I. INTRODUCTION

Taylor has failed to meet its burden to establish that its proposed Gallagher Cove mussel farm will comply with the Shoreline Management Act or Thurston County’s Shoreline Master Program.

Despite the limited scope FEIS’s conclusions to the contrary, the project will still likely result in significant adverse impacts to the marine ecosystem of north Totten Inlet. Indeed, Taylor’s project will significantly impact critical water quality and critical forage fish habitat through at least: (1) the mussels’ ingestion of necessary nutrients and fish larvae; (2) the project’s direct impact on the substrate and benthic water column; and (3) the project’s significant impacts on critical dissolved oxygen levels. While Taylor laud’s potential, but largely speculative and minor improvements in nitrogen levels, it ignores that
the nitrogen levels in Totten Inlet are not deteriorated. More importantly, it ignores
almost entirely that the proposed project will likely result in a violation of Washington’s
anti-degradation policy by significantly reducing dissolved oxygen levels in waters that are
otherwise extraordinary.

The FEIS and Taylor’s application materials also largely ignore the cumulative
impact of the proposal’s operations on Totten Inlet. This includes not only the cumulative
impacts of Taylor’s own project, but also the cumulative impact of aquaculture operations
on Totten Inlet in general. A cumulative effect analysis is needed in order to address the
overall impact on water quality, on habitat and on aesthetics.

The discussion below in Section II attempts first to address the specific questions
raised in the Hearing Examiner’s February 22, 2012, email. Section III highlights some
of the key substantive findings necessary before approving the requested SSDP. While
not intended to be an exhaustive replay of the testimony that the Hearing Examiner heard,
the discussion demonstrates that there remain far more significant questions than answers.
Taylor has not demonstrated that its project is, or ever can be, compliant with SMA’s and
SMP’s clear mandates to protect and preserve such a biologically rich and environmentally
significant ecosystem. For the reasons argued in more detail below, the Hearing Examiner
should deny the shoreline permit.

II. RESPONSE TO HEARING EXAMINER’S QUESTIONS

A. Which “Cumulative Impacts” Standard Should be Applied?

The Hearing Examiner’s first question asks whether the NEPA or SEPA definitions
of cumulative impacts should be applied to review under the SMA. The Examiner should
apply the NEPA standard and consider the incremental effects of past, present, and reasonably foreseeable activities within the same area.

At the outset, there should be no dispute that a cumulative impacts assessment is necessary. The Shoreline Hearings Board has repeatedly confirmed that the consideration of cumulative effects is a necessary element of determining the consistency of a proposed development with the SMA. The SHB explains:

consideration of potential cumulative effects and precedential effects is warranted in any case where there is proof of impacts that risk harm to habitat, loss of community use, or a significant degradation of views and aesthetic values. In such cases, a balancing of the interests of project proponents, adjacent shoreline property owners, and those of the public is necessary.

The term “cumulative impacts” is not defined under SEPA. Instead, Washington courts generally to limit SEPA cumulative effects analysis to projects that are either substantially dependent on the proposed action or are necessary to meet the project’s purpose and need. The NEPA regulations, however, define “cumulative impacts” as:

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

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1 See, e.g., Save Lake Sammamish v. King County, SHB No. 93-40, 1994 WL 905569 at 7, (1994);
Friends of the San Juans v. San Juan County, SHB No. 08-005, 2008 WL 5510445 at 8 (2008).
2 Friends of San Juans, quoting, Fladseth v. Mason County, SHB No. 05-026 (COL 15) (May 1, 2007).
In order to "consider" cumulative impacts, NEPA requires quantification and
detailed information, including a cataloging of relevant past actions in the area.\(^5\) While
the affected "region" may not be defined so broadly as to require analysis of impacts over a
broad, multistate area,\(^6\) it is reasonable to consider an area smaller in scope -- such as the
Puget Sound.\(^7\)

