental Company Addendum Response to Public Comments, dated November 20, 2015
3. Pacific Northwest Aquaculture Biological Evaluation, dated December 2014
4. Final Report, Geoduck Aquaculture Research Program by University of Washington through the Sea Grant Program, dated December 2015
5. Geoduck Aquaculture Research Program Report to the Washington State Legislature through the Sea Grant Program, dated November 2013
6. Interim Progress Report, Geoduck Aquaculture Research Program by University of Washington through the Sea Grant Program, dated December 1, 2014
7. Interim Progress Report, Geoduck Aquaculture Research Program by University of Washington through the Sea Grant Program, dated February 2012
8. Interim Progress Report, Geoduck Aquaculture Research Program by University of Washington through the Sea Grant Program, dated March 2011
9. Effects of Geoduck Aquaculture on the Environment: A Synthesis of Current Knowledge, by Washington Sea Grant, University of Washington, dated October 27, 2009
10. Marine Forage Fishes in Puget Sound, by Dan Pentilla, Washington Department of Fish and Wildlife, dated 2007
11. Assessing Potential Benthic Impacts of Subtidal Geoduck Clam Harvesting, by Wenshan Liv and Chris Pearce of Fisheries and Oceans Canada, research completed October 2010

O. Comment Letters Received in Response to the Notice of Application, numbered 1 through 87; see Appendix C

P. Comment letters and emails received in response to the MDNS dated May 3, 2016, numbered 1 through 26; see Appendix D

C2 Notice of Public Hearing, dated January 3, 2017

C3 Memorandum from Brad Sangston, Thurston County Environmental Health, dated April 21, 2016

C4 Memorandum from Kevin Chambers, Thurston County Public Works, dated January 28, 2015

C5 Thurston County Comprehensive Plan, Natural Resource Lands Section, Part II. Aquaculture Resources, pages 3-9 and 3-10

C6 Ten public comment emails received in response to the October 17, 2016 Hearing Notice

C7 Notice of Appeal to Thurston County's May 3, 2016 Mitigated Determination of Significance (MDNS) Report, dated May 24, 2016

C8 Comments and attached articles and reports submitted during the public comment period at the October 17, 2016 Hearing; see Appendix E

Also included in this record are significant pre- and post-hearing submittals, motions, orders, and briefings listed in appendices at the end of this decision.

Based upon the record developed at the open record hearing, the Hearing Examiner enters the following findings applicable to the SEPA appeal and the requested shoreline permit.

FINDINGS

Description of Site, Surroundings, and Proposal

1. On December 18, 2014, Dr. ChangMook Sohn of Pacific Northwest Aquaculture LLC (Applicant) requested approval of a shoreline substantial development permit (SSDP) to operate a 1.1-acre intertidal commercial geoduck aquaculture farm (Farm) at 930 - 76th Avenue NE, Olympia.[2] The proposed tidelands are designated as Conservancy shoreline environment by the Shoreline Master Program for the Thurston Region (SMPTR). With the SSDP application, the Applicant submitted the required State Environmental Policy Act (SEPA) environmental checklist to Thurston County (County). *Exhibits C1.B, C1.C, C1.D, C1.E, and C1.N.3.*

2. Situated on a triangle-shaped estuary known as Zangle Cove, the subject 1.65-acre property is zoned Rural Residential Resource One Dwelling Unit Per Five Acres (RRR 1/5). Zangle Cove is southwest of Dana Passage and northeast of Boston Harbor. The Applicant owns the subject property and lives in the single-family residence directly upland from the proposed Farm. Surrounding land uses are primarily single-family residences on small waterfront lots. The subject property and adjacent parcels along the east side of Zangle Cove contain single-family residences and mature forested shoreline buffers, including beneficial feeder bluffs. On the west side of Zangle Cove, residentially developed parcels have minimally vegetative shoreline buffers and bulkheads. The homes on the east and west sides of the cove face each other across the water. *Exhibits C1, C1.B, and C1.D.*

3. The Applicant plans to partner with Taylor Shellfish Farms (Taylor Shellfish) to operate the proposed Farm. Taylor Shellfish has farmed geoduck and other shellfish throughout Puget Sound for decades. They would be responsible for the majority of planting and harvesting activities on-site. The Applicant would assist in performing monitoring and communicating with Taylor Shellfish should any issues arise with respect to Farm operations. *Sohn Testimony; Cooper Testimony; Phipps Testimony.*

[2] The legal description of the subject property is a portion of Section 11, Township 19N, Range 2W, W.M.; also known as tidelands of Tax Parcel #12911440102. *Exhibit C1.*

4. As proposed, the Farm would be planted between tidal elevations -4.5 mean lower low water (MLLW) and +3 MLLW. Due to substrate limitations, planting would not go all the way up to the +3 MLLW elevation for the entire width of the Farm; it would be at lower elevations in some places. Substrate preparation activities would be limited to confirming and marking the location of the boundary corners. There would be no removal, raking, or disturbance of substrate to prepare for planting geoducks. *Exhibits C1.D and C1.N.3; Phipps Testimony.*

5. Geoduck seeds would be placed by hand into individual PVC tubes, approximately 10 inches long and four to six inches in diameter, inserted into the substrate such that only two to three inches protrude from the substrate. Tubes would be placed at a density of approximately one per square foot or less. Three juvenile geoduck seeds would be planted in each tube. Planting is expected to take approximately eight days and would occur during low-tide periods lasting approximately four hours each. Area nets are proposed to be placed over the tubes to protect juvenile geoducks from predators and to contain tubes that are loosened in storm events. The area nets would be secured with rebar designed in a "J" shape, inserted into the substrate with the rounded bend up. The PVC tubes and netting would be in place for up to two years and then removed while the geoducks mature. The Farm would be routinely monitored, especially after storm events, while the tubes and netting are in place. The total grow-out time from planting until harvest varies based on site-specific and environmental conditions. The total grow-out time for the proposed Farm is projected to be six years. During at least the last four years, no gear would be present. Limited site visits would be performed during grow-out to gauge geoduck growth and survival. *Exhibits C1.D, C1.M, and C1.N.3; Phipps Testimony*.

6. As proposed, geoducks would be harvested by hand using low pressure, high volume water pumps with a nozzle inside tip diameter of 5/8-inch or less. The water pumps used by Taylor Shellfish have been measured at approximately 40 pounds per square inch of pressure. Geoducks are vulnerable to injury or death from excessive force or disturbance. Because they are sold alive, harvesters carefully identify and place markers near geoduck siphon sign and then place the pump nozzle into the substrate at the markers to extract geoducks. Taylor Shellfish typically has two harvesters working on a bed at a time; each harvester can usually cover a few hundred square feet each day. The water pumps are double-insulated to minimize noise. Lighting for dusk and dark harvest times would be from individual harvester headlamps. Harvest of the proposed Farm is expected to take approximately 40 days. *Exhibits C1.D and C1.N.3; Phipps Testimony*.

7. In order to obtain all necessary permissions to operate the Farm, the Applicant also applied to the United States Army Corps of Engineers for a Clean Water Act Section 404 permit and to the Washington State Department of Ecology for Clean Water Act Section 401 Water Quality Certification. In association with the Clean Water Act approvals, the Applicant submitted a Biological Evaluation to analyze the Farm's impacts under the Endangered Species Act (ESA), the Magnuson-Stevens Fishery Conservation and

Management Act, and the 1996 Sustainable Fisheries Act. *Exhibits C1.D and C1.N.3*.

SEPA Appeal Procedural Background

8. Pursuant to the State Environmental Policy Act (SEPA), the Thurston County Resource Stewardship Department (the Department) was designated lead agency for review of the proposal's environmental impacts. The SEPA Responsible Official issued a mitigated determination of non-significance (MDNS) on May 3, 2016, with a 14-day comment period and a seven-day appeal period. As stated in the document, the MDNS was based on review of information included in (not necessarily limited to) the following documents:

    - Master Applications, submitted December 18, 2014
    - SEPA Environmental Checklist, submitted December 18, 2014
    - JARPA Applications, submitted December 18, 2014
    - Site Plans, submitted December 18, 2014
    - Notice of Application, mailed March 12, 2015
    - Comment letters and reports submitted by nearby property owners throughout the project review
    - Confluence Environmental Company Response to Public Comments, dated November 20, 2015
    - Confluence Environmental Company Addendum Response to Public Comments, dated February 26, 2016
    - Comment Letter from Washington State Department of Ecology, dated April 1, 2015
    - Comment Letter from Washington State Department of Ecology, dated January 8, 2015
    - Pacific Northwest Aquaculture Biological Evaluation, dated December 2014
    - Assessing Potential Benthic Impacts of Subtidal Geoduck Clam Harvesting, by Wenshan Liv and Chris Pearce of Fisheries and Oceans Canada, research completed October 2010
    - Final Report, Geoduck Aquaculture Research Program, by University of Washington through the Sea Grant Program, dated December 2015
    - Interim Progress Report, Geoduck Aquaculture Research Program, by University of Washington through the Sea Grant Program, dated December 1, 2014
    - Geoduck Aquaculture Research Program Report to the Washington State Legislature through the Sea Grant Program, dated November 2013

- Interim Progress Report, Geoduck Aquaculture Research Program, by University of Washington through the Sea Grant Program, dated February 2012
- Interim Progress Report, Geoduck Aquaculture Research Program, by University of Washington through the Sea Grant Program, dated March 2011
- Effects of Geoduck Aquaculture on the Environment: A Synthesis of Current Knowledge, by Washington Sea Grant, University of Washington, dated October 27, 2009
- Marine Forage Fishes in Puget Sound, by Dan Pentilla WDFW, dated 2007
- Requirements and conditions that are imposed by State and Federal permits for geoduck farms

Exhibits C1 and C1.M.

9. The MDNS imposed 18 mitigation measures requiring:

1) The preparation, planting, maintenance and harvesting at the subject sites shall be in compliance with the most current version of the Washington State Geoduck Growers Environmental Codes of Practice for Pacific Coast Shellfish Aquaculture.

2) An unobtrusive but visible sign shall be placed at the aquaculture bed listing the name and contact information for a person designated to immediately address problems associated with the aquaculture bed when discovered by citizens or agency representatives.

3) Prior to any site preparation, the property owners and aquaculture bed operator shall each sign a document to be recorded with the Thurston County Auditor granting access to the site for researchers affiliated with County, State or Federal governments to gather information related to geoduck aquaculture.

4) All tubes, mesh bags, and nets used on the tidelands below the ordinary high water mark (OHWM) shall be clearly, indelibly, and 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.

5) The applicant / operator shall routinely inspect, document, and report any fish or wildlife found entangled in anti-predator nets or other culturing equipment. At least twice a month during the time the nets are installed, they shall be inspected and a record of observations maintained. Live entangled fish and wildlife shall be released upon observation. During the required bi-monthly

site visits the applicant / operator shall remove from the beach or secure any loose nets, tubing or aquaculture related debris.

6) All protective tubes and netting related to the proposed Geoduck aquaculture shall be removed from the shoreline within two (2) years of installation.

7) Weekly patrols of tidelands within a half mile of the geoduck farm shall be conducted. During those patrols, all geoduck debris must be collected regardless of its source.

8) Patrols to search for and collect geoduck debris must also be conducted within a day following a severe storm event.

9) The applicant / operator must keep a record of the total number of PVC tubes, net caps, mesh tubes, and canopy nets they place of the site, and how many of those pieces of geoduck gear they remove through farming practices or collect from beach patrols.

10) Gear that blends into the surrounding environment (e.g., neutral colors or black) shall be used at the most extent possible to reduce any potential aesthetic impacts.

11) Shellfish culturing shall not be placed above the tidal elevation of +3 MLLW in order to minimize potential impacts to forage fish habitat. If herring spawn is observed, then those areas shall be avoided until the eggs have hatched.

12) Land vehicles and equipment shall not be washed, stored, fueled, or maintained within 150 feet of any waterbody. All vehicles will be inspected for fluid leaks daily within 150 feet of any waterbody.

13) Permanent lighting of the aquaculture beds shall not be permitted. Any temporary lighting shall be directed such that off-site glare is minimized to the extent possible. When tides force nighttime operations, crews shall only use headlamps, and shall be trained to limit light pollution.

14) Noise impacts shall be minimized by using fully-enclosed and insulated motors with approved muffled exhaust systems.

15) All individual screens placed on tubes shall be secured with UV-resistant fasteners.

16) 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 Resource Stewardship Department and affected Tribes shall be contacted to assess the situation prior to resumption of work.

17) Only washed gravel shall be used for shellfish bed preparation. Unsuitable material (e.g., trash, debris, concrete, asphalt, tires) shall not be discharged or used as fill (e.g., to secure nets, create berms or provide nurseries).

18) No physical work on the beds shall be initiated until the applicant provides evidence that required State and Federal permits and approvals have been granted. A listing of the known State and Federal requirements is provided in the Notes "A" and "B" below.

Exhibits C1 and C1.M.

10. The Department received comments from state and County agencies recommending approval of the Farm or providing limited comments and recommendations. There were 26 comment letters and emails submitted during the MDNS comment period, including many attached documents. *Exhibits C1, C1.H, C1.I, C1.J, C1.K, C1.L, C1.P, C3, and C4*.

11. On May 24, 2016, Patrick Townsend, Kathryn Townsend, and Anneke Jensen (Appellants) submitted a timely appeal challenging the MDNS. Appellants' notice of appeal alleged the MDNS did not adequately address the following issues: (A) eelgrass; (B) protection of the environment; (C) impact of plastic; (D) recreation; (E) aesthetics; (F) continuing trespass; and (G) mitigating conditions. *Exhibit C7*.

12. Apprised of the appeal for scheduling purposes, the Thurston County Hearing Examiner convened a pre-hearing conference on July 14, 2016. The Appellants, Applicant, and County were represented by counsel during the conference. A schedule for pre-hearing exchange of witness and exhibit lists and exhibits themselves was agreed to and memorialized in a pre-hearing order issued on the date of the conference. The pre-hearing order scheduled a consolidated hearing on the MDNS appeal and the SSDP application for October 17, 2016, with the public comment period for the permit application to be conducted at 3:00 pm. The Order scheduled a second hearing date of November 7, 2016 in case the hearing did not conclude on October 17th. *Appendix A.1, Pre-Hearing Order, dated July 15, 2016*.

13. The Applicant filed a motion to dismiss the appeal. In an order dated September 2, 2016, the Hearing Examiner dismissed appeal issues B (protection of the environment), F (continuing trespass), and G (mitigating conditions), retaining issues A, C, D, and E for hearing. *Appendix A.7, Order Ruling on Motion to Dismiss, dated September 2, 2016*.

14. On October 4, 2016, Appellants filed a motion to stay the hearing pending Superior Court ruling on a civil proceeding filed on the grounds that the Applicant's project allegedly proposes to occupy some portion of Appellant Anneke Jensen's tidelands. The Hearing Examiner denied the motion for stay in an October 13, 2016 order. *Appendix A.18, Order Ruling on Motion to Stay Proceedings, dated October 13, 2016*.

15. The consolidated appeal and permit application hearing occurred over the course of three

days: October 17, 2016, November 7, 2016, and January 17, 2017.

Arguments and Evidence in the SEPA Appeal

Appellants' Case

16. The issues under consideration in the appeal consisted of Appellants' contention that the MDNS did not adequately address the project's impacts to eelgrass, impacts from the use of plastic, impacts to recreation, and aesthetic impacts. The Appellants presented testimony from six witnesses: Chris Hamilton, Patrick Townsend, David Batker, Anneke Jensen, Kathy Knight, and John Marshall. Mr. Hamilton's testimony was limited to informing the record that he had taken three of the pictures of Zangle Cove in Appellants' exhibits. Mr. Townsend (Appellant), Ms. Jensen (Appellant), Ms. Knight, and Mr. Marshall live on or own property near Zangle Cove. Mr. Batker is an economist who specializes in ecological economics, calculating the costs and benefits of large projects. *Testimony of Chris Hamilton, Patrick Townsend, David Batker, Anneke Jensen, Kathy Knight, and John Marshall.*

Issue A: Eelgrass

17. Native eelgrass was discovered in Zangle Cove in 2006 and reported to the Washington State Department of Natural Resources (DNR). DNR continued to observe eelgrass in the cove in the following years. Appellants testified that eelgrass was once on or directly adjacent to the Applicant's property; they did not offer photographic or other evidence that definitively showed it had been on his tidelands, but they believed it had been. In 2013, a fairly large patch of native eelgrass was observed in Zangle Cove, prompting an eelgrass restoration project funded by the United States Department of Energy (DOE), jointly managed by DNR and Battelle. In 2015, volunteers from Zangle Cove and Boston Harbor (and other areas) participated in the second phase of the eelgrass restoration program by sorting and bundling eelgrass shoots which were planted by divers in Zangle Cove in a test site area a little over 300 feet to the west of the subject tidelands. *Testimony of John Marshall, Kathy Knight, Kathryn Townsend, and Patrick Townsend; Exhibits S32, T1, T2, T3, T4, T5, and T76.*

18. Eelgrass provides valuable near-shore habitat for forage fish including surf smelt, sand lance, and herring. It is considered an important component of the estuarine and near shore food web, harboring numerous invertebrate salmon prey species and providing cover for juvenile salmon from predators. Native eelgrass can reestablish itself or be established through a restoration project, and it can establish on its own where it has not been present for a period of time. *Exhibit S31; Batker Testimony.*

19. Appellant Patrick Townsend testified that Zangle Cove is the southernmost known location for the occurrence of the native eelgrass. Acknowledging that he is not a professional biologist, eelgrass expert, or geoduck expert, Mr. Townsend testified that he has personally participated in the eelgrass restoration project and has personally observed a geoduck harvest. Based on these experiences, he is concerned that the Farm would impact eelgrass by causing sediment transport along typical tidal currents in Zangle Cove, which he asserted could carry sediment to the eelgrass restoration test site. *Exhibit*

T76; Patrick Townsend Testimony.

20. Economist David Batker testified that the proposed aquaculture activities would cause sediment in the water from the initial native geoduck harvesting, geoduck planting, underwater dive harvesting, hand harvesting with jet wands, and replanting. Although he has not personally observed or studied commercial geoduck harvest, Mr. Batker testified that sediment can travel distances between 200 feet and 300 feet from a harvest location and that predicting where sediment will go is difficult, as sediment often appears where it is not expected to go. He testified that sediment can smother eelgrass. Mr. Batker also testified that if the Farm is installed, it would preclude the opportunity for eelgrass to establish at the subject tidelands, at least for the duration of the proposed aquaculture operation. Mr. Batker testified that his opinion regarding sediment transport associated with the instant proposal is informed by his involvement in other types of projects, including those involving sediment diversion projects in Louisiana and bottom trawling. Based on situations he observed in Louisiana wetlands, Mr. Batker testified that, in his opinion, increasing aquaculture in Puget Sound has had a very substantial impact on the environment and has led to questions about whether the scale of aquaculture in Puget Sound has become large enough to have a substantial adverse impact on the environment. He was unimpressed by the Sea Grant study, which he found insufficient because it looked only at relative abundance rather than absolute abundance (biomass). Mr. Batker did not offer calculations of the amount of sediment that the Farm would cause to deposit at the eelgrass restoration test site; however, he submitted his opinion that the aquaculture operation would result in probable, significant adverse impacts to eelgrass. *Batker Testimony; Exhibits C1.N.2, T103, T104, T105, and T106.*

21. On cross examination on the subject of eelgrass, Mr. Batker stated that he does not know whether there is eelgrass on or adjacent to the subject tidelands presently, but his opinion remains that approval of the permit would cause sediment impacts to eelgrass in Zangle Cove. He was not able to estimate the volume of sediment that could be transported from the proposed Farm and acknowledged that his testimony did not demonstrate that quantity of sediment. Stating that his testimony was based on his experiences in Louisiana, he continued to assert that geoduck aquaculture would stir up a significant amount of sediment. He stated he has not read a study or seen a model on geoduck harvest sediment transfer. *Batker Testimony*.

22. On cross examination generally, Mr. Batker conceded that he had not testified in a SEPA appeal before, and that he had not surveyed the site. He was unable to describe the County's MDNS process. He acknowledged that there are experts in the field who disagree with him about sediment impacts to eelgrass more than 300 feet distant from a geoduck farm and acknowledged that private property owners may deny access across their tidelands. He testified that he was not familiar with Washington Administrative Code provisions that allow the materials proposed to be used in this operation, and he did not know a USACOE permit was required. *Batker Testimony*.

23. Zangle Cove resident Kathy Knight testified that she is concerned about the Farm's potential impacts to eelgrass as a result of sediment transport. She has butter clams on her tidelands, and she is worried they will be silted over due to installation of the Farm. While she has never personally observed eelgrass on the subject tidelands, she has followed DNR's eelgrass restoration efforts because of her personal interest in ecology. Her concern about eelgrass pertains to aquaculture barges constantly coming and going which, if the Farm's barges park over the test site, could cause shading impacts to eelgrass. She testified that she has observed that other farms have boats and hoses in use all the time. Ms. Knight stated that she is concerned that the Applicant is coordinating with Taylor Shellfish, characterizing that company's activities as industrial development. She submitted her personal opinion that aquaculture in such a small estuary is morally wrong and ecologically dangerous. *Exhibits T57 and T113; Knight Testimony*.

24. Waterfront landowner John Marshall also participated in the DNR eelgrass restoration volunteer work. Based on conversations he had with DNR representatives and his experiences, he testified that he is concerned that sediment raised by the Farm could impact eelgrass in Zangle Cove by reducing clarity of the water. He also commented that eelgrass spreads, and that the presence of sediment in the water would stress eelgrass. *Marshall Testimony*.

Issue C: Plastic

25. With regard to plastic, Patrick Townsend testified that he is concerned with the amount of plastic gear the Farm proposes to use in Zangle Cove. By his calculations, the proposed 48,000 PVC tubes, four inches in diameter, laid end to end would be eight miles long and weigh seven to eight tons. Mr. Townsend stated that his concern is that the Farm's gear would escape and cause there to be marine debris in Zangle Cove, or that the PVC would degrade into microplastics that harm animals. He testified that he has personally found individual tube nets and pieces of larger nets washed up in the cove, which tend to appear after storms. He testified as to his concern about direct impacts on wildlife from entanglement as well as from microplastics in the food chain. *Patrick Townsend Testimony*.

26. David Batker testified that he has limited experience analyzing plastics. The experience Mr. Batker noted involved looking at hazardous waste, burning plastics, and the disposal of plastics. Mr. Batker testified that approval of the shoreline permit poses a risk that storms would wash the Farm's PVC tubes off the site, and that there would be no full accounting of plastic materials lost from the Farm, so it would not be possible to know the impacts of plastic use on the farm. *Batker Testimony*.

27. With regard to plastics, Appellant Anneke Jensen testified that the currents in Zangle Cove are strong; she has seen logs roll up on the beach. Ms. Jensen expressed concern that weather events could cause the Farm's gear to dislodge. *Jensen Testimony*.

28. Kathy Knight testified that she is concerned, based on articles she has read, that the Farm's PVC tubes and plastic netting would leach chemicals into the water, and that the weather will churn up the beach and strew plastic all about. With regard to the existing aquaculture in the area, she has not observed much aquaculture gear in Zangle Cove; she generally gets wood debris on her beach. Her primary concern is silt, rather than any other Farm debris. *Knight Testimony*.

29. John Marshall testified that he is concerned that the Farm's gear would escape. He has collected tube nets from other geoduck operations that have washed up on his beach. He testified that he is concerned that the Farm would use the same PVC as is used for sewer pipe, which he asserted is of a lower quality than PVC used for water pipes. Referencing a photograph that appears to show barnacles on a piece of PVC pipe (*Exhibit T83*), he testified that barnacles could ingest plastic and carry it into the marine environment. On cross examination, he acknowledged he is not a scientist and does not have professional or academic training in what effects, if any, would result to barnacles attached to PVC. *Marshall Testimony; Exhibits C1.D, T82, T83, and T84*.

Issue D: Recreation

30. Zangle Cove is a highly utilized for recreation with residents and visitors engaged in shoreline walking, bird watching and other wildlife viewing, beach combing, camping, clamming, playing in the sand, swimming, boating, kayaking, paddle boarding, tubing, water skiing, fishing, sailing, and windsurfing. *Testimony of Patrick Townsend, Anneke Jensen, Kathy Knight, and John Marshall; Exhibits T1-T17, T20-T43, and T44-T47*.

31. Patrick Townsend presented photographs taken in Zangle Cove of wildlife and recreational activities involving kayaks, canoes, boats, paddleboards, fishing, and crabbing. Mr. Townsend testified that he is concerned the Farm would adversely impact recreation and wildlife because the PVC tubes protruding from the substrate would be a hazard for those engaged in recreation; for example, kayak rudders would become ensnared and walkers would not be able to walk in the area where tubes are placed. He also submitted that placement of the tubes and the protective netting would harm wildlife, potentially reducing the numbers and species that visit the cove, which would deter recreational uses. *Exhibits T1-T17 and T20-T43; Patrick Townsend Testimony*.

32. Mr. Batker testified that numerous recreational activities occur in the County, and that impact to recreation can be quantified by calculating reductions in user days. Mr. Batker did not calculate the reduction in user days he expected to result because of the Farm's activities. He acknowledged that the County did look at recreation in conducting environmental review, but opined that in only looking at boating and kayaking, the County's consideration of recreational impacts was insufficient. Arguing that the recreation industry dwarfs aquaculture industry in Thurston County, he contended that in order to understand the true impact of the proposal, it is important to quantify the damage to the recreation industry. Mr. Batker stated (without citation to data) that the mere presence of the Farm could repel recreational users. He testified that if wildlife presence is reduced because of the Farm, recreational activities related to wildlife viewing would

be reduced. He testified that, while commercial shellfish harvesting is economically important, recreational shellfish harvesting is also valuable, and that the County did not adequately consider that commercial activity would change the nature of the cove's pristine coastline, which is close to high-recreation area of Boston Harbor, and it is therefore not known what adverse impacts the Farm might have on the recreation economy. Although he did not present data in support of his assertion that the Farm would reduce wildlife, he testified that he believed wildlife impacts should be studied more thoroughly, and that a cumulative impact assessment should be performed for shellfish farming activities in Puget Sound. Mr. Batker testified that he was not aware of any such studies being performed. *Batker Testimony; Exhibits T103-T111*.

33. The record contains a document prepared by Mr. Batker's firm, *Economic Analysis of Outdoor Recreation in Washington State*, which indicates shellfish can enhance recreation by helping to provide clean water through the removal of pollutants and sediment. An additional document prepared by Mr. Batker's firm, *An Assessment of the Value of Pacific County's Nearshore Ecosystems*, provides further confirmation that shellfish improve water quality by filtering sediments and removing nitrogen from the water. *Exhibits S50 and T111*.

34. Anneke Jensen testified that Zangle Cove and the surrounding area are very active recreation destinations for a full range of activities including fishing, camping, clamming, and beach-walking. Ms. Jensen expressed concern that the Farm would impact recreation, by affecting wildlife with noise and commercial activity, and obstruct access to the tidelands due to the presence of PVC pipes and rebar holding the nets. She worries that commercial aquaculture would impact naturally occurring shellfish on other tidelands. *Exhibits T44-T47; Jensen Testimony*.

35. Kathy Knight testified that Zangle Cove is an active recreation area, and that people pay higher property taxes in order to live at the waterfront and have immediate access to marine recreation including kayaking, boating, fishing, and other activities. Ms. Knight presented photographs of recreational activities and figures she personally compiled on the number of recreational boats in Zangle Cove. She contended that the Applicant's ACERA report says there is no recreational activity in Zangle Cove, which is not true. Based on her observations of other shellfish farming operations, Ms. Knight is concerned that the barges would arrive and never leave, and that noise from the compressors would make recreation undesirable. She has a particular concern that the rebar used to hold down area nets would be dangerous to recreational visitors to the cove. *Exhibits T85-T99; Knight Testimony*.

36. John Marshall testified that he is concerned about the Farm's impacts to the many recreational activities that occur in Zangle Cove, including Tribal fishing activities. Mr. Marshall presented photographs of a geoduck farm in a different location, without area nets on top of the PVC tubes and with rebar stakes sticking up a significant distance from the substrate; he expressed concern that the use of such stakes would result in safety impacts for his grandchildren while recreating. He testified that recreational usage would

be restricted by approval of the permit, because people would not be able to walk over the tidelands and would be worried about rebar and other gear. *Exhibits T51-52 and T54-55; Marshall Testimony*.

Issue E: Aesthetics

37. Approximately 20 homes are on Zangle Cove's shoreline between Dover Point and the outlet of Zangle Stream. Aesthetics is a primary concern of the residents of Zangle Cove. The Applicant's tidelands are visible from the Townsend property and about 15 other low- and medium-bank waterfront properties. *Testimony of Patrick Townsend, Anneke Jensen, John Marshall, and Kathy Knight; Exhibits T78 and T80*.

38. Appellant Patrick Townsend testified as to his concerns about aesthetic impacts from the Farm if it is approved. Using tidal data from a NOAA station near Zangle Cove, he calculated the amount of time the Farm's gear would be visible, concluding that, during a year in which gear is present, it would be visible over 80% of the days in summer. Mr. Townsend's analysis did not calculate the percentage of daylight hours that the gear would be visible and did not contain information demonstrating to what extent the gear would obstruct or alter views. He contended that aesthetics matter, arguing that the fact that we can appreciate beauty is what makes us human, and that the MDNS failed to address the significant impacts to his view and his experience of living in a pristine natural area. *Exhibits T60-T63; Patrick Townsend Testimony*.

39. David Batker testified that the Farm would impact the aesthetic qualities of the area. Mr. Batker testified that this area of Thurston County is dominated by residential uses, and that a commercial shellfish farm is out of character with those uses. Stating that PVC tubes are not pleasant to look at and would degrade the view, he submitted that the MDNS did not include sufficient scrutiny of aesthetic impacts and asserted that one could determine whether there are significant aesthetic impacts resulting from a project based on community acceptance or opposition to the project. *Batker Testimony*.

40. Anneke Jensen also expressed concerns about the visibility of the Farm's gear and noise impacts, testifying that the beauty of the view is important to her rental value, and that Zangle Cove is generally considered an amazing place to be, in its current condition. On cross examination, Ms. Jensen testified that she was not familiar with the mitigations required by the MDNS. *Jensen Testimony*.

41. Kathy Knight testified that she was concerned about the noise impacts associated with the Farm. Her concern was based on the presence of a lot of wildlife near the pristine sand and gravel beach. She stated that the Farm would impact the wildlife and thus her experience of the whole area. She testified that the estuary is very important to her and that she considers the location of the proposed Farm, which is in her view, as her front yard. *Knight Testimony*.

42. Noting that all the residences on the west side of the cove would have a direct view of the subject tidelands, John Marshall testified that he is concerned about the visual and noise

impacts from the proposed Farm. Mr. Marshall stated that he has heard noise at times from other geoduck operations in Dana Passage. Mr. Marshall did not quantify how much noise he would experience as a result of the Farm as proposed and conditioned in the MDNS. In support of his concerns about view impacts, he presented photographs of existing geoduck operations that use individual cap nets. *Exhibits C1.D and T54-T55; Marshall Testimony*.

County Case

43. The County presented the testimony of three witnesses. Tony Kantas is an Associate Planner with the Department. He has worked as a planner for the County for 18 years, and prior to joining the County, he worked as a planner in other jurisdictions. Mr. Kantas was the planner assigned to the Farm and authored the MDNS. Brad Murphy is a senior planner in the County's Long Range Planning Division. Dawn Peebles is an environmental health specialist with Thurston County Environmental Health. *Kantas Testimony; Murphy Testimony; Peebles Testimony*.

44. Mr. Kantas authored the Department's Staff Report for the appeal and the SSDP application. Mr. Kantas described the County's process in reviewing the application and issuing a SEPA threshold determination. He testified that geoduck aquaculture is an allowed use at the site pursuant to the County's Shoreline Master Program, and that aquaculture would be considered to be consistent with the character of the community. The Staff Report stated that the various conditions and permitting requirements will adequately address all elements of the environment as required in WAC 197-11-444. As conditioned, the Department concluded that there would be no significant impact to any element of the environment as a result of the proposed aquaculture operation. Mr. Kantas recommended denial of SEPA appeal and approval of the SSDP. *Kantas Testimony; Exhibit C1*.