The basis for the SHB's cumulative impact requirement derives both from the
express language of the SMA and the Washington Supreme Court. In *Hayes v. Yount*, 87
Wn.2d 280, 287-88 (1976), the Court confirmed that in the SMA itself "the legislature and
people of this state recognized the necessity of controlling the cumulative adverse effect of
'piecemeal development of the state's shorelines' through 'coordinated planning' of all
development, not only 'substantial development.'"\(^8\) The *Hayes* Court also confirmed that
the appropriate scope of a cumulative effect analysis derives from the broader federal
NEPA standard and is not limited to "connected" or "dependent" actions:

Logic and common sense suggest that numerous projects,
each having no significant effect individually, may well
have very significant effects when taken together. This
concept of cumulative environmental harm has received
legislative and judicial recognition.\(^9\)

Thus, because the cumulative effects analysis for review under the SMA requires
consideration of not only connected and dependent actions, but other projects in the area,

\(^5\) *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379-80 (9th Cir. 1998).
\(^7\) *See, Mountaineer*, 445 F.Supp.2d 1235 (accepting National Forest as appropriate scale for
cumulative impacts analysis).
\(^8\) *Id., quoting RCW 90.58.020.*
870-72 (1975); Scientists' Institute for Public Information, Inc. v. Atomic Energy Comm'n, 156
F.Supp. 584, 621-22 (D.Minn.1973); Natural Resources Defense Council, Inc. v. Grant, 341 F.Supp. 356,
357 (E.D.N.C.1972); Narrowsview Preservation Ass'n v. Tacoma, 84 Wash.2d 416, 423, 526 F.2d 897
(1974).
the Hearing Examiner should apply the broader NEPA view of cumulative impacts in his consideration of and SDP application under the SMA.

B. No Net Loss under the SMA and SMP

The Hearing Examiner’s second question asks whether the “no net loss” standard applies under the SMA and SMP under which this project is vested. The answer is yes.

At the outset, the Project is not “vested.” Washington’s law on vesting applies to building permit applications and applications for subdivisions or preliminary plats. Because it does not appear that Taylor has applied for a building permit, its project is not vested. More to the point, however, the “no net loss” standards should apply to the Project for two reasons. First, while the “no net loss” standard is explained in detail and instructions for its implementation are included within the 2003 SMP Guidelines, the basis for the “no net loss” standard comes from the underlying SMA. As explained by Ecology, the SMA provides “a broad policy framework for protecting the natural resources and ecology of the shoreline environment” and the standard of “no net loss” is a “means of implementing that framework through shoreline master programs.”

Second, pursuant to WAC 173-27-150, substantial development permit applications must be consistent with not only the policies and procedures of the GMA, but also with the approved SMP and “to the extent feasible, any draft or approved master program which can be reasonably ascertained as representing the policy of the local government.” While

10 RCW 19.27.095(1); RCW 58.17.033; Abbey Road Group, LLC v. City of Bonney Lake, 167 Wn.2d 242, 246-47 (2009).
12 WAC 173-27-150 (Formerly WAC 173-14-100) confirms that all applications for shoreline SDPs must be consistent with the policies and procedures of the act. See also TCC 19.04.010.
Thurston County has apparently not yet finished its revised SMP, it can be safely assumed that Thurston County's plan will be consistent with the SMP guidelines -- including the "no net loss" standard.

C. Adequacy of the FEIS

1. Use of the term "significant" in the EIS

The Examiner asks two questions related to the FEIS. First, whether the use of the term "significant" in the FEIS conclusion that the project will have "no significant unavoidable adverse impacts" is the same use as for determining if an EIS is required at the threshold stage. The answer is "yes." An EIS is required to include a summary of "significant adverse impacts that cannot or will not be mitigated." Similarly, in making the initial threshold determination, the responsible official is charged with reviewing the checklist and supporting documents and determining whether the proposal will have a "probably significant adverse environmental impact." Because the term "significance" is a defined term and similarly used, it appears that use of the terms are the same.

But simply because the FEIS finds that there are no significant unavoidable adverse impacts on the subjects reviewed in the limited scope FEIS, does not mean that the substantive standards for the underlying permits can be met. If, as discussed below, the evidence demonstrates that the project is not consistent with the SMA or Thurston County’s SMP, the requested SSDP must be denied.