45. Considering the issues alleged on appeal, the directly applicable environmental elements reviewed in the SEPA checklist are erosion, water quality, plants and animal habitat, unique species, fish migration routes, noise, toxic releases, light and glare, aesthetics, recreation, and cultural preservation. Mr. Kantas testified that the Department analyzed each of these elements based on current science, and that the conditions and notes listed in the MDNS addressed impacts to the point where they would not be significant. He noted that prior to commencement of operations, the Applicant is required to obtain a section 404 Clean Water Act (Nationwide 48 Permit) from the USACOE. Such permits are only issued when an applicant can demonstrate that impacts to ESA-listed species, navigation, and water quality are mitigated or found not to be significant by the USACOE. The project also requires review by the Washington State Department of Ecology for Section 401 water quality certification. These state and federal certifications ensure additional review for environmental impacts that supplements the County review. *Kantas Testimony; Exhibits C1, C1.M, and S28*.

46. Regarding potential eelgrass impacts, the Applicants submitted a Biological Evaluation (BE) prepared by Pacific Northwest Aquaculture, dated December 2014 (*Exhibit C1.N.3*), which determined the subject tidelands do not contain eelgrass that could potentially be impacted. The project's BE analyzed likely impacts from the proposed aquacultural activities and their effects on critical habitat, forage fish, and endangered species. The BE noted that recent research indicates that the plume from sediment disturbance after harvest activities is highly localized to the aquaculture plot and declines rapidly within a short distance away, due to tides and local drift cells. Based on the review of the BE, the Sea Grant Interim and Final Progress Reports to the Washington State Legislature, and other information in the file, the Department determined that the project would not significantly impact the eelgrass restoration test site, which is located approximately 330 feet away. *Exhibits C1 and C1.N.3; Kantas Testimony*.

47. With respect to plastics, the Department noted that the PVC pipe used on-site would be buried in the substrate with only two to three inches exposed. After 18 to 24 months, the PVC tubes are removed when the juvenile geoducks reach a size at which protection against predation is no longer needed. The Staff Report noted that the type of PVC used in geoduck aquaculture is also used to convey household drinking water. Department staff is not aware of any studies indicating PVC leaches chemicals into Puget Sound. *Exhibit C1; Kantas Testimony*.

48. With respect to recreation, the Staff Report noted the project site is entirely located on privately owned tidelands between the tidal range of +3 MLLW to -4.5 MLLW. At no time would the upper beach be obstructed by the Farm. The PVC tubes and netting would only be present for 18 to 24 months of the six-year culture cycle, and that, when in place, the gear would not prevent recreational use or navigational use of the water above the gear. With regard to Appellants' assertion that noise would impact recreational use, MDNS condition 14 requires noise impacts to be minimized by using pumps with fully-enclosed and insulated motors with approved muffled exhaust systems. *Exhibit C1; Kantas Testimony*.

49. Regarding aesthetics, the Staff Report notes that geoduck gear would only be in place for 18 to 24 months, out of a 60 to 84 month growth cycle, and that gear would only be visible 13% of a year in which it is present. According to the Applicant's consultant analysis, this equates to gear being visible for 5% of a growth cycle. To address the aesthetic impacts of gear visibility and other impacts associated with the operation, the MDNS imposed several conditions to ensure the geoduck operation is properly managed. MDNS mitigation measures require: routine inspections and patrols; equipment must be tagged and colored to blend in with the surrounding environment; removal of aquaculture gear within two years of planting; and signage with contact information for a person designated to immediately address any problems associated with the Farm must be posted. The routine patrols by the Applicant and/or operator, conducted weekly and after storm events, would result in all geoduck gear that washes up in the cover being picked up. Noise impacts would be mitigated by the MDNS measure requiring the use of fully enclosed, insulated pump motors with approved muffled exhaust systems, and permanent

lighting of the project was prohibited. Mr. Kantas submitted that, as conditioned, the project's aesthetic impacts are reduced to a point of non-significance. *Exhibits C1 and C1.N.2 (pages15-16); Kantas Testimony*.

50. Mr. Brad Murphy testified that he performed a site visit at the proposed Farm in July 2015. Mr. Murphy testified that he had reviewed the Staff Report and that none of the information offered in the Appellants' case caused him to question the accuracy of the information in the Staff Report or its recommendations. *Murphy Testimony*.

51. Ms. Dawn Peebles testified that the County's Public Health and Social Services Environmental Health Division had reviewed the proposed project to ensure compliance with applicable provisions of the County's sanitary code. She testified that her office would respond to any concerns under the County's sanitary code, should they arise after the Farm is in operation. *Peebles Testimony*.

Applicant Case

52. The Applicant presented the testimony of eight witnesses: Dr. ChangMook Sohn, Diane Cooper, Brian Phipps, Dr. Phil Osborne, Dr. Rosalind Schoof, Philip Bloch, Marlene Meaders, and Dr. Louis Roser. Dr. Sohn is the Applicant. Diane Cooper is the Regulatory Compliance Director for Taylor Shellfish. Brian Phipps is the Geoduck Division Manager for Taylor Shellfish. Dr. Osborne has a Ph.D. in physical geography and is a principal coastal geomorphologist with Golder Associates, Ltd. Dr. Rosalind Schoof has a Ph.D. in toxicology and is a principal at Ramboll-Environ US Corp. Philip Bloch has a MS in Environmental Management and is a senior ecologist at Confluence Environmental Company. Marlene Meaders has a MS in fisheries biology and is a senior marine biologist with Confluence Environmental Company. Dr. Roser is a retired medical doctor who owns property to the northeast of the Farm site that he has leased for commercial geoduck aquaculture since 2003. For the sake of expediency, Applicant requested that its witnesses' testimony be accepted for both the MDNS appeal and the SSDP application. *Exhibits S1, S5, S9, and S18; Testimony of ChangMook Sohn, Diane Cooper, Brian Phipps, Phil Osborne, Rosalind Schoof, Philip Bloch, Marlene Meaders, and Louis Roser*.

Issue A: Eelgrass

53. Philip Bloch has professional training and experience mapping eelgrass and analyzing potential stressors to eelgrass, including stress from aquaculture operations. Based on an August 18, 2016 site survey, Mr. Bloch testified that there is no eelgrass at the Farm site or in its general vicinity. Eelgrass was observed outside of the Farm site over a decade ago but has not been observed there since 2008. The eelgrass restoration test site located 330 feet away from the Farm site showed initial promise, but the eelgrass at the test site completely died off in 2016. Mr. Bloch spoke with Jeff Gaekle from DNR and learned that DNR evaluated the site in 2006 and found two eelgrass patches, one large and one small. DNR returned in 2008 and found that no eelgrass remained; no naturally occurring eelgrass has been reported in the vicinity since then. In the 2013 test planting, they planted 45 square meters, which enjoyed a survival rate of 62%. They planted an

even larger area in 2015; however, when DNR reinspected in May 2016, they found no eelgrass present, and none has been observed in the area since then. In 2016, DNR was still involved in the site, having planted small test patches and installed light meters to try to understand why it failed. Mr. Bloch testified there is no certainty that eelgrass can succeed at this site in the future. *Exhibits S9, S32, and S33; Bloch Testimony.*

54. Both Dr. Phil Osborne and Philip Bloch provided testimony that, even if the eelgrass restoration test site is successful, the Farm will not adversely impact it. Dr. Osborne's testimony in this case was informed by his extensive education and experience, direct studies and measurements taken during geoduck farming activities, and specific analysis and data collection performed at the Farm site. Dr. Osborne testified that, even under highly conservative assumptions, a negligible amount of sediment would be transported and deposited over the eelgrass restoration test site 330 feet from the project. Philip Bloch testified that the limited amount of sediment transport associated with the Farm, as calculated by Dr. Osborne, is below natural, baseline conditions and would not impact the eelgrass test site. *Exhibits S1, S2, and S4; Osborne Testimony; Bloch Testimony.*

55. Dr. Osborne and Mr. Bloch testified that a recent (2015), peer-reviewed, published study (referred to in testimony as the Liu study) showed intertidal geoduck harvesting does not significantly impact eelgrass directly adjacent to the harvest area and therefore would not impact eelgrass more than 300 feet away. Dr. Osborne and Mr. Bloch both submitted the opinion that the methods used in the Liu study provide an appropriate basis for evaluating the likely impacts of commercial geoduck harvesting. *Bloch Testimony; Osborne Testimony; Exhibit S11.*

56. In April 2015, Mr. Bloch's consulting firm, Confluence Environmental Company, published a comprehensive review of all available literature addressing shellfish impacts on eelgrass (*Exhibit S37*, "State of the Science Assessment"). Mr. Bloch testified that this comprehensive assessment confirmed that potential negative effects associated with geoduck aquaculture are confined to the farm footprint and directly adjacent areas. *Bloch Testimony; Exhibit S37.*

57. Consistent with these findings, the U.S. Army Corps of Engineers recently completed a programmatic assessment of shellfish farming activities throughout Washington State (October 2015) which determined that a 16-foot buffer between new shellfish farms and eelgrass provides a safe harbor to protect from impacts. Mr. Bloch testified that project applicants can seek to have buffers smaller than 16 feet approved on a case by case basis. *Exhibits S30 and S31; Bloch Testimony; Osborne Testimony; Phipps Testimony.*

58. In his testimony, Mr. Bloch disputed Mr. Batker's contention that the proposed project, if approved, would preclude the possibility of eelgrass establishing at the site in the future. Mr. Bloch testified that this issue has been recently studied by the University of Washington Department of Biology and by DNR, as reported in the Final Report of the Geoduck Aquaculture Research Program of the Sea Grant Washington study. Mr. Bloch discussed eelgrass monitoring data collected by DNR, identifying eight monitoring sites

adjacent to shellfish farms. Mr. Bloch opined that data from eight sites is enough to establish a trend. At four of the eight sites, eelgrass remained stable despite adjacent aquaculture. At three sites, eelgrass density increased after geoduck aquaculture was introduced. Referring to another study, Mr. Bloch pointed to one case in which a geoduck aquaculture bed is believed to have facilitated the establishment of eelgrass where it previously didn't exist; while there were reductions of eelgrass in the culture site after harvest, the eelgrass fully recovered even during subsequent geoduck culture cycles. In another study, geoducks were planted and harvested within an existing eelgrass bed; there was a reduction in eelgrass in the culture plot during harvest, but eelgrass recovered such that the culture and "control" sites were indistinguishable 15 months later. Mr. Bloch testified that he has personally witnessed eelgrass coexisting with shellfish beds. *Exhibits C1.N.5 (Appendix V), S14, and S52; Bloch Testimony*.

Issue C: Plastics

59. At hearing, the Applicant argued that Appellants effectively abandoned the first claim in their Notice of Appeal with respect to plastics - that they leach chemicals that have estrogenic activity, which cause adverse health effects in mammals - because Appellants offered no specific evidence to support it aside from opinions and assertions of concern. The Applicant's expert witness, Dr. Rosalind Schoof, testified that the article referenced by Appellants addresses testing performed on food packaging plastics and used in vitro exposure; this article did not mention PVC and did not address the kind of HDPE used in aquaculture. In the evidence presented by Appellants, Dr. Schoof testified that no source of estrogenic activity and no release mechanism were identified, and that Appellants presented no evidence of a viable pathway for exposure. Dr. Schoof testified that none of the plastic gear that would be used by the project has been tested and found to leach chemicals that have estrogenic activity. Dr. Schoof stated that PVC geoduck gear does not contain plasticizers known to have estrogenic activity. *Appendix B.2; Schoof Testimony*.

60. The Applicant also argued that Appellants offered no expert testimony or exhibits to support the second claim raised in the Appellants' Notice of Appeal, that PVC tubes used in geoduck aquaculture impact tidal action, sand movement, and currents resulting in impact to adjacent properties. *Appendix B.2*. Addressing this issue, the Applicant provided the expert testimony from Dr. Phil Osborne, who concluded that the project's plastic gear would not cause significant impacts to other properties or the environment. Consistent with his observations in other aquaculture operations, the lack of impacts from gear is due to the fact that the gear's net effect on waves and currents would be small, because the PVC tubes protrude only a few inches from the substrate. The thin layer of sediment that gathers in and around tubes is a small percentage of the sediment budget and is redistributed by moderate wave action. Large scale off-site deposition or erosion is unlikely given the small amount of sediment that gathers around the tubes, and the

Farm is positioned outside the region of dominant alongshore sediment transport. *Osborne Testimony; Exhibits S2 (at 19) and S4 (at 27-34).*

61. The Applicant argued that Appellants provided no concrete or credible evidence showing that the project's plastic gear would degrade into microplastics. Dr. Schoof testified that she has analyzed this claim on several occasions and concluded that it is not supported. She testified that Appellants did not present evidence showing that aquaculture would be a source of risk for microplastics. The generation of microplastics is driven by solar ultraviolet radiation, and beached debris is the greatest potential risk. She stated that most beach debris has land origins, and the most common items are plastic bottles, bags, and straws. Site-specific studies of geoduck farms and adjacent sites have revealed no presence of microplastics in sediments. Geoduck gear is not exposed to extensive UV radiation, and monitoring and collection efforts help ensure gear does not break apart into smaller pieces. Brian Phipps testified that Taylor Shellfish reuses the same PVC tubes over multiple culture cycles, in some cases for more than 20 years. He testified that he has not observed tubes degrading or cracking due to natural events. The Applicant noted that the Shorelines Hearings Board has considered and rejected the claim that geoduck gear degrades into microplastics in numerous prior cases. *Appendix B.2; Exhibits S39, S48, and S51; Schoof Testimony; Phipps Testimony*.

62. The Applicant argued that the Appellants failed to demonstrate that the project, as proposed and mitigated by the MDNS, would cause significant environmental impacts resulting from marine debris. The MDNS contains numerous measures to ensure the Farm's gear is properly used, maintained, and accounted for. The Applicant and Taylor Shellfish provided testimony indicating that they can and will comply with the MDNS conditions. The proposal would use area nets to cover the PVC tubes, rather than individual cap nets, the latter of which comprised the majority of marine debris complained about by John Marshall. Brian Phipps testified that area netting does not come free, and that it is very effective at securing PVC tubes during weather events. *Exhibits C1.D and C1.M; Sohn Testimony; Cooper Testimony; Phipps Testimony*.

Issue D: Recreation

63. Regarding the Appellants' allegations of impact to recreation, the Applicant presented testimony from several witnesses. Diane Cooper testified that in decades of experience overseeing regulatory matters for Taylor Shellfish, she has not witnessed geoduck farms restricting the use of overlying waters. Ms. Cooper presented photographs showing boaters and kayakers recreating over geoduck farms without restriction. Brian Phipps provided similar testimony based on similar professional experience. Dr. Roser, whose tidelands are occupied by a geoduck farm located to the northeast of the proposed project site, testified that he and his family continue to enjoy the same recreational activities on their beach and on the water overlying the geoduck farm on their property as they did before the farm was installed, including boating, swimming, and tubing. Members of the public continue to kayak, boat, and tube on water above active geoduck farms, employing the same reasonable precautions they would take when recreating in other areas. All gear in use at the Farm is proposed and conditioned to protrude only a few inches above the

substrate and to be properly maintained and patrolled. Brian Phipps testified that no stakes or rebar would protrude above the netting; rebar holding down area nets on-site would be bent so that both ends are buried in the substrate. *Exhibits C1.M and S26; Cooper Testimony; Phipps Testimony; Roser Testimony*.

64. Addressing Appellants' concern that farming activities including planting and harvesting would deter recreation, Brian Phipps testified that active farming activities occur relatively rarely and calculated that they occur less than one hundredth of one percent of the time over a project's six-year culture cycle. Mr. Phipps testified that, in his decades of experience, he has never witnessed recreationists being precluded or discouraged from using an area during farming activities. If anything, he indicated that people are interested in and attracted to farming activities. Taylor Shellfish offers farm tours and provides other opportunities to learn about and enjoy the shellfish farms. *Phipps Testimony; Cooper Testimony*.

65. The Applicant argued that Appellants produced no evidence that the Farm would reduce wildlife populations. Contrary to Mr. Batker's assertions, the Applicant's fish and wildlife expert, Marlene Meaders, testified that recent studies performed on the potential environmental impacts of geoduck aquaculture looked at both relative and total abundance and included cumulative impact analysis. The U.S. Army Corps of Engineers recently completed a programmatic consultation under the ESA and Magnusson-Stevens Fishery Conservation and Management Act that analyzed new and existing shellfish farming activities throughout Washington State's marine waters, including geoduck aquaculture in south Puget Sound. Ms. Meaders testified that, by looking at all types of shellfish farming activities throughout the state, and considering both existing and new farms, this programmatic consultation is a cumulative impact analysis. Ms. Meaders testified that the programmatic consultation found most shellfish farming activities would have little or no impacts on listed species and critical habitat, and that while it found take for limited species, it identified terms and conditions that would effectively minimize potential impacts, such as ensuring shellfish farming gear is secured and siting new farms 16 feet away from native eelgrass beds. Ms. Meaders testified that the Farm complies with those terms and conditions. Other witnesses for Applicant, with experience and expertise in geoduck aquaculture, testified that the project should not cause wildlife reductions. Brian Phipps and Diane Cooper, who have decades of experience overseeing geoduck farms, testified that farms tend to result in increased wildlife use of a site. Dr. Louis Roser provided similar testimony, stating he has seen an increase in wildlife use at his property since a farm was installed. *Exhibits S30 and S31; Testimony of Marlene Meaders, Diane Cooper, Philip Bloch, Brian Phipps, and Louis Roser*.

Issue E: Aesthetics

66. The Applicant argued that Appellants failed to demonstrate the Farm would have probable significant adverse aesthetic impacts. The operation would be limited to the tidal elevations between -4.5 and +3 MLLW. Gear would only protrude a few inches from the substrate and would be in place for two years (or less) out of the six-year cycle. Marlene Meaders performed an analysis using highly conservative assumptions with

respect to how frequently the Farm's gear would be visible. Ms. Meaders testified that, under the most conservative assumptions, the entire Farm would be completely submerged for roughly 94% of daylight hours over a six-year culture cycle. The tidal elevation drops below -2 MLLW for only six hours during a given year, so a substantial majority of the Farm would almost never be visible. *Meaders Testimony.* Even when limiting the analysis to a single year when gear is present, the Farm would be completely submerged for more than 81% of daylight hours. Ms. Meaders testified that the information Appellant Patrick Townsend provided regarding summertime exposure shows an average exposure of approximately 21% when the data is summarized by daylight hours. Ms. Meaders testified that Mr. Townsend reported each exposure as a full day, regardless of the amount of time gear would be exposed during a given day, inflating the exposure value by roughly four times. *Exhibit S34; Meaders Testimony*.

67. In addition to being fully submerged for the majority of daylight hours, the operation would incorporate numerous measures to minimize potential aesthetic impacts. The MDNS requires (among other items): compliance with current geoduck farming environmental codes of practice; routine site inspections and patrols; maintaining gear deployment and removal records; the use of gear that blends into the surrounding environment; and removal of all gear within two years of installation. For four years out of the six-year culture cycle, the operation would be essentially invisible, with only occasional site visits to check on the health of the geoducks. *Exhibit C1.M; Phipps Testimony*.

68. The Applicant argued that Appellants failed to demonstrate that the Farm would result in significant impacts from lighting and noise. The MDNS prohibited permanent lighting, required temporary lighting to be directed to minimize off-site glare to the extent possible, allowed only the use of headlamps during nighttime operations, and required noise impacts to be minimized by using fully-enclosed and insulated motors with approved muffled exhaust systems. Brian Phipps testified that Taylor Shellfish double-insulates their motor boxes. Dr. Louis Roser testified that uses such as boats and personal watercraft cause more noise than geoduck aquaculture activities. *Exhibit C1.M; Roser Testimony*.

69. Regarding Appellants' assertion that a commercial geoduck operation is inherently inconsistent with the residential character of the neighborhood, the Applicant noted that geoduck aquaculture is an allowed use under the County's comprehensive plan, zoning code, and Shoreline Master Program. There are other commercial activities in the area, including Boston Harbor Marina to the west, and several existing geoduck farms nearby, including that on Dr. Roser's property to the east. Shellfish have been commercially farmed in Thurston County for over 100 years. The Applicant argued that community displeasure or opposition to the project is not a legal basis for overturning the MDNS. *Exhibit C1.N; Testimony of Diane Cooper, Brian Phipps, Patrick Townsend, and Louis Roser*.

Shoreline Substantial Development Permit-Specific Findings

70. At 1.65 acres in area, the subject property is an existing, legally non-conforming lot according to the RRR 1/5 zoning standards. The minimum lot size for the RRR 1/5 district is five acres and the subject lot is 1.65 acres in size. The subject property contains a single family home within the shoreline jurisdiction. *Exhibit C1.D.*

71. Pursuant to TCC 20.09A.020, agriculture is an allowed use in the RRR 1/5 zoning district, and the County Code includes "shellfish or fish farming; raising, harvesting, and processing of clams, oysters, and mussels" in its definition of agriculture. No land use permit is required by the zoning code for the proposed aquaculture operation. *Exhibit C1; Thurston County Code (TCC) 20.03.040(3).*

72. The Thurston County Comprehensive Plan (Comprehensive Plan) recognizes that aquaculture is of statewide and national interest and that, when properly managed, it can result in long-term over short-term economic and environmental benefits. The Comprehensive Plan provides that existing and future aquaculture operations should be encouraged by protecting these uses from incompatible development and impacts, while providing that adverse impacts from aquaculture should be minimized. *Exhibit C5, Thurston County Comprehensive Plan, Natural Resource Lands Section, Part II. Aquaculture Resources, pages 3-9 and 3-10.*

73. The subject tidelands are located within the County's shoreline jurisdiction and subject to the Shoreline Master Program for the Thurston Region (SMPTR). They are designated as Conservancy shoreline environment. A shoreline substantial development permit is required because the County has determined that the Farm constitutes "development" as defined in the SMPTR, and the project's fair market value exceeds the exemption threshold, which is currently $6,416. Mr. Kantas testified that many of the regulations in the SMPTR are intended to ensure aquaculture activities are protected from other potentially harmful uses. *Exhibit C1.*

74. The application materials submitted on December 18, 2014 included a joint aquatic use permit application (JARPA), the State Environmental Policy Act environmental checklist, the County's master application form, site plans, and a professionally prepared site-specific biological evaluation. *Exhibits C1, C1.B, C1.C, C1.D, C1.E, and C1.N.3.*

75. Prepared by ACERA, the biological evaluation (BE, dated December 2014) analyzed likely impacts from the proposed activities and their effects on critical habitat, forage fish, and endangered species in particular. There are multiple regulatory purposes for the BE: it is used by USACOE in evaluating the project's compliance with the federal Endangered Species Act (ESA); it is used by Washington Department of Ecology in evaluating project effects on essential fish habitat pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and the 1996 Sustainable Fisheries Act; and it is used by the County to assess compliance with requirements of the SMPTR, of SEPA, and applicable provisions of the County's critical areas ordinance. The ACERA report analyzed existing species and habitat within the Farm's action area; the effects of the

project on those species and habitat; and impact avoidance, minimization, and conservation measures. The BE concluded that the proposal may affect, but is not likely to adversely affect, listed species and habitat. *Exhibits C1 and C1.N.3*.

76. Resource Stewardship Staff accepted and reviewed the ACERA report in the normal course of application processing and determined that it satisfied County requirements for environmental review of the project's impacts. *Exhibit C1; Kantas Testimony*.

77. Notice of application was mailed to all owners of property within 500 feet of the site on March 12, 2015. *Exhibit C1.F*. There were 87 comment letters submitted, with many attached documents, in response to the notice of application. Public comments raised concerns including: allegations of property boundary trespass; impacts from site preparation, noise, lighting, and harvest activities; questions about geoduck aquaculture expertise, cumulative impacts, marine debris, potential wildlife entanglement, and compliance with the Shoreline Management Act; and impacts to eelgrass, property values, aesthetics, recreation, forage fish, salmonids, other wildlife, the benthic community, water quality, access, and fisheries. *Exhibit C1.O*.[3]

78. Agency comments were submitted by the Washington Department of Ecology (DOE) and the Washington Department of Fish and Wildlife (WDFW). DOE's comments contained general information that could apply to the project about toxics clean up and shorelands requirements. DOE also shared with the County a copy of a letter written in response to questions about aquaculture and the application by Patrick and Kathryn Townsend. WDFW informed Resource Stewardship Staff that WDFW did not have comments on the application. *Exhibits C1, C1.H, C1.I, C1.J, C1.K, and C1.L*.

79. The Applicant retained a separate consulting firm, Confluence Environmental Company, to review and respond to the public comments on the shoreline permit application. Confluence Environmental submitted two reports. The first report, dated November 20, 2015, provided a response organized by substantive area, with detailed citations, to the substantive issues raised by each public comment. The second report, dated February 26, 2016, provided responses to additional comments submitted by Kathryn Townsend and specifically addressed the Farm's potential impacts to eelgrass and bald eagles. *Exhibits C1.N.1 and C1.N.2*.

80. Review of all submitted materials occurred over the course of sixteen months. Department Staff issued an MDNS for the proposal on May 3, 2016. *Exhibit C1.M*. The appeal of that SEPA environmental threshold determination is detailed in previous findings.

81. Notice of the public hearing was sent to all property owners within 500 feet of the site and published in *The Olympian* and posted on-site on October 7, 2016. Notice of hearing

[3] These concerns are discussed in more detail in finding 82 below.

was also sent to all property owners who submitted written comments during review of the proposed shoreline permit. *Exhibits C1 and C2*.

82. Public comment offered at hearing and in written comments offered before and during the hearing relating to the shoreline substantial use permit application expressed the following (paraphrased) concerns:

Neighborhood character/Property Value Impacts: Many stated that they live in the area expressly for the enjoyment of a quiet, peaceful, beautiful estuary with an abundance of nature, wildlife, and recreational opportunities. They described the community feel of the area for residents and those visiting. Some state their privacy and lifestyles will be impacted. They feel the beautiful view of the cove will be hampered. Some believe their property values would be negatively impacted. Some asserted that they paid for the existing sanitation system and the geoduck farm would benefit from its use without any financial contribution.

Recreation impacts: Many cited the long history of recreational activities they, along with their neighbors and the public, enjoy in Zangle Cove. These include kayaking, canoeing, boating, swimming, fishing, and walking the beach. Many expressed concern that the proposed geoduck farm operation would greatly diminish the recreational uses currently enjoyed.

Impacts to wildlife, marine life, vegetation, and eelgrass: Many people commented that they are concerned for effects to the beach, tideland, and waterways and about harmful effects to wildlife, marine life, and vegetation. Several commented that the Department of Energy's eelgrass restoration project would be severely impacted. Some stated there would be overall negative impacts to the goal of many agencies in the recovery of salmon, tidelands, and ecosystem. Several asserted this type of commercial farm is in direct conflict with naturally occurring wildlife, marine life, vegetation, and eelgrass.

Noise, pollution, debris, plastics, and rebar impacts: Many expressed concern about the use of plastic pipes, rebar, and netting with regard to the harm to wildlife and marine life and the safety of those using the cove for recreational purposes. They also stated there would be negative impacts from the noise, workers, and barges. They commented that the commercial use invites pollution and debris into the waterways impacting the environment.

Impact to property rights: Some commented on the use under the proposed permit encroaching on neighboring tidelands and stated tideland boundary issues were not yet resolved. Appellant, Anneke Jensen, requested additional time for a survey questioning whether the tidelands between the Jensen and Sohn properties had been divided by Thurston County Short Plat No. SS-2070.

Monitoring: Some questioned what oversight and monitoring would be in place specifically to ensure the protection of native wildlife, eelgrass, and marine ecosystems and to preserve the character of the neighborhood.

Exhibit C1.O.1-C1.O.23, C1.O.25-C1.O.87, C6, and C8; Testimony of Lawrence Seale, John Marshall, Sharon Thompson, John Vanek, Kathy Knight, Patricia Bolding, Marybeth Duffy, Lola Flores, Edward Steinweg, Ian Vanek, Margaret Townsend, Melissa Townsend, Kathryn Townsend, Jean Vanek, Patrick Townsend, and David Batker.

83. Two individuals submitted comments in support of the permit. Derek King commented that aquaculture already occurs in Zangle Cove and doesn't negatively impact the environment. He contended the geoduck farm would provide a food source, jobs, enhanced biodiversity, and filter feeders which improve water quality for the entire ecosystem. Steve Wilson, a shellfish grower, noted that the proposed aquaculture would occur on private property, and he made statements in favor of property rights as well as shellfish farming. Based on his experience at his own farm, he testified that many people are fascinated by aquaculture and come to visit the farm he operates. Both men stated they do not believe recreational activities would be adversely impacted. *Exhibit C1.O.24; Wilson Testimony*.

84. After hearing testimony offered during the SEPA appeal and the public comment offered on the shoreline permit application, Department Staff testified that they had not been presented with any information that caused them to change the recommendation in the Staff Report, which had recommended approval of the requested SSDP subject to 11 conditions. However, Department Staff agreed that additional conditions discussed during testimony would be appropriately added to the recommendation for approval, including: a requirement to provide a lease agreement between the Applicant and a professional aquaculture operator prior to commencement of operations; an ongoing record of routine and post-storm site inspection cleanup activities, identifying project gear that came loose and was collected; and an ongoing record of Pacific herring spawn surveys, with the two ongoing records to be made available to Department Staff by the Applicant/operator upon request. *Exhibit C1; Kantas Testimony*.

85. In addition to the Applicant witness testimony offered during the SEPA appeal portion of the proceedings, which the Applicant had requested would also be considered in the SSDP permit portion, Diane Cooper of Taylor Shellfish testified and presented a report (Consistency Analysis) with supporting documentation discussing the project's consistency with the SSDP criteria for approval. Ms. Cooper testified that geoduck farming is supported by several state and federal laws and policies. She testified that Taylor Shellfish works diligently to ensure its operations are environmentally and socially responsible. In recognition of this effort, the company was recently awarded third-party certification from the Aquaculture Stewardship Council. The Applicant

concurred with the Staff Report's analysis of the proposal. *Cooper Testimony; Exhibit S53, with Appendices A-J*.

86. The following findings are entered to address concerns raised in public comment on the application. With respect to eelgrass: There is no eelgrass on the subject tidelands or in the immediate vicinity. An eelgrass restoration test site being monitored by DNR is located approximately 330 feet away from the project. It is not possible to know whether eelgrass will successfully establish at the test site. If eelgrass does successfully establish at the test site, the project is not likely to adversely impact it. Federal agencies have recently analyzed appropriate buffers from eelgrass for new shellfish farms and concluded that 16 feet is an appropriate, conservative safe harbor. *Bloch Testimony; Osborne Testimony; Exhibits C1.N.1, C1.N.2, S2, S4, S11, S30, S31, and S37*.

87. With respect to marine debris: As proposed and conditioned, the project is not likely to generate marine debris. The MDNS and recommended conditions of SSDP approval include various measures to ensure the Farm's gear is properly installed, maintained, and tracked. The proposal is to use area nets to cover the PVC tubes. When properly installed and maintained, area netting does not come free and is very effective at securing PVC tubes that may start to come loose during weather events. The Shorelines Hearings Board has recognized the use of proper farm management practices as effective for addressing concerns regarding marine debris. *Exhibits C1.D, C1.M, and C1.N.1; Sohn Testimony; Cooper Testimony; Phipps Testimony*.

88. With respect to toxics: There is no evidence in the record showing that the plastic gear used for the Farm would leach toxic chemicals. Applicant's toxicology expert, Dr. Rosalind Schoof, testified that while some plastics, such as those used in food packaging, have been found to leach chemicals that have estrogenic activity, the forms of plastics typically used in aquaculture were not included in the study submitted. She testified that PVC does not have plasticizers that are known to have estrogenic activity. The potential for PVC tubes to leach into the surrounding sediment has been previously studied and rejected in an appeal for a geoduck farm permit. Dr. Schoof testified that laboratory studies performed on PVC tubes used in geoduck aquaculture and sediment samples taken from active geoduck tube fields showed that PVC used in aquaculture would not release metals in excess of ambient concentrations. Exposure to chemicals originating from PVC tubes has not been demonstrated or shown to be likely. *Schoof Testimony; Exhibit S51;* SHB No. 11-019, at FF 11.

89. Regarding microplastics: The record contains no evidence showing that the Farm's geoduck gear poses a significant threat of degrading into microplastics and harming the environment. Dr. Schoof testified that aquaculture operations are not a significant source of marine plastic debris; most plastics in marine environments arise from land-based sources. Aquaculture gear does not break down easily to form microplastics because PVC and HDPE are stable plastics and marine environment conditions typically found in the Puget Sound slow the degradation of plastic, which is primarily driven by solar UV radiation. In contrast, gear is covered by water during most daylight hours, and there is

relatively low sunlight in Puget Sound. Lower temperatures and oxygen concentration in water environments further slow degradation rates of plastic. In 2011, substrate sediment samples were collected from the Foss Farm in Key Peninsula and examined by optical microscopy for microplastics particles. The farm had been in operation for 10 years and this was the second culture cycle with PVC tubes. No polymeric particles were detected in samples close to the tubes or in an updrift control area. Taylor Shellfish reuses PVC tubes over multiple culture cycles and employees testified that they do not observe the tubes degrading or breaking down. The Applicant noted that the Shorelines Hearings Board has already considered and rejected microplastics claims in numerous prior cases. *Exhibits S48 (Table 9, page 55), S39, and S51; Schoof Testimony; Phipps Testimony*; SHB No. 14-024, at FF 39-47; SHB No. 13-006c, at FF 41, COL 16; SHB No. 11-019, at FF 9, 11.