13 WAC 197-11-440(6)(c)(v).
14 WAC 197-11-330(1)(b).
15 WAC 197-11-794.
2. Adequacy of the FEIS alternatives analysis

The Examiner asks next whether the alternatives analysis in the FEIS is adequate. The answer is "no." The alternatives analysis is defective for several reasons, including the one highlighted by the Hearing Examiner's question – a failure to analyze an alternative with a lower environmental cost or decreased level of environmental degradation. Unfortunately, because Thurston County code does not allow for an appeal of the adequacy of an FEIS, this issue is not within the Hearing Examiner's jurisdiction.

Instead, challenges to the FEIS will be before the Shoreline Hearings Board.17

D. Washington's Water Pollution Control Act

1. The Water Pollution Control Act is relevant and applicable

The Hearing Examiner asks four questions concerning the Project's compliance with Washington's Water Pollution Control Act and its implementing regulations. In response to the first question, yes, Ch 90.48 RCW and WAC Ch. 173-201A are applicable to this project for at least three reasons. First, WAC 173-201A-010(1) confirms that "all actions must comply" with the water quality standards in Ch. WAC 173-201A. This includes "any human projects or activities."18 Second, the policies of the SMA contemplate "protecting against adverse effects to… the waters of the state and their

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17 The Hearing Examiner's February 22, 2012, questions ask whether adequacy of the FEIS can be reached in this proceeding "when the adequacy of the FEIS has not been challenged." APHETI wants to be perfectly clear – Thurston County does not provide for the appeal of an FEIS. APHETI does not agree that the FEIS is adequate and has the right to challenge the adequacy of the document before the Shoreline Hearings Board.

18 "Actions" as used in the surface water quality standard "refers broadly to any human projects or activities." WAC 173-201A-020.

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Similarly, for shorelines of statewide significance, the SMA requires the preservation, to the greatest extent feasible, of the "public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state" and thus "uses are preferred which are consistent with the control of pollution and prevention of damage to the natural environment."20 Third, under Thurston County's SMP, the Regional Criteria" are clear that "[p]rotection of water quality and aquatic habitat is recognized as a primary goal."21

2. Ch. 90.48 RCW and WAC 173-201A are applicable even where an NPDES permit is not required

The Hearing Examiner's second question asks whether Chapter 90.48 RCW or WAC 173-201A apply if an NPDES permit is not required for this project. The answer is yes.

RCW 90.48.080 makes it unlawful for "any person" to "throw, drain, run, or otherwise discharge into the waters of the state...any organic matter... that shall cause or tend to cause pollution of such waters....."22 "Pollution" is further defined to include the "alteration of the physical, chemical or other biological properties, of any waters of the state..."23 Thus, regardless of whether a facility is permitted or even needs a permit, it is illegal to discharge organic matters into the water that alter the physical or chemical properties of the water. This is borne out by RCW 90.48.144 which defines three distinct types of violations – (1) the violation of the terms of a federal or state discharge permit; (2)

19 RCW 90.58.020.
20 RCW 90.58.020.
21 SMP Section Two, Chapter V.
22 RCW 90.48.080 (Emphasis added).
23 RCW 90.48.020.
discharge from a point source without a required state or federal discharge permit; or (3) violation of RCW 90.48.080. By defining violation of RCW 90.48.080 as a distinct type of violation, different from violations of permits or operating without a required permit, RCW 90.48.144 confirms that, even where a permit is not required, it remains illegal to discharge organic matters into the water that alter the physical or chemical properties of the water. Thus, even if Taylor does not need an NPDES permit, if its operations place mussels in the water and the mussels alter the physical or chemical properties of the water, such as the dissolved oxygen levels, it remains a violation of RCW 90.48.080.

3. Release of biological materials

The Hearing Examiner’s third water quality question asks whether the evidence demonstrates that the threshold discussed in the footnote 9 of the Ninth Circuit’s decision in APHETI v. Taylor Resources, has been exceeded. Given the Court’s opinion, it is unlikely the threshold has been exceeded. But that is not the end of the relevant inquiry. As discussed above, a facility can still be in violation of Washington’s Water Pollution Control Act even if an NPDES permit is not required.