90. Regarding impacts to recreation: As a whole, the record contains no evidence of impacts to recreation aside from assertions made by project opponents, who state that they will have less desire to recreate in the area if the permit is approved. Testimony from the Applicant and from operators or leaseholders of other geoduck farms indicated that recreation is not deterred by the presence of aquaculture operations. Geoduck gear is physically present for not more than one third of the growth cycle and would protrude not more than a few inches from the substrate. While present, the gear is submerged for a substantial majority of the time and is visible for a limited percentage of the time. As proposed, the Farm would use "J" shaped rebar to hold down area nets, reducing risk to recreationists. Conditions of both MDNS and permit approval would require the gear to be properly secured and maintained. Active geoduck aquaculture activities occur very infrequently over the course of the culture cycle, calculated by the Applicant to be less than one hundredth of one percent of the time. Members of the public seem to be interested in and drawn towards farming activities for recreational purposes. *Cooper Testimony; Phipps Testimony; Roser Testimony; Exhibits C1, C1.N.2, and S26*.

91. With respect to aesthetics: Like any use or development, the proposed Farm would have aesthetic effects on the area. However, on balance, the evidence provided demonstrated that the project's aesthetic impacts were fully evaluated and minimized the through conditions in the MDNS and recommendations for SSDP approval. Because the tidal elevation drops below -2 MLLW for only six hours during a given year, a substantial majority of the Farm would almost never be visible. Having been prepared by persons familiar with aquaculture practices, the Applicant's gear visibility calculation carries more weight than the analysis prepared by neighboring property owner Patrick Townsend. The Applicant's analysis, based on highly conservative assumptions, demonstrated that the Farm's gear would be completely submerged for roughly 94% of daylight hours over a six-year culture cycle, and for more than 80% of the daylight hours over the course of a year while in place. When the gear is visible, it would not obstruct any views. The Applicant proposed the use of grey PVC and dark area netting. The MDNS contains conditions that would minimize the potential noise and lighting impacts

associated with farming activities. *Exhibits C1, C1.M, C1.N.2, S26, and S34; Phipps Testimony; Meaders Testimony.*

92. Regarding sediment impacts: The Applicant's Biological Evaluation, memoranda prepared in response to public comments, and the testimony of expert witness Dr. Phil Osborne demonstrate that suspended sediments caused by aquaculture activities are limited in size and duration and pose no threat to water quality, aquatic habitat, or eelgrass. Dr. Osborne testified that only a limited amount of sediment accumulates in and around geoduck gear, and this sediment is redistributed after the gear is removed without impacting other properties. *Exhibits C1.N.2, C1.N.3, S1, S2, S4, and S11; Osborne Testimony*.

93. Regarding water quality and aquatic habitat: Potential impacts to water quality and aquatic habitat were addressed in the Applicant's Biological Evaluation and consultant response to public comments. Geoducks are bivalve filter feeders that can improve water quality by removing excess nutrients and phytoplankton from the water column. Researchers have reported that aquaculture gear provides structured habitat that increases the diversity and abundance of benthic fauna and fish. *Exhibit C1.N.2*. Recent research in Washington State indicates that geoduck grow-out and harvesting activities have insignificant impacts to aquatic habitat, including benthic community and macrofauna. In 2007, the Legislature directed Washington Sea Grant to review existing scientific information and commission research studies related to geoduck aquaculture, according to six priorities. Washington Sea Grant issued a final report associated with this research program in November 2013, concluding, among other things, that geoduck harvest practices have minimal impacts on benthic communities of infaunal invertebrates, with no observed "spillover effect" in adjacent habitats, suggesting that disturbance is within the range of natural variation experienced by benthic communities in Puget Sound. Washington Sea Grant further found that differences in the structure of mobile macrofauna communities between planted areas with nets and tubes and nearby reference areas do not persist once nets and tubes are removed during the grow-out culture phase. The Shorelines Hearings Board has previously relied on this research in rejecting claims that geoduck aquaculture has significant environmental impacts, characterizing Washington Sea Grant's research as the most relevant scientific information currently available on this subject. *Exhibits C1.N.2, C1.N.3, C1.N.5, and S53, Appendices F, G, and H*; SHB No. 14-024 (FF 17).

94. With respect to fish and wildlife: Public comment raised concerns about wildlife becoming entangled in the Farm's area nets; however, this type of net has been used for over 40 years in shellfish aquaculture with very few instances of negative interactions. In one instance, a juvenile bald eagle latched its talons onto an area net and was quickly removed. This incident was reported to Washington Department of Fish and Wildlife, who determined area nets do not pose a significant threat to eagles. Potential concerns regarding entanglement can be effectively minimized through permitting conditions requiring gear to be properly secured, maintained, and monitored. The project site is not a documented forage fish spawning beach. If forage fish were to spawn at the subject

tidelands, the Farm would employ best management practices to otherwise avoid impacts to spawn. The Farm would occupy a minor portion of the intertidal area. If the gear is properly maintained, as required by conditions, PVC tubes and area nets are not expected to affect migration, access, or refugia pathways, and thus the project is not expected to adversely impact salmon species. The Applicant's Biological Evaluation determined that the Farm would not adversely impact other forms of wildlife, including marine mammals and wild shellfish. Applicant witnesses who manage and/or live upland of geoduck aquaculture operations testified that they do not see a reduction in wildlife use in and around farms and, if anything, see increased wildlife use. *Exhibits C1.N.1, C1.N.2, and C1.N.3; Cooper Testimony; Phipps Testimony; Roser Testimony.*

95. On the issue of cumulative impacts: Public comment challenged whether cumulative impacts of geoduck aquaculture have been adequately assessed; however, the record contains no evidence affirmatively demonstrating the Farm would have overlapping, cumulative impacts with other geoduck or shellfish farms. The closest shellfish farm is located approximately 0.2 miles away, and given the limited temporal and spatial impacts associated with geoduck aquaculture, the two farms would not be expected to have overlapping impacts. Federal resource agencies recently completed a cumulative impact analysis of existing and future shellfish farms throughout Washington State under the ESA and Stevens Fishery Conservation and Management Act. That analysis found that the vast majority of farming activities did not result in take of listed species, and that farm management measures such as siting new farms 16 feet or more from eelgrass and ensuring gear is properly secured, would effectively minimize potential adverse impacts. The proposed Farm would meet these conditions. The federal programmatic assessment found that, with these conservation measures, all shellfish farming activities (including future farming activities) in the state over the next 20 years would not have significant impacts to listed species. The Federal resource agencies' cumulative impact analysis identified several beneficial impacts from shellfish farming, including improved water quality, provision of habitat, and nitrogen sequestration. *Exhibits C1.N.2, C1.N.3, C5, S2, S30, and S31; Cooper Testimony; Meaders Testimony; Bloch Testimony.*

CONCLUSIONS

Jurisdiction:

The Hearing Examiner has jurisdiction to decide substantial shoreline development permit applications, pursuant to TCC 2.06.010(C) and (E), RCW Chapter 36.70, WAC 173-27, and Section One, Part V of the Thurston County Shoreline Master Program. The Hearing Examiner is authorized to decide appeals of environmental threshold determinations made pursuant to the State Environmental Policy Act, pursuant to TCC 2.06.010(E) and TCC 17.09.160(A).

Criteria and Standards for Review:

SEPA Appeal

The State Environmental Policy Act (Chapter 43.21C RCW or "SEPA") specifies the environmental review procedures the County must follow for proposals that may have an impact on the environment. *RCW 43.21C.030(b).* The SEPA threshold determination is a determination

as to whether a proposal is "likely to have a probable significant adverse environmental impact." *WAC 197-11-330*. Pursuant to WAC 197-11-330(3), in determining an impact's significance, the responsible official must take into account the following (among other considerations): that the same proposal may have a significant adverse impact in one location but not in another location; that several marginal impacts when considered together may result in a significant adverse impact; and whether a proposal may to a significant degree:

(i) Adversely affect environmentally sensitive or special areas, such as loss or destruction of historic, scientific, and cultural resources, parks, prime farmlands, wetlands, wild and scenic rivers, or wilderness;

(ii) Adversely affect endangered or threatened species or their habitat; [and/or]

(iii) Conflict with local, state, or federal laws or requirements for the protection of the environment; ....

The lead agency must make its threshold determination "based upon information reasonably sufficient to evaluate the environmental impact of a proposal." *WAC 197-11-335.*

For an environmental threshold determination to survive judicial scrutiny, the record must demonstrate that "environmental factors were adequately considered in a manner sufficient to establish prima facie compliance with SEPA," and that the decision to issue a MDNS was based on information sufficient to evaluate the proposal's environmental impact. *Pease Hill Community Group v. County of Spokane, 62 Wash.App. 800, 810 (1991).*

Clear error is the standard of review applicable to substantive decisions under SEPA. *Cougar Mt. Assocs. v. King County*, 111 Wn.2d 742, 747, (1988). The determination by the governmental agency is clearly erroneous only if the reviewing tribunal is left with "the definite and firm conviction that a mistake has been committed." *Id*. at 747 (quoting *Polygon Corp. v. Seattle*, 90 Wn.2d 59, 69, (1978)). The burden of proof is on the Appellant to show that the proposal will have probable, significant adverse environmental impacts. *Boehm v. City of Vancouver*, 111 Wn. App. 711, 719, (2002). The procedural determination of the County's Responsible Official shall be accorded substantial weight in appeals. *TCC 17.09.160.I.2; TCC 17.09.160.S; RCW 43.21C.075(3)(d); RCW 43.21C.090.*

Shoreline Substantial Development Permit

Pursuant to WAC 173-27-150, in order to be approved by the Hearing Examiner, an SSDP application must demonstrate compliance with the following:

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

(a) *Shoreline Management Act*

Chapter 90.58 RCW, 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 provides goals, policies, and regulatory standards for ensuring that development within the shorelines of the state is consistent the policies and provisions of Chapter 90.58 RCW.

The intent of the policies of RCW 90.58.020 is to foster "all reasonable and appropriate uses" and to protect against adverse effects to the public health, the land, and its vegetation and wildlife. 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. 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.

(b) 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).

(c) 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 existing 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 Two, VII, B, Conservancy Environment

Purpose. The intent of a Conservancy Environment designation is to protect, conserve and manage existing resources and valuable historic and cultural areas in order to ensure a continuous flow of recreational benefits to the public and to achieve sustained resource utilization. The preferred uses are nonconsumptive of the physical and biological resources of the area and activities and uses of a nonpermanent nature which do not substantially degrade the existing character of the areas. Nonconsumptive uses are those

uses which utilize resources on a sustained yield basis while minimally reducing opportunities for other future uses of the resources of the area.

Definition. The "Conservancy Environment" designates shoreline areas for the protection, conservation and management of existing valuable natural resources and historic and cultural areas. This environment is characterized by low-intensity land use and moderate-intensity water use with moderate to little visual evidence of permanent structures and occupancy. Sustained management of the pastoral, aquatic and forest resources, as well as rigidly controlled utilization of nonrenewable and other nonmineral resources which do not result in long-term irreversible impacts on the natural character of the environment are permitted. Intensity of recreation and public access may be limited by the capacity of the environment for sustained recreational use.

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 nonaquacultural development or uses proposed within or adjacent to an Aquacultural District, or which may be adversely affected by the aquaculture operation, restrictive covenants shall be filed which will inform prospective buyers of the proximity of the Aquacultural District.
7. Establishment of an Aquacultural District. Due to the importance of aquaculture to the Thurston County economy and the unique physical characteristics required to initiate or continue an operation, this section allows for the establishment of an Aquacultural District. The permit for an Aquacultural District will be issued for a specific area. Development authorized within the District will be generally described and located to provide for the range of development associated with the aquaculture operation. The applicant for a District will provide the boundaries of the use area, location and size of upland structures, maximum size, height and surface area coverage of in-water structures, and a description of activities in sufficient detail to determine possible impacts. The activities within an Aquacultural District shall be reviewed on a periodic basis to assure compliance with the permit. If the Administrator finds that an activity or environmental impact is substantially different than that considered in the permit approval then action shall be taken to bring the operation into compliance with the permit. The applicant must be the lessee or owner of the property proposed for inclusion within an Aquacultural District.

D. Environmental Designations and Regulations

Urban, Suburban, Rural, Conservancy and Natural-Aquatic Environments. All types of aquaculture are allowed, provided the operation is consistent with the policies and regulations of this program and chapter.

Conclusions Based on Findings:

1. SEPA Appeal

In order to prevail, the Appellants must prove that the MDNS was clearly erroneous in the face of the deference due to the SEPA Responsible Official's determination. *TCC 17.09.160.I.2; Cougar Mt. Assocs. v. King County*, 111 Wn.2d 742, 747, (1988). Washington courts have held that a determination of non-significance must be upheld if the record demonstrates that "environmental factors were adequately considered...and that the decision...was based on information sufficient to evaluate the proposal's environmental impacts." *Anderson v. Pierce Count*y, 86 Wn. App. 290 (1997). The record shows that the County spent approximately 17 months evaluating the project's potential environmental impacts, with the benefit of extensive public comment and agency involvement. The County's decision to issue the mitigated determination of non-significance was based on evidence sufficient to fully comprehend the project's impacts. The MDNS imposed appropriate and sufficient conditions to ensure the unavoidable impacts of the aquaculture operation are mitigated. Considering the record as a whole, the Appellants did not demonstrate that the Farm's operation would result in probable, significant adverse impacts to eelgrass, recreation, or aesthetics, or from plastics in the marine environment. Clear error has not been shown and the MDNS is affirmed.

A. The record offered does not demonstrate the Farm would result in probable significant adverse impacts to eelgrass. The evidence showed there is no eelgrass on the subject tidelands or in the immediate vicinity. The eelgrass restoration test site located 330 feet away which has a mixed history of success and failure. If the eelgrass restoration test site is successful, the record supports the conclusion that the proposal would not negatively impact it. Federal agencies currently require that new shellfish farms provide a minimum 16-foot buffer from eelgrass beds, and even that buffer can be reduced on an individual basis. Appellants' concern that installation of the Farm could prevent eelgrass from establishing at the Farm site is both speculative and contrary to the current science as presented by Applicant's witnesses. The Applicant's expert witnesses presented credible, persuasive evidence that the Farm would not adversely impact eelgrass. The evidence provided by the Appellants' environmental economics expert did not persuasively dispute evidence provided by the Applicant or refute the adequacy of the MDNS. *Findings 8, 9, 16, 17, 18, 19, 20, 21, 22, 23, 24, 46, 52, 53, 54, 55, 56, 57, 58, 86, 92, and 93.*

B. The record offered does not demonstrate that the Farm's use of plastics would result in probable significant adverse impacts to the environment. Appellants presented no evidence that geoduck gear leaches chemicals that have estrogenic activity, or that PVC tubes used in geoduck aquaculture would impact tidal action, sand movement, and currents impacting other properties in Zangle Cove. Testimony from experts in the fields of toxicology and tidal action credibly refuted these claims. The Appellants' concern that the Farm's gear could degrade into microplastics was not substantiated by credible evidence. To the contrary, the record submitted indicates that geoduck aquaculture gear does not readily break down in the environment, explaining why geoduck farmers regularly reuse their gear over multiple culture cycles without witnessing degradation.

Appellants also raised a concern with respect to marine debris at hearing; however, the record presented supports the conclusion that the MDNS and permit conditions would mitigate potential marine debris impacts to a point of non-significance. *Findings 8, 9, 25, 26, 27, 28, 29, 47, 52, 59, 60, 61, 62, 87, 88, and 89.*

C. The record provided does not demonstrate the project would result in probable significant adverse impacts to recreation. Appellants' witnesses alleged impacts to recreation and stated that they personally would be less inclined to recreate in Zangle Cove if the permit is approved; however, the displeasure of the surrounding community is not evidence of impacts and, standing alone, cannot be relied upon to deny a permit that otherwise satisfies approval criteria. The suggestion of Appellants' witness that one could gauge impacts by the strength of community opposition has been expressly rejected by Washington courts.[4] The Appellants' assertions of recreation impacts are balanced by evidence from the Applicant's witnesses, who have extensive experience managing or living upland from geoduck operations, and who presented testimony and photographic evidence demonstrating that geoduck aquaculture does not preclude or restrict recreational activities. The record shows that the Farm's gear would only protrude a few inches from the substrate and would not prevent use of the overlying water, that the gear would only be present for two years out of the six-year culture cycle, and that Farm activities would occur infrequently over the course of the entire culture cycle. The record also supports the conclusion that recreationists can be attracted to and interested in aquaculture activities. *Findings 8, 9, 30, 31, 32, 33, 34, 35, 36, 48, 52, 63, 64, 65, 90, 93, and 94*.

D. Appellants failed to demonstrate the Farm would result in probable significant adverse aesthetic impacts. The Farm's gear would only be present for two years out of the six-year culture cycle and would only protrude a few inches from the substrate. The entire Farm will be submerged during the vast majority of daylight hours; it would be essentially invisible for four years each culture cycle. The MDNS contains numerous conditions to minimize and mitigate the Farm's aesthetic impacts. The record submitted by the Appellants failed to demonstrate that these conditions are inadequate or to identify additional conditions that should be imposed. Again, while Appellants and some neighboring property owners are displeased that they would be able to see and/or hear Farm operations, community displeasure by itself is not a basis for overturning the MDNS. *Findings 8, 9, 37, 38, 39, 40, 41, 42, 49, 52, 66, 67, 68, 69, and 91*.

E. The record submitted demonstrated the County followed proper SEPA procedures and adequately reviewed the proposal. The County spent about 17 months reviewing the Farm before issuing the MDNS during which time they analyzed extensive literature pertaining to the proposed Farm specifically and geoduck aquaculture generally. The County accepted, reviewed, and considered comments from the public and other

[4] "While the opposition of the community may be given substantial weight, it cannot alone justify a local land use decision." *Sunderland Servs. v. Pasco*, 127 Wn.2d 782, 797 (1995); *Maranatha Mining, Inc. v. Pierce County*, 59 Wn. App. 795, 805 (1990).

agencies. After performing this extensive analysis, the County imposed 18 conditions in the MDNS to mitigate the Farm's impacts below a level of significance. The Applicant testified that it can and will comply with the conditions in the MDNS. *Findings 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 43, 44, 45, 46, 47, 48, 49, 50, 51, 75, 76, 77, 78, 79, 80, 81, 82, and 84.*

2. Shoreline Substantial Development Permit

A. The Farm is consistent with the Shoreline Management Act. Aquaculture has been identified by the Washington State Legislature, the Governor's Office, the National Oceanic and Atmospheric Administration, and the Shoreline Hearings Board as an activity of statewide and national interest that is a preferred, water-dependent use of the shoreline that can have beneficial environmental effects. Geoduck aquaculture is allowed outright in the underlying zoning district and, upon review for compliance with applicable provisions in the SMPTR, in the Conservancy shoreline environment. The Farm was reviewed for compliance with the requirements of SEPA, and an MDNS was issued. Conditions would ensure the Farm operates in compliance with applicable state and federal regulatory requirements and the Washington State Geoduck Growers Environmental Codes of Practice for Pacific Coast Shellfish Aquaculture, and that the Farm obtains the required Federal and state approvals prior to commencement of operations. As conditioned, the proposal is consistent with the policies of the SMA and is a reasonable and appropriate use of the shoreline. *Findings 1, 2, 3, 4, 5, 6, 7, 70, 71, 72, 73, 74, 75, 78, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, and 95; RCW 90.58.020*; *Cruver v. San Juan County and Webb*, SHB No. 202 (1976); *Penn Cove Seafarms v. Island County*, SHB No. 84-4 (1984); *Marnin and Cook v. Mason County and Ecology*, SHB No. 07-021 (Modified Findings, Conclusions, and Order, February 6, 2008); SHB No. 11-019.

B. As conditioned, the Farm would be consistent with the requirements of the Washington Administrative Code. State shoreline regulations place restrictions on the issuance of permits for any new or expanded building or structure of more than 35 feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences. The Farm's gear would protrude only a few inches from the substrate and would not obstruct the views of any residence. State shoreline regulations express a preference for water-dependent uses that utilize the shoreline for economically productive activities and protect the ecological functions of shorelines. *WAC 173-26-176(3)*. The Farm would be water-dependent, economically productive, and as conditioned, protective of the shoreline ecological functions. State regulations acknowledge aquaculture is an activity of statewide interest that, when properly managed, can result in long-term over short-term benefit and protect the resources and ecology of the shoreline. *WAC 173-26-241(3)(b)*. State shoreline regulations recognize commercial shellfish beds as critical saltwater habitat that requires a higher level of protection due to the important ecological functions they provide - a designation that no other commercial activity enjoys. *WAC 173-26-221(2)(c)(iii)(A)*. As conditioned, the Farm complies with applicable regulations

in the Washington Administrative Code. *Findings 1, 2, 3, 4, 5, 6, 7, 9, 75, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, and 95*.

C. As conditioned, the Farm complies with all applicable policies and regulations of the Shoreline Master Program for the Thurston Region. Regarding regional criteria, the Farm would not add new or alter existing public access to shorelines. The Farm was carefully analyzed for effects on the aquatic environment, with site specific studies that concluded the proposal is likely to result in insignificant impacts on habitat-forming processes, water quality, and sediment. Project impacts are anticipated to be localized in nature and of relatively short duration, similar to impacts from natural events. After planting, the tubes and netting would provide additional structure, creating habitat for some species while in place. While feeding, geoducks remove excess nutrients from the water, improving water quality. After harvest, the site is anticipated to recover quickly. The proposal may affect but is not likely to adversely affect threatened and endangered species and critical habitat for endangered species and their prey. The findings of the site-specific studies are consistent with the final results of the Washington Sea Grant study, which evaluated geoduck aquaculture at the behest of the State Legislature. Conditions imposed through state and federal regulatory programs, the MDNS, and the instant shoreline permit approval would ensure that the Farm would not result in ecological harm. The record does not contain evidence showing that the subject property is notable for ecological values or historic qualities. The Farm was reviewed for compliance with the requirements of the State Environmental Policy Act and an MDNS was issued. The MDNS was appealed, but the Appellants failed to demonstrate that the Farm, as mitigated, would result in any probable significant impacts. The Farm would be required to obtain a section 404 Clean Water Act (e.g. Nationwide 48) permit from the U.S. Army Corps of Engineers. This permit is only issued if impacts to ESA-listed species, navigation, and water quality are mitigated or found to be not significant by the Corps. The section 404 Clean Water Act permit also requires review by the Washington State Department of Ecology for issuance of a Section 401 water quality certification. The Thurston County Environmental Health Division recommended approval of the application. The Washington Department of Fish and Wildlife raised no concerns with the Farm. The Farm site is subject to approval by the Department of Health. *Findings 1, 2, 3, 4, 5, 6, 7, 9, 43, 44, 45, 46, 47, 48, 49, 50, 51, 72, 75, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, and 95*.

D. The proposal is consistent with the policies applicable to the Conservancy shoreline environment. It proposes to utilize shoreline resources on a sustained yield basis and would not reduce opportunities for other future uses of the area. The Farm is located on private tidelands and would not preclude or restrict the use of overlying waters at high tide. The Property is not notable for historical or cultural values. A condition of the MDNS requires the Applicant to contact state and County offices and affected Tribes if historic artifacts are observed during any phase of the operation. Aquaculture is permitted in the Conservancy Environment. Regarding the impacts of other water-dependent shoreline uses, such as marinas or industrial ports, the project is a moderate to low intensity use of the shoreline. It would promote economic development of the

shoreline without interfering with public access, existing circulation systems, recreational uses, intensive public use, or historic and cultural values. As concluded in the SEPA appeal above, the Farm would not adversely impact the shoreline environment and would provide some beneficial values. As conditioned, the Farm would conserve and protect the site while managing its capacity for sustainable resource use. *Findings 1, 2, 3, 4, 5, 6, 7, 9, 75, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, and 95*.

E. The proposal is consistent with the aquaculture activities goals and policies of the SMPTR. The Farm would create employment opportunities and strengthen an existing shellfish growing operation that employs local residents in producing sustainable goods in high demand for export. It would utilize a site that is highly suitable for geoduck aquaculture. The Farm would not interfere with commercial navigation or with shoreline access by neighboring property owners. Shellfish equipment would be in place for approximately 24 months and would be visible in the intertidal zone for less than 20% of the time that it is in place, and visible only approximately 6% out of the entire culture cycle. No beach structures or storage are proposed. The Farm was carefully reviewed for impacts to the environment. Evidence in the record shows the Farm would have localized impacts of a short duration. As conditioned, it may affect but is not likely to adversely affect the plants, animals, and physical characteristics of the shoreline. *Findings 1, 2, 3, 4, 5, 6, 7, 75, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, and 95*.

F. As conditioned, the project would be consistent with the applicable general regulations of the SMPTR's aquaculture section. The use is shoreline dependent. No excavation is proposed that could result in erosion. Evidence shows that geoduck farming results in minor, short-term impacts on intertidal sediments. No processing plant, residential development, land clearing, or nonacquacultural development is proposed. *Findings 1, 2, 3, 4, 5, 6, 7, 75, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, and 95*.

G. Cumulative impact analysis is not required for shoreline substantial development permits pursuant to the Shoreline Management Act or the Shoreline Master Program for the Thurston Region. The Shoreline Hearings Board has concluded that each geoduck aquaculture proposal must be reviewed on the merits of its own site, and only in projects proposed on shorelines of statewide significance or in cases where there is proof of impacts that risk harm to habitat, loss of community use, or a significant degradation of views or aesthetic impacts, are cumulative impacts analyses warranted. Credible scientific evidence in the record supports the conclusion that geoduck aquaculture generally and, as proposed to be operated at this site specifically, is not a significant concern for long-term risk to the plants, animals, and physical characteristics of the shoreline. On the contrary, the evidence demonstrates that effects of the proposal would be highly localized and short in duration. Studies and articles offered in opposition to the application do not controvert the findings of the site-specific evaluations in evidence and the findings of the Washington Sea Grant research program. No substantial evidence was offered in support of alleged impacts to recreational values and community use of the shoreline. The Farm would not interfere with navigation, existing public recreational facilities, or community use of the tidelands via boats, kayaks, or other means. The Farm

would not obstruct views, would be completely submerged for the vast majority of daylight hours, and would be required to comply with numerous conditions to minimize and mitigate aesthetic impacts. The record contains no evidence demonstrating that the Farm would result in cumulative impacts. Federal agencies recently completed a programmatic consultation on existing and future shellfish farming activities throughout the state. This consultation, which is functionally a cumulative impact analysis, indicates that potential adverse impacts can be addressed through specific terms and conditions with which this Farm would comply, and that shellfish aquaculture throughout the state does not have significant adverse impacts. No further analysis of cumulative impacts is required or warranted under the SMA for this specific project. *Findings 1, 2, 3, 4, 5, 6, 7, 75, 78, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, and 95;* SHB No.11-019 (2011).

H. In addition to the 18 MDNS mitigation measures, the Staff Report recommended 11 conditions of SSDP approval. The following three additional conditions are appropriate to ensure that the Farm would be operated as proposed and in compliance with the conditions of the MDNS:

    a. Prior to installation of the Farm, the Applicant will deliver to Thurston County Resource Stewardship Department a copy of the lease agreement with the farm operator acknowledging that the Applicant and operator are each responsible for ensuring the Farm is managed in compliance with the Farm's application materials and conditions of approval.

    b. Site visits will be made to check and clean up any debris in the Farm vicinity. These will occur at least once every week. In addition, after major storm events, a site visit will also be conducted. The permittee shall maintain a record with the following information and the record shall be made available upon request to Thurston County Resource Stewardship Department: date of patrol, location of areas patrolled, description of the type and amount of retrieved debris, and other pertinent information.

    c. The permittee shall maintain a record of Pacific herring spawn surveys, including the date and time of surveys; the area, materials, and equipment surveyed; results from the survey; etc. The record of Pacific herring spawn surveys shall be made available upon request to the Thurston County Resource Stewardship Department.

    Findings 9 and 84; Cooper Testimony; DeNike Argument.

DECISIONS

Because the Appellants did not satisfy their burden of proof to show that issuance of the MDNS was clear error, the SEPA Appeal is **DENIED.**

Based on the foregoing findings and conclusions, the 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. The Applicant shall comply with all conditions of the Mitigated Determination of Non-Significance, dated May 3, 2016.

3. Aquaculture preparation, planting, maintenance, and harvesting shall be in compliance with the most current version of the Washington State Geoduck Growers Environmental Codes of Practice for Pacific Coast Shellfish Aquaculture, except as otherwise conditioned or required by Thurston County Resource Stewardship or any other required government permits.

4. Bed preparation must commence within two years, and all tubes and netting 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.

5. No physical work on the aquaculture beds shall be initiated until all required State and Federal permits and approvals have been granted.

6. The Applicant shall ensure that all anti-predator nets and tubes are secured in place to prevent them from escaping from the project area.

7. Physical activities on the beach pursuant to this permit shall not begin and are not authorized until 21 days from the date of filing of the Hearing Examiner's decision with the Department of Ecology, as required in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within 21 days from the date of filings have been terminated, except as provided in RCW 90.58.140(5)(a) and (b).

8. There shall be no removal of shrubbery or fallen trees located in the buffer of the toe of the marine bluff or on the beach during placement of the bed.

9. All activities related to the proposed geoduck bed shall be in substantial compliance with the site plan submitted and made part of the Staff Report, including modifications as required by this approval. Any expansion or alteration of this use will require approval of a new or amended Shoreline Substantial Development Permit.

10. If access to the beach for planting geoduck tubes, netting, pumps, or any other equipment will be over the upland portion of this property, it will need to be done so as to prevent any vehicle or equipment travel, or parking of any portion of the septic system or system components, near the well. Staging of equipment and materials for this project also should not be done on any portion of the septic system or system components.

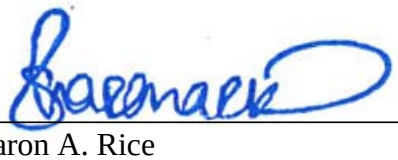
11. A Construction Stormwater Permit from the Washington State Department of Ecology may be required. Information about the permit and the application can be found at: http://www.ecy.wa.gov/programs/wq/stormwater/construction/permit.html. It is the Applicant's responsibility to obtain this permit if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

12. Prior to installation of the Farm, the Applicant will deliver to Thurston County Resource Stewardship Department a copy of the lease agreement with the farm operator acknowledging that the Applicant and operator are each responsible for ensuring the Farm is managed in compliance with the Farm's application materials and conditions of approval.

13. Site visits shall be made to check and clean up any debris in the Farm vicinity. These will occur at least once every week and after major storm events. The permittee shall maintain a record with the following information, and the record shall be made available upon request to Thurston County Resource Stewardship Department: date of patrol, location of areas patrolled, description of the type and amount of retrieved debris, and other pertinent information.

14. The permittee shall maintain a record of Pacific herring spawn surveys, including the date and time of surveys; the area, materials, and equipment surveyed; results from the survey; etc. The record of Pacific herring spawn surveys shall be made available upon request to the Thurston County Resource Stewardship Department.

DECIDED February 17, 2017.