Under the federal Clean Water Act, the “discharge of any pollutant” from a “point source” into navigable waters is unlawful unless the discharge is made pursuant to an NPDES permit.24 Thus, the APHETI Court was focused on whether Taylor was “discharging a pollutant.” Because the Court determined that neither mussels nor mussel byproducts were “pollutants” an NPDES permit was not needed. In contrast, under RCW 90.48.080, it is unlawful to discharge or place any “organic material” into the water, if the organic materials result in altering the chemical, physical or biological properties of the water.

water. Thus, even if mussels or mussel byproducts themselves are not "pollutants" under
the federal CWA, if placing the mussels (organic materials) into waters results in altering
the chemical, physical or biological properties of the water, it remains a violation of RCW
90.48.080.

4. Antidegradation

The Hearing Examiner’s fourth water quality question asks whether evidence
showing D.O. levels below 4.2 in July and perhaps lower for small areas shows a violation
of water quality standards. The answer is yes. Washington’s anti-degradation policy
makes it illegal to approve an activity that will interfere with existing or designated uses.

As the Hearing Examiner correctly notes, Washington’s Anti-degradation policy is
described in WAC 173-201A-300 through -310. Under Tier 1 of the policy – which
applies to all waters and sources of pollution regardless of the type of activity –

Existing and designated uses must be maintained and
protected. No degradation may be allowed that would
interfere with, or become injurious to, existing or
designated uses, except as provided in this chapter.\(^{25}\)

Further, in a situation where the natural conditions of the water body are lower than the
assigned water quality criteria,

The natural conditions constitute the water quality criteria.
Where water quality criteria are not met because of natural
conditions, human actions are not allowed to further lower
the water quality, except where explicitly allowed in this
chapter.\(^{26}\)

\(^{25}\) WAC 173-201A-310(1).
\(^{26}\) WAC 173-201A-310(3).
The waters of Totten Inlet are designated as “extraordinary” for “aquatic life uses.” Consequently, the dissolved oxygen criteria are set as 7.0 mg/L (or ppm) as the lowest 1-day minimum. And, consistent with the anti-degradation policy, where a water body’s D.O. is lower than the criteria (or within 0.2 mg/L) due to natural conditions, “then human actions considered cumulatively may not cause the D.O. of that water body to decrease more than 0.2 mg/L.”

Ambient concentrations of D.O. in the water column during flood tides in Totten Inlet at Deepwater Point, a location nearby the proposed site, were observed during summer months of ambient levels at 4.4 mg/L in July and 4.5 mg/L in August. Thus, because ambient conditions already drop below the designated level for extraordinary waters of 7.0 mg/L, human activities may not further degrade D.O.

But here the mussel rafts are known to further decrease the amount of DO as water passes through the rafts. The percentage of additional reduction, or “depressed minimum DO,” is significant: the daily average DO concentrations in the center of the rafts were reduced up to 44% measured from the center of the rafts, but at times, DO could be reduced to 70 percent of the incoming water and can be expected to persist for up to 200

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27 WAC 173-201A-612, Table 612.
28 WAC 173-201A-210(d).
29 WAC 173-201A-210(d)(i).
31 The biological stress threshold for dissolved oxygen (“DO”) is 5.0 mg/L. Exhibit 7 at 18. EIS co-author Mark Pedersen testified that less than 3 mg/L is a level when fish “will” be stressed. 2/17/12 Testimony of Mark Pedersen (Part 3 minutes 54-55). Wayne Daley testified that when DO levels drop below 5.0 mg/L, the fish no longer functions as a normal animal. 2/13/12 Testimony of Wayne Daley at 1:10. Jack Rensel, representing the Independent Technical Review Committee (“ITRC”), testified more starkly that DO levels below 3 mg/L can cause “widespread fish mortality.” 2/17/12 Testimony of Jack Rensel (Part 3 at 1:11-12). Final technical reports admit that the measured ambient DO levels in Totten Inlet drop below 5 mg/L. Newfields 2009 at 21. Salmonids, unlike other species that can tolerate lower levels of DO, require a “very clean, high oxygen water.” Pedersen Testimony at 0:54.
meters downstream from the raft. *Id.* at 20, 23, 24 (Figure 16). The depressed minimum DO was estimated to last in a range from several minutes to up to six hours.\(^{32}\) Pedersen agreed that a worst-case scenario could include a depressed DO level of “a little over” 2.0 mg/L. Bill Gardiner, author of the Newfields Report, later agreed that DO levels could reach 30 percent of a 4.5 ambient level of DO.\(^{33}\) Even more concerning, depressed DO levels could drop below the estimates discussed at the hearing. Wayne Daley, an expert consultant to APHETI, stressed that data gaps in the Newfields report for ambient levels of DO between August 15\(^{th}\) and September 24\(^{th}\) were “critical” because they avoided the most extreme periods of low DO in Totten Inlet. 2/17/12 Testimony of Wayne Daley (Part 5 at 0:02-0:04). Exposure to levels of DO below 5 mg/L over a period of several weeks can become “chronic” and impact the health of [salmonids].” *Id.*