Sharon A. Rice
Thurston County Hearing Examiner

Appendix A
Pre-Hearing Documents Submitted by counsel

1. Order Setting Hearing Date and Pre-Hearing Schedule, dated July 15, 2016
2. Thurston County's Notice of Appearance, dated June 21, 2016
3. Applicant's Notice of Appearance, dated July 12, 2016
4. Applicant's Motion for Dismissal and Summary Judgment, dated August 11, 2016
    a) First Declaration of Jessica Cote, dated August 11, 2016
    b) First Declaration of Philip Bloch, dated August 11, 2016
    c) First Declaration of Rosalind A. Schoof, dated August 10, 2016
5. Appellants' Response to Motion for Dismissal and Summary Judgment, dated August 22, 2016
6. Applicant's Reply on Motion for Dismissal and Summary Judgment, dated August 26, 2016
    a) Second Declaration of Rosalind A. Schoof, dated August 25, 2016
    b) First Declaration of Marlene Meaders, dated August 26, 2016
7. Order Ruling on Applicant's Motion to Dismiss, dated September 2, 2016
8. Applicant's Witness List, dated September 16, 2016
9. Applicant's Exhibit List, dated September 16, 2016
10. Appellants' Witness List, dated September 16, 2016
11. Appellants' Exhibit List, dated September 16, 2016
12. Thurston County's Witness List, dated September 15, 2016
13. Thurston County's Exhibit List, dated September 15, 2016
14. Thurston County's Amended Exhibit List, dated September 29, 2016
15. Motion to Stay Proceedings, dated October 4, 2016
16. Thurston County's Response to Motion to Stay Proceedings, dated October 7, 2016
17. Applicant's Response to Motion to Stay Proceedings, dated October 7, 2016
    a) Amended First Declaration of Diane Cooper, dated October 7, 2016
18. Order Ruling on Motion to Stay Proceedings, dated October 13, 2016
19. Addendum to Appellant's Witness and Exhibit Lists, dated October 7, 2016
20. Appellant's Exhibit List, dated October 10, 2016
21. Declaration of Robert M. McCarthy, dated October 10, 2016
22. First Addendum to Applicant's Exhibit List, dated October 10, 2016
23. First Addendum to Applicant's Witness List, dated October 10, 2016

24. Amended First Declaration of Marlene Meaders and Cover Letter, dated October 7, 2016
25. Appellants' Final Amended Exhibit List, dated October 14, 2016
26. Second Addendum to Applicant's Exhibit List, dated January 11, 2017

Appendix B
Post-Hearing Documents Submitted by Counsel

1. Appellants' Closing Memorandum, dated January 20, 2017
2. Applicant's Closing Brief, dated January 20, 2017
3. Thurston County's Closing Argument, dated January 20, 2017
4. Appellants' Response to Closing Arguments of County and Applicant, dated January 27, 2017
5. Applicant's Response to Closing by County and Appellants, dated January 27, 2017
6. Appellants' proposed findings, dated February 3, 2017
7. Applicant's proposed findings, dated February 3, 2017

Appendix C, Exhibit C1.O
Comment Letters Received in Response to the Notice of Application

1. Kathy Knight, including attachments, dated March 27, 2015
2. Bob Warfield, dated March 10, 2016
3. Scott and Mary S. Oliver, dated December 24, 2015
4. Joel Lockwood, dated March 5, 2016
5. Marlene Inverso, dated March 5, 2016
6. Melody Mayer, dated March 3, 2016
7. John T. and Reita M. Marshall, dated March 7, 2016
8. Wendy Owens, dated March 13, 2016
9. Kathy Knight, dated March 9, 2016
10. Kathryn Townsend, including attachment, dated February 10, 2016
11. Scott and Mary S. Oliver, dated December 24, 2015
12. Scott and Mary S. Oliver, dated April 14, 2016
13. Patrick and Kathryn Townsend, including attachments, dated February 23, 2016
14. Kathy Knight, dated March 27, 2015
15. Alan Javel, dated March 30, 2015
16. Laura Hendricks, dated May 5, 2015

17. Laura Hendricks, dated March 31, 2015
18. Patrick and Kathryn Townsend, including attachments, dated April 1, 2015
19. Kevin, Cam and Katharine Foster-Keddie, dated March 18, 2015
20. John T. and Reita M. Marshall, dated March 31, 2015
21. Kathryn and Patrick Townsend, dated April 1, 2015
22. Patricia A. Bolding, dated April 1, 2015
23. Abby Ruskey, dated April 1, 2015
24. Derek King, dated March 31, 2015
25. Scott and Mary Oliver, dated March 29, 2015
26. John and Jean Vanek, dated March 31, 2015
27. Jonathan Knight, dated March 26, 2015
28. Connie Parker, dated March 26, 2015
29. John and Reita Marshall, dated March 23, 2015
30. Thurston County Agricultural Advisory Committee, including attachments, dated March 26, 2015
31. John and Jean Vanek, including attachments, dated March 26, 2015
32. Lawrence Seale and Cynthia Walker, dated March 26, 2015
33. Trevor A. Zandell, Swanson Law Firm, PLLC, on behalf of Anneke Jensen, dated March 26, 2015
34. Al Brown, dated March 30, 2015
35. Harry W. Branch, dated March 30, 2015
36. Cindi and Greg Ruhl, dated March 30, 2015
37. Bret Childers, dated March 29, 2015
38. Sonia J. Unbehend, dated March 27, 2015
39. John Newman, dated March 30, 2015
40. Patrick and Kathryn Townsend, dated March 19, 2015
41. Patrick and Kathryn Townsend, including attachments, dated March 30, 2015
42. Patrick and Kathryn Townsend, including attachment, dated March 16, 2015
43. John T. Marshall, dated February 10, 2015
44. Kathy Knight, dated February. 11, 2015
45. Patrick and Kathryn Townsend, dated January 27, 2015
46. Patrick Townsend, dated January 13, 2015

47. Patrick and Kathryn Townsend, including attachments, dated February 25, 2015
48. Patrick and Kathryn Townsend, including attachments, dated February 20, 2015
49. John T. and Reita M. Marshall, dated March 31, 2015
50. Susan Macomson, dated March 31, 2015
51. Kathryn Townsend, dated February 10, 2016
52. Kathy Knight, including attachments, dated March 9, 2016
53. Patrick and Kathryn Townsend, including attachments, dated March 7, 2016
54. Cynthia Walker, dated May 11, 2016
55. Trevor A. Zandell, Swanson Law Firm, on behalf of Anneke Jensen, dated June 10, 2015
56. Abby Ruskey, dated July 28, 2015
57. Kathryn Townsend, dated March 3, 2016
58. Patrick and Kathryn Townsend, including attachments, dated January 19, 2016
59. Kathy Knight, dated August 24, 2015
60. Patrick and Kathryn Townsend, including attachments, dated January 11, 2016
61. Marlene Meaders, dated August 7, 2015
62. Patrick and Kathryn Townsend, including attachment, dated February 23, 2016
63. Sally J. Cloninger, dated March 24, 2015
64. Nicole Lockwood, dated March 24, 2015
65. Paul Allen, dated March 29, 2015
66. Rose E. Marquis, dated March 29, 2015
67. Nancy Eggleston, dated March 29, 2015
68. Marybeth Duffy, dated March 29, 2015
69. Jeff Nejedly, dated March 29, 2015
70. Bob Warfield, dated March 28, 2015
71. Karen G. Pyle, dated March 28, 2015
72. Lawrence Seale and Cynthia Walker, dated March 26, 2015
73. Kathy Knight, dated March 27, 2015
74. Annette McQueen, dated March 26, 2015
75. Trevor A. Zandell, Swanson Law Firm, dated March 26, 2015
76. Kim Kelley, dated March 24, 2015
77. David Wyrembek, dated March 25, 2015

78. Sally J. Cloninger, dated March 24, 2015
79. Nicole Lockwood, dated March 24, 2015
80. Anita Solt, dated March 24, 2015
81. Susan Lund, dated March 24, 2015
82. Klaus and Carol Jade, dated March 24, 2015
83. K. Carlsen, dated March 24, 2015
84. Kevin, Cam and Katharine Foster-Keddie, dated March 18, 2015
85. Craig Banner, dated March 17, 2015
86. Edward W. Steinweg, M.D. and Lasha H. Steinweg, dated March 17, 2015
87. Michael and Yukiko Freeman, dated March 17, 2015

Appendix D
Comment letters and emails received in response to the MDNS dated May 3, 2016

1. Katherine J. Knight, including attachment, dated May 15, 2016
2. Kathryn and Patrick Townsend, including attachment, dated May 17, 2016
3. John T and Reita M. Marshall, received dated May 17, 2016
4. John Kauffman, dated May 16, 2016
5. Comments on MDNS including 70 signatures, dated May 17, 2016
6. Laura Hendricks, including attachments, dated May 17, 2016
7. Kris Mansfield, dated May 17, 2016
8. John T and Reita M. Marshall, dated May 15, 2016
9. Kathy Knight, dated May 15, 2016
10. Elizabeth Morgan, dated May 15, 2016
11. Cherie Shallain, dated May 16, 2016
12. Gail Sheikhizadeh, dated May 16, 2016
13. Kathryn Townsend, dated May 16, 2016
14. Kathy Knight, dated May 20, 2016
15. Nancy Muggoch, dated May 16, 2016
16. Michelle Rushton, dated May 16, 2016
17. Blaine A. Snow, dated May 18, 2016
18. Laura Hendricks, dated May 17, 2016
19. Comments on MDNS including 4 signatures, received May 17, 2016

20. Abby Ruskey, dated May 15, 2016
21. Cindi and Greg Ruhl, dated May 15, 2016
22. Jessica M. Jensen, Jessica Jensen Law P.S., including attachments, dated March 8, 2016
23. Jessica M. Jensen, Jessica Jensen Law P.S., including attachments, dated March 18, 2016
24. Jessica M. Jensen, Jessica Jensen Law P.S., including attachments, dated May 17, 2016
25. Kathryn and Patrick Townsend, including attachments, dated March 17, 2016
26. Jessica M. Jensen, Jessica Jensen Law P.S., including attachments, dated May 20, 2016

Appendix E
Comments and attached articles and reports submitted during the public comment period at the October 17, 2016 Hearing

1. Kathy Knight
2. Patricia Bolding
3. Hanna Lauth
4. Ian Lauth
5. Debbie Clarke Lennon
6. Robert Lauth
7. John T. Marshall
8. Pat Lisoskie
9. Margaret Townsend
10. Edward Steinweg
11. Lawrence C. Seale and Cynthia L. Walker
12. Barbara Gross and Blaine Snow
13. Patrick and Kathryn Townsend
14. Heather McFarlane
15. Kris Mansfield
    a. Matthew Cole et al., *Microplastics as Contaminants in the Marine Environment*, Marine Pollution Bulletin 62 (2011)
    b. Lisbeth Van Cauwenberghe and Colin R. Janssen, *Microplastics in Bivalves Cultured for Human Consumption*, Journal Environmental Pollution 193 (20l4)
    c. Carlo Giacomo Avio et al., *Pollutants Bioavailability and Toxicological risk from Microplastics to Marine Mussels*, Journal Environmental Pollution (2015)

d. Jörg Oehlmann et al., *A Critical Analysis of the Biological Impacts of Plasticizers on Wildlife*, The Royal Society Publishing (2009)

e. Report prepared by National Marine Fisheries Service titled "Endangered Species Act Section 7 Formal Biological Programmatic Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for Shellfish Aquaculture Activities in Washington State" (COE Reference Number NWS- 2014-12)

f. Kitsap Sun news article titled "Planned Geoduckfarm Draws Objections"

g. Declaration of M. D. Edwards

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 Resource Stewardship 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 $669.00 for a Request for Reconsideration or $890.00 an Appeal. Any Request for Reconsideration or Appeal must be received in the Permit Assistance Center on the second floor of Building #1 in the Thurston County Courthouse complex 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.

THURSTON COUNTY
WASHINGTON
SINCE 1852

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 ☐ $669.00 for Reconsideration or $890.00 for Appeal. Received (check box): Initial _____ Receipt No. _____
Filed with the Resource Stewardship Department this _____ day of _____ 20__.

Exhibit B

THURSTON COUNTY
WASHINGTON
SINCE 1852

COUNTY COMMISSIONERS

John Hutchings
District One
Gary Edwards
District Two
Bud Blake
District Three

RESOURCE STEWARDSHIP DEPARTMENT

Creating Solutions for Our Future

Brent A. Butler, AICP, Director

MEMORANDUM

CERTIFIED

TO: Shorelands Permit Coordinator
Shorelands and Environmental Assistance Program
Department of Ecology – Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

AND TO: Washington State Attorney General
Ecology Division
1125 Washington St. SE
Olympia, WA 98504-0100

AND TO: Parties of Record

FROM: Cami Petersen
Land Use Clerk

DATE: May 18, 2017

SUBJECT: **Project No. 2014108800, Sequence No. 14-129647 XC, ChangMook Sohn**

Attached is a copy of the Decision of the Board of Thurston County Commissioners regarding Shoreline Substantial Development Permit (SSDP) # 2014108800.

Any person aggrieved by this decision may seek review from the shorelines hearings board by filing a petition for review pursuant to chapter 90.58 RCW.

Please contact me at (360) 754-3355 extension 6348 if you have questions regarding this Decision.

BEFORE THE BOARD OF COUNTY COMMISSIONERS
THURSTON COUNTY, WASHINGTON

In Re the Matter of, **ChangMook Sohn** for a Shoreline Substantial Development Permit for an Intertidal Aquaculture Operation on Private Tidelands at 930 – 76th Avenue NW, Olympia, WA	Appeal No. 16-106159 VE Project No. 2014108800 DECISION

THIS MATTER came before the Board of County Commissioners (Board) on May 3, 2017, as a result of an appeal filed by Patrick and Kathryn Townsend, and Anneke Jensen, of the hearing examiner's decision dated February 17, 2017. This decision approved, subject to conditions, Mr. Sohn's application for a shoreline substantial development permit to develop an intertidal geoduck aquaculture operation on 1.1 acres of private tidelands addressed as 930 – 76 th Avenue NW, Olympia. The Appellants argue the hearing examiner erred because she failed to consider the proposed aquaculture's impact on eelgrass, recreation and aesthetics and environmental pollution caused by plastics used in the aquaculture operation.

The issue before the Board is whether the evidence presented to the hearing examiner demonstrated that Mr. Sohn's application complied with the applicable shoreline substantial development permit criteria.

The Board reviewed the hearing examiner's decision, and the evidence presented to the hearing examiner. In addition, two Board members made a declaration, pursuant to the Appearance of Fairness Doctrine, that since the time this appeal was filed with the Board, that they have had no ex-parte contact with any of the parties about this case and that they

could fairly and impartially judge this case on the record and pursuant to applicable law. Commissioner Edwards recused himself from this case due to a familial relationship with one of the parties, and limited ex parte contact with a member of the public.

While the Board understands the Appellants concerns, it recognizes that the Board must examine the hearing examiner's approval of the substantial development permit based only on the record in this case. A review of this record reflects that the findings made by the hearing examiner are supported by substantial evidence in the record. Further the conclusions of law are supported by the findings, the evidence and the applicable law.

IT IS HEREBY ORDERED AS FOLLOWS:

The hearing examiner's decision is affirmed.

DATE:

5-18-17

ATTEST:

Cami S. Petersen
Clerk of the Board

BOARD OF COUNTY COMMISSIONERS
Thurston County, Washington

Bud Blake
Chair

Vice-Chair

Commissioner

Exhibit C

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

AUG 0 6 2018

Regulatory Branch

Mr. Changmook Sohn
Pacific Northwest Aquaculture LLC
930 76th Avenue Northeast
Olympia, Washington 98506

Reference: NWS-2015-19
Pacific Northwest
Aquaculture LLC

Dear Mr. Sohn:

We have reviewed your application to establish a commercial shellfish aquaculture operation on 1.1 acres, cultivated in 0.90 acre of geoduck clam in Dana Passage at Olympia, Thurston County, Washington. Based on the information you provided to us, Nationwide Permit (NWP) 48, *Commercial Shellfish Aquaculture Activities* (Federal Register January 6, 2017, Vol. 82, No. 4), authorizes your proposal as depicted on the enclosed drawings dated May 31, 2018.

In order for this authorization to be valid, you must ensure the work is performed in accordance with the enclosed *NWP 48, Terms and Conditions* and the following special conditions:

a. This U.S. Army Corps of Engineers (Corps) permit does not authorize you to take a threatened or endangered species. In order to legally take a listed species, you must have a separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or ESA Section 7 consultation Biological Opinion with non-discretionary "incidental take" provisions with which you must comply). The Programmatic Biological Opinions for Shellfish Activities in Washington State Inland Marine Waters (BOs) - the National Marine Fisheries Service (NMFS) and Errata, dated September 2, 2016 and September 30, 2016, respectively (NMFS Reference Number WCR-2014-1502), and the U.S. Fish and Wildlife Service (USFWS), dated August 26, 2016 (USFWS Reference Number 01EWFW00-2016-F-0121), contain mandatory terms and conditions to implement the reasonable and prudent measures associated with the specified "incidental take". The authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the BOs. These terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BOs, where a take of the listed species occurs, would constitute an unauthorized take, and it would

also constitute non-compliance with your Corps permit. The USFWS and NMFS are the appropriate authorities to determine compliance with the terms and conditions of its BO and with the ESA

b. In order to meet the requirements of the Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MSA), you must comply with the conservation measures in the Programmatic Biological Opinions for Shellfish Activities in Washington State Inland Marine Waters (BOs) - the National Marine Fisheries Service (NMFS) and Errata, dated September 2, 2016 and September 30, 2016, respectively (NMFS Reference Number WCR-2014-1502), and the U.S. Fish and Wildlife Service (USFWS), dated August 26, 2016 (USFWS Reference Number 01EWFW00-2016-F-0121). These conservation measures are included in the enclosed document, Enclosure 1, Conservation Measures for Activities Covered under the Shellfish Activities Programmatic Consultation Biological Opinions. If you cannot comply with these conservation measures, you must, prior to commencing construction, contact the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch for individual ESA/MSA consultation. The USFWS and NMFS are the appropriate authorities to determine compliance with the ESA.

c. Forage fish may be spawning in the project area during the allowed work window. If work, including bed preparation, maintenance, and harvest activities, are occurring between June 30 and April 1, in order to meet the requirements of the Endangered Species Act and for the protection of sand lance and surf smelt, prior to construction, you must have an approved biologist confirm, in writing, that no forage fish are spawning in the area. For information on approved biologists for conducting forage fish surveys, contact the Washington Department of Fish and Wildlife (WDFW). If a WDFW Habitat Biologist has volunteered to conduct a survey as part of the Hydraulic Project Approval, this survey may be submitted to the U.S. Army Corps of Engineers (Corps). The letter or memorandum from the approved biologist or the WDFW Habitat Biologist must include the date of the inspection, the forage fish spawning findings, and must be provided to the Corps, Seattle District, Regulatory Branch, FAX (206) 764-6602 (or via email to brandon.c.clinton@usace.army.mil), prior to construction. Address the letter or memorandum to Brandon Clinton and include reference number NWS-2015-19. If the approved biologist or WDFW Habitat Biologist confirms that no forage fish are spawning in the project area, you have two weeks from the date of the inspection to complete all work below Mean Higher High Water.

We have reviewed your project pursuant to the requirements of the Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act and the National Historic Preservation Act. We have determined this project complies with the requirements of these laws provided you comply with all of the permit general and special conditions.

Please note that National General Condition 21, *Discovery of Previously Unknown Remains and Artifacts*, found in the *Nationwide Permit Terms and Conditions* enclosure, details procedures that must be followed should an inadvertent discovery occur. You must ensure that you comply with this condition during the construction of your project.

We are unable to determine whether or not your project requires individual Water Quality Certification (WQC) and/or a Coastal Zone Management (CZM) consistency determination response from the Washington State Department of Ecology (Ecology). Before you may proceed with the work authorized by this NWP, you must contact Ecology regarding these requirements at: Washington Department of Ecology, Federal Permit Coordinator,
P.O. Box 47600, Olympia, Washington 98504-7660; telephone: (360) 407-6076; or email: ecyrefedpermits@ecy.wa.gov.

If more than 180 days pass from when you provide Ecology a copy of this letter and request your individual WQC and CZM consistency determination concurrence review and you have not heard from Ecology, your requirement to obtain an individual WQC and CZM consistency determination response becomes waived. You may then proceed to construction.

Puget Sound is a water of the U.S. If you believe this is inaccurate, you may request a preliminary or approved jurisdictional determination (JD). If one is requested, please be aware that we may require the submittal of additional information to complete the JD and work authorized in this letter may <u>not</u> occur until the JD has been completed.

Our verification of this NWP authorization is valid until March 18, 2022, unless the NWP is modified, reissued, or revoked prior to that date. If the authorized work has not been completed by that date and you have commenced or are under contract to commence this activity before March 18, 2022, you will have until March 18, 2023, to complete the activity under the enclosed terms and conditions of this NWP. Failure to comply with all terms and conditions of this NWP verification invalidates this authorization and could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

Upon completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit*. Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey. These documents and information about our program are available on our website at www.nws.usace.army.mil, select "Regulatory

Branch, Permit Information" and then "Contact Us." A copy of this letter with enclosures will be furnished to Ms. Diane Cooper, Taylor Shellfish Company, Southeast 130 Lynch Road, Shelton, Washington 98584. If you have any questions, please contact me at brandon.c.clinton@usace.army.mil or (206) 316-3164.

Sincerely,

Matthew Bennett, Section Chief,
Regulatory Branch

Enclosures

Exhibit D

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 01EWFW00-2016-F-0121, National Marine Fisheries Service (NMFS) Reference Number WCR-2014-1502).

1. Gravel and shell shall be washed prior to use for substrate enhancement (e.g., frosting, shellfish bed restoration) and applied in minimal amounts using methods which result in **less than 1 inch** depth on the substrate annually. Shell material shall be procured from clean sources that do not deplete the existing supply of shell bottom. Shells shall be cleaned or left on dry land for a minimum of one month, or both, before placement in the marine environment. Shells from the local area shall be used whenever possible. Shell or gravel material shall not be placed so that it creates piles on the substrate. Use of a split-hull (e.g., hopper-type) barge to place material is prohibited.

2. The placement of gravel or shell directly into the water column (i.e., graveling or frosting) shall not be conducted between February 1 and March 15 in designated critical habitat for Hood Canal summer chum salmon.

3. For 'new[1] ' activities only, gravel or shell material shall not be applied to enhance substrate for shellfish activities where native eelgrass (*Zostera marina*) or kelp (rooted/attached brown algae in the order *Laminariales*) is present.

4. Turbidity resulting from oyster dredge harvest shall be minimized by adjusting dredge bags to "skim" the surface of the substrate during harvest.

5. Unsuitable material (e.g., trash, debris, car bodies, asphalt, tires) shall not be discharged or used as fill (e.g., used to secure nets, create nurseries, etc.).

6. For 'new' activities only, shellfish activities (e.g., racks, stakes, tubes, nets, bags, long-lines, on bottom cultivation) shall not occur within 16 horizontal feet of native eelgrass (*Zostera marina*) or kelp (rooted/attached brown algae in the order *Laminariales*). If eelgrass is present in the vicinity of an area new to shellfish activities, the eelgrass shall be delineated[2] and a map or sketch prepared and submitted to the Corps. Surveys to determine presence and location of eelgrass shall be done during times of peak above-ground biomass: June 1 – September 30. The following information must be included to scale: parcel boundaries, eelgrass locations and on-site dimensions, shellfish activity locations and dimensions.

7. For 'new' activities only, activities shall not occur above the tidal elevation of +7 feet (MLLW) if the area is listed as **documented** surf smelt (*Hypomesus pretiosus*) spawning habitat

[1] 'New' activities are those activities that were initiated after 18 March 2007. Expansion of activities into a new geographic footprint that had not previously been in commercial aquaculture is treated as a new footprint for the purpose of this programmatic ESA.

[2] For guidance see Corps' Seattle District *Components of a Complete Eelgrass Delineation and Characterization Report (May 2016).*

by WDFW. A map showing the location of documented surf smelt spawning habitat is available at the WDFW website.

8. For 'new' activities only, activities shall not occur above the tidal elevation of +5 feet (MLLW) if the area is **documented** as Pacific sand lance (*Ammodytes hexapterus*) spawning habitat by the WDFW. A map showing the location of documented Pacific sand lance spawning habitat is available at the WDFW website.

9. If conducting 1) mechanical dredge harvesting, 2) raking, 3) harrowing, 4) tilling, leveling or other bed preparation activities, 5) frosting or applying gravel or shell on beds, or 6) removing equipment or material (nets, tubes, bags) within a **documented or potential** spawning area for Pacific herring (*Clupea pallasi*) outside the approved work window[3], the work area shall be surveyed for the presence of herring spawn prior to the activity occurring. Vegetation, substrate, and materials (nets, tubes, etc.) shall be inspected. If herring spawn is present, these activities are prohibited in the areas where spawning has occurred until such time as the eggs have hatched and herring spawn is no longer present. A record shall be maintained of spawn surveys including the date and time of surveys; the area, materials, and equipment surveyed; results of the survey, etc. The Corps and the Services shall be notified if spawn is detected during a survey. The record of spawn surveys shall be made available upon request to the Corps and the Services.

10. For 'new' activities only, activities occurring in or adjacent to **potential** spawning habitat for sand lance, or surf smelt shall have a spawn survey completed in the work area by an approved biologist[4] prior to undertaking bed preparation, maintenance, and harvest activities if work will occur outside approved work windows for these species. If eggs are present, these activities are prohibited in the areas where spawning has occurred until such time as the eggs have hatched and spawn is no longer present. A record shall be maintained of spawn surveys including the date and time of surveys; the area, materials, and equipment surveyed; results of the survey, etc. The Corps and the Services shall be notified if spawn is detected during a survey. The record of spawn surveys shall be made available upon request to the Corps and the Services.

11. All shellfish gear (e.g., socks, bags, racks, marker stakes, rebar, nets, and tubes) that is not immediately needed or is not firmly secured to the substrate will be moved to a storage area landward of MHHW prior to the next high tide. Gear that is firmly secured to the substrate may remain on the tidelands for a consecutive period of time up to 7 days. Note: This is not meant to apply to the wet storage of harvested shellfish.

12. All pump intakes (e.g., for washing down gear) that use seawater shall be screened in accordance with NMFS and WDFW criteria. Note: This does not apply to work boat motor intakes (jet pumps) or through-hull intakes.

13. Land vehicles (e.g., all-terrain, trucks) shall be washed in an upland area such that wash water is not allowed to enter any stream, waterbody, or wetland. Wash water shall be disposed of upland in a location where all water is infiltrated into the ground (i.e., no flow into a waterbody or wetland).

[3] See Seattle District website for work window http://www.nws.usace.army.mil/Missions/Civil-Works/Regulatory/
[4] For information on how to become an "approved biologist" for conducting forage fish surveys contact WDFW

14. Land vehicles shall be stored, fueled, and maintained in a vehicle staging area located 150 feet or more from any stream, waterbody, or wetland. Where this is not possible, documentation must be provided to the Corps as to why compliance is not possible, written approval from the Corps must be obtained, and the operators shall have a spill prevention plan and maintain a readily-available spill prevention and clean-up kit.

15. For boats and other gas-powered vehicles or power equipment that cannot be fueled in a staging area 150 feet away from a waterbody or at a fuel dock, fuels shall be transferred in Environmental Protection Agency (EPA)-compliant portable fuel containers 5 gallons or smaller at a time during refilling. A polypropylene pad or other appropriate spill protection and a funnel or spill-proof spout shall be used when refueling to prevent possible contamination of waters. A spill kit shall be available and used in the event of a spill. All spills shall be reported to the Washington Emergency Management Office at (800) 258-5990. All waste oil or other clean-up materials contaminated with petroleum products will be properly disposed of off-site.

16. All vehicles operated within 150 feet of any stream, waterbody, or wetland shall be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected shall be repaired in the vehicle staging area before the vehicle resumes operation and the leak and repair documented in a record that is available for review on request by the Corps and Services.

17. The direct or indirect contact of toxic compounds including creosote, wood preservatives, paint, etc. within the marine environment shall be prevented. [This does not apply to boats]

18. All tubes, mesh bags and area nets shall be clearly, indelibly, and permanently marked to identify the permittee name and contact information (e.g., telephone number, email address, mailing address). On the nets, identification markers shall be placed with a minimum of one identification marker for each 50 feet of net.

19. All equipment and gear including anti-predator nets, stakes, and tubes shall be tightly secured to prevent them from breaking free.

20. All foam material (whether used for floatation of for any other purpose) must be encapsulated within a shell that prevents breakup or loss of foam material into the water and is not readily subject to damage by ultraviolet radiation or abrasion. Un-encapsulated foam material used for current on-going activities shall be removed or replaced with the encapsulated type.

21. Tires shall not be used as part of above and below structures or where tires could potentially come in contact with the water (e.g., floatation, fenders, hinges). Tires used for floatation currently shall be replaced with inert or encapsulated materials, such as plastic or encased foam, during maintenance or repair of the structure.

22. At least once every three months, beaches in the project vicinity will be patrolled by crews who will retrieve debris (e.g., anti-predator nets, bags, stakes, disks, tubes) that escape from the project area. Within the project vicinity, locations will be identified where debris tends to accumulate due to wave, current, or wind action, and after weather events these locations shall be

patrolled by crews who will remove and dispose of shellfish related debris appropriately. A record shall be maintained with the following information and the record will be made available upon request to the Corps, NMFS, and USFWS: date of patrol, location of areas patrolled, description of the type and amount of retrieved debris, other pertinent information.

23. When performing other activities on-site, the grower shall routinely inspect for and document any fish or wildlife found entangled in nets or other shellfish equipment. In the event that fish, bird, or mammal is found entangled, the grower shall: 1) provide immediate notice (within 24 hours) to WDFW (all species), USFWS/NMFS (all species) or Marine Mammal Stranding Network (marine mammals), 2) attempt to release the individual(s) without harm, and 3) provide a written and photographic record of the event, including dates, species identification, number of individuals, and final disposition, to the Corps and Services. Contact the U.S. Fish and Wildlife Service Law Enforcement Office at (425) 883-8122 with any questions about the preservation of specimens.

25. Vehicles (e.g., ATVs, tractors) shall not be used within native eelgrass (*Zostera marina*). If there is no other alternative for site access, a plan will be developed describing specific measures and/or best management practices that will be undertaken to minimize negative effects to eelgrass from vehicle operation. The access plan shall include the following components: (a) frequency of access at each location, (b) use of only the minimum vehicles needed to conduct the work and a description of the minimum number of vehicles needed at each visit, and (c) consistency in anchoring/grounding in the same location and/or traveling on the same path to restrict eelgrass disturbance to a very small footprint.

26. Vessels shall not ground or anchor in native eelgrass (*Zostera marina*) or kelp (rooted/attached brown algae in the order *Laminariales*) and paths through native eelgrass or kelp shall not be established. If there is no other access to the site or the special condition cannot be met due to human safety considerations, a site-specific plan shall be developed describing specific measures and/or best management practices that will be undertaken to minimize negative effects to eelgrass and kelp from vessel operation and accessing the shellfish areas. The access plan shall include the following components: (a) frequency of access at each location, (b) use of only the minimum number of boats and/or crew members needed to conduct the work and a description of the minimum number of boats and crewmembers needed at each visit, and (c) consistency in disturbance to a very small footprint.

27. Unless prohibited by substrate or other specific site conditions, floats and rafts shall use embedded anchors and midline floats to prevent dragging of anchors or lines. Floats and rafts that are not in compliance with this standard shall be updated to meet this standard during scheduled maintenance, repair, or replacement or before the end of the term of the next renewed authorization. [Any alternative to using an embedded anchor must be approved by the NMFS.]

28. Activities that are directly associated with shellfish activities (e.g., access roads, wet storage) shall not result in removal of native riparian vegetation extending landward 150 feet horizontally from MHHW (includes both wetland and upland vegetation) and disturbance shall be limited to the minimum necessary to access or engage in shellfish activities.

29. Native salt marsh vegetation shall not be removed and disturbance shall be limited to the minimum necessary to access or engage in shellfish activities.

30. Mechanical dredge harvest/harrowing shall not be conducted in **North Puget Sound** between April 1 and August 31.

31. Ensure clam and other shellfish cover nets are secured to the extent practicable. If fish are entangled, record and report species, time, and location of entanglement. Collected specimens of fish entangled shall be preserved in a freezer, and reporting shall be to the NMFS' Lacey Office in order to determine appropriate steps to ascertain the entangled species. Contact the NMFS Central Puget Sound Branch Chief by telephone or email.

32. Only oyster long lines (with flip bags ok) spaced laterally at 10 feet intervals shall be used in **fallow**[5] areas that have been colonized by eelgrass in greater **Puget Sound and Hood Canal**. Flip bags must be suspended above the substrate so they do not rest on substrate at low tide. No other culture methods shall be used in fallow areas colonized by eelgrass. Further, with the exception of mechanical longline harvest, no mechanized activities shall occur in fallow areas colonized by eelgrass. This Term and Condition does not apply to fallow areas in Willapa Bay or Grays Harbor.

33. In **Hood Canal** summer-run chum salmon designated critical habitat[6]: Between February 1 and April 30, shellfish planting and harvesting shall not occur within 15 feet waterward of the waterline (tideline) to protect juvenile chum salmon. In addition, shellfish activities which increase turbidity in the nearshore water (e.g., geoduck harvest) shall not occur at all during this timeframe

[5] Fallow refers to areas that are periodically allowed to lie fallow as part of normal operations.

[6] Critical habitat for Hood Canal summer-run chum salmon occur in Hood Canal and the Strait of Juan de Fuca marine areas in Clallam, Jefferson, Kitsap, and Mason Counties. Exact locations and excluded areas are described at: http://www.westcoast.fisheries.noaa.gov/publications/frn/2005/70fr52739.pdf