Because the project will result in a violation of Washington’s anti-degradation policy and water quality standards, it may not be approved.\(^{34}\)

\(^{32}\) 2/17/12 Testimony of Pedersen (Part 3 minutes 48-49).
\(^{33}\) 2/17/12 Testimony of Bill Gardiner (Part 3 at 1:16).
\(^{34}\) While largely irrelevant because a violation of the anti-degradation policy alone is sufficient to deny approval of the project, Taylor provided very little evidence to demonstrate the impact would not be significant and adverse. Rensel testified that he did not believe DO levels dropped below 3 mg/L only because we have not seen “widespread fish mortality.” Rensel Testimony at 1:11-12. Rensel claimed it was “unlikely” that chum salmon or trout would be in the area of the proposed site in the summer but was not able to cite to any supporting evidence in the record. Rensel Testimony at 1:25-26. Gardiner claimed the water column in and around the proposed site would likely have a higher level of depressed DO due to increased tidal exchange and currents but was unable to provide statistical data demonstrating any difference. Gardiner Testimony at 1:18. Pedersen admitted that the fish would be stressed, but because the area is localized and exposure would be limited, he did not believe the impact to be “significant.” Pedersen Testimony at 1:22-23.

In addition, the Washington State Department of Natural Resources commented that “[m]inimum DO levels below the biological stress conditions with any seasonal regularity for [the estimated] distance under the preferred alternative would constituted a significant impact and may require mitigation beyond the proposed implementation of Best Management Practices form the Taylor Shellfish Farms Environmental Code of practice…” Exhibit 8 (FEIS Comment Letter dated 7/12/10 at 2).

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III. THE SUBSTANTIAL DEVELOPMENT PERMIT SHOULD BE DENIED

A. The Project is Inconsistent with the Policies and Procedures of the SMA

1. Protecting water quality and habitat is critical to the policies and purpose of the SMA

The SMA was enacted to respond to concerns about the “inherent harm in an uncoordinated and piecemeal development of the state’s shorelines.” Review of the SMA shall be “liberally construed to give full effect to the objectives and purposes for which it was enacted.” In RCW 90.58.020, the legislature declared that for shorelines of statewide significance such as Totten Inlet, the “interest of all the people shall be paramount…. The Legislature adopted specific policies to guide the management of these significant shoreline including prioritizes uses including, in order, those that:

1) Recognize and protect the statewide interest over local interest;
2) Preserve the natural character of the shoreline;
3) Result in long term over short term benefit; [and]
4) Protect the resources and ecology of the shoreline[.]”

Uses “shall be preferred which are consistent with the control of pollution and the prevention of damage to the natural environment.” Id. Uses also “shall be designed and conducted in a manner to minimize insofar as practical, any resultant damage to the ecology and environment of the shoreline area[.]” Id.

As discussed above, protecting water quality and habitat is a critical concern. The policies of the SMA contemplate “protecting against adverse effects to… the waters of the

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35 RCW 90.58.020.
36 RCW 90.58.900.
37 RCW 90.58.020.
state and their aquatic life .”\textsuperscript{38} Similarly, for shorelines of statewide significance, the SMA requires the preservation, to the greatest extent feasible, of the “public’s opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state” and thus “uses are preferred which are consistent with the control of pollution and prevention of damage to the natural environment.”\textsuperscript{39}

2. Taylor’s proposed project fails the SMA’s intent to protect water quality and habitat

Totten Inlet is rare because few other areas of Puget Sound have documented excellent water quality and spawning activity from several species of forage fish, including herring, sand lance, surf smelt, and likely, blue anchovies all occurring together.\textsuperscript{40} Forage fish are an essential food source for salmon, particularly [ESA listed] Chinook.\textsuperscript{41} Forage fish are critical to the health of the Totten Inlet ecosystem. If forage fish are harmed, so too will the species, including salmonids, that depend upon them.\textsuperscript{42} Taylor’s project will impact both water quality and habitat that forage fish depend upon through (1) the mussels’ ingestion of necessary nutrients and fish larvae; (2) direct impact on the substrate and benthic water column; and (3) significant impacts on critical dissolved oxygen levels.\textsuperscript{43}

\textsuperscript{38} RCW 90.58.020.
\textsuperscript{39} RCW 90.58.020.
\textsuperscript{40} 2/13/12 Testimony of Dan Penttila Testimony (Part 3 at 0:33); see also Exhibit 26 (Penttila Exhibit 9).
\textsuperscript{41} 2/13/12 Testimony of Wayne Daley at 0:22-0:23.
\textsuperscript{42} Mr. Daley emphasized how little is known specifically about steelhead utilizing the area since the species’ critical habitat designation is not yet completed. 2/13/12 Daley Testimony at 0:23-0:24. Mr. Penttila cited to evidence showing that juvenile salmonids are known to exist in the area. 2/13/12 Penttila Testimony at 0:51.
\textsuperscript{43} 2/13/12 Testimony of Wayne Daley (Part 3 at 0:21-0:23); 2/13/12 Testimony of Dan Penttila (Part 3 at 0:32-0:47); see also, Exhibit 26 (Penttila exhibits 1-15).

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Mussels are known to ingest phytoplankton and zooplankton, the food sources upon which native fish, including juvenile salmonids and forage fish depend. While Taylor will argue that the reduction is insignificant, the proposal will further reduce food sources that are already being eliminated by other aquaculture activities. The cumulative effects of such a reduction are entirely unknown. Id.

Additional concerns include mussels’ consumption of fish larvae, particularly forage fish larvae. Forage fish larvae range in a size from 4.5 mm to 6mm. Mussels have been demonstrated to consume organisms reaching 6mm in length. Taylor has provided no information, and neither the FEIS nor DEIS that adequately address the project’s numerous significant adverse direct and indirect impacts on forage fish.

The project will also adversely impact critical spawning areas for forage fish since spawning substrate for herring, sand lance, and smelt occur near the proposed site. In

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44 2/13/12 Daley Testimony at 0:22-0:23; 2/13/12 Penttila Testimony at 0:44-0:50; see also Exhibit 26 (Penttila exhibits 12, 13, and 14).
45 2/13/12 Daley Testimony at 0:59-1:01.
46 According to the U.S. Fish and Wildlife Service’s 2009 Biological Opinion prepared for Nationwide Permit #48 for Shellfish Aquaculture, studies found a “30 percent reduction in phytoplankton over a 3.8-hour period during high tide as the water moved through the mussel farm” and which represents a “significant destabilization of the marine bed.” A copy of the 2009 Biological Opinion is available at: http://www.fws.gov/wafw/publications/Biological_Opinions/washington%20state%20restoration%20programmatic.pdf.
47 Mr. Penttila indicated that size of forage fish larvae to range from 4.5 mm (northern anchovy) to 6 mm (herring). Penttila Testimony at 0:44-0:45 citing Exhibit 26. Mussels have been observed consuming amphipods, a species that is between 5mm and 6mm in length. See Exhibit 15 comments from Jules Michel excerpting BiOp with page references; DEIS [Exhibit 6] referencing NMF 2009 BiOp at 125.
48 Mark Pederson, EIS co-author admitted that the ingestion of forage fish larvae was not studied and that he had never “heard of such a thing.” Pedersen Testimony (Part 3 at 0:16). Pederson consulted with a colleague from the ITRC, Roger Newell, who stated that he believed forage fish larvae would be too large for bivalve ingestion. Id. at 0:18-0:19. Penttila confirmed Pedersen’s statement that there is a data gap and emphasized that his concerns about bivalve ingestion of forage fish larvae have increased with the intensity of aquaculture activities on Totten Inlet.
49 Taylor’s rafts are proposed to be assembled in an area where surf smelt and sand lance spawning habitat occurs. 2/13/12 Penttila Testimony at 0:39-0:41. Mr. Penttila recommended additional study to determine the status of the stocks of surf smelt and sand lance before any raft assembly occur on the site. Id. at 0:41-0:42. Spawning substrate for herring are also known to exist near the proposed mussel site and the

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addition to direct impacts on spawning substrate, the project will also significantly degrade the areas below the rafts. These impacts include the propagation of invasive tunicates and other fouling communities beneath the rafts, excretion of additional nutrients such as silicate, phosphorous, and nitrogen into the water column, and the disbursement of plastics, concrete anchors, and other mussel debris on the seafloor around the rafts.\(^{50}\)

The FEIS concedes that the mussel farm will remove food sources for forage fish, including phytoplankton and zooplankton; acknowledges adverse shading impacts to macroalgae;\(^ {51}\) and admits that the benthic habitat will be displaced by concrete wedge anchors on the seafloor.\(^ {52}\) While Taylor dismisses these impacts by stating that consumption of food sources will be “such a small percentage” and impacts to salmonids will only be “minor[.]” these estimates are understated and inadequately evaluated.\(^ {53}\)

Finally, as discussed above, supra at 10-11, the project will further reduce dissolved oxygen level to below critical levels. Indeed, the project’s impacts on dissolved oxygen will violate Washington’s anti-degradation policy.

3. The cumulative effect of the project’s negative impacts to water quality exceed any minimal improvement

While Taylor insists that the mussel farm will improve water quality due to the mussels’ ingestion of nitrogen, but there is very little conclusive information about whether

\(^{50}\) See Exhibits 15, 22, 28, 31, and 33.

\(^{51}\) EIS co-author Mark Pedersen admitted that there is a lower incidence of macroalgae in Totten Inlet than in other areas of Puget Sound. Pedersen Testimony at 0:09. He later suggested that the County could consider moving the rafts into deeper water to avoid the impacts to macroalgae.

\(^{52}\) Exhibit 8 at Table 1.6.

\(^{53}\) For instance, Mr. Daley and Mr. Penttila challenged assumptions that only 1 percent of phytoplankton and zooplankton will be consumed. 2/13/12 Testimony of Daley and Penttila (Part 3) at 1:02-:05. Mr. Daley described estimates regarding zooplankton ingestion as outright ‘inaccurate.’ 2/13/12 Daley Testimony at 1:04.
there will be a net reduction.\textsuperscript{54} Ecology categorizes Totten Inlet as "extraordinary" and it is not clear that Totten Inlet is suffering from eutrophication as a result of excess nitrogen.\textsuperscript{55} Even assuming the nitrogen in Totten Inlet is excessive, evidence relied upon by Taylor demonstrates only that nitrogen removal will have an insignificant effect on the water column. Mr. Rensel estimated that the mussels will remove 6.8 percent – or 4,549 kg of the nitrogen inputs per year.\textsuperscript{56} Asked whether the reduction would have a significant difference on the health of Totten Inlet, Mr. Rensel responded squarely: “not measurably.”\textsuperscript{57} When he was then asked whether the applicant’s heavy reliance on nitrogen removal as a true benefit should be called into question because it is not “measurable[,]” Mr. Rensel responded: “the numbers are what they are.”\textsuperscript{58}

Even if the mussel rafts will achieve a small net reduction of nitrogen in the water column, each of the other impacts of the operation would be adverse and significant. More critical than a minor reduction of nitrogen is the Inlet’s carrying capacity and impacts on forage fish.\textsuperscript{59} The result of the cumulative impacts to the ecosystem from the proposed mussel farm is unknown. A cumulative effects analysis is critical to determining whether Taylor’s proposal is consistent with the SMA’s mandate to control pollution and prevent damage to the natural environment.\textsuperscript{60} The resulting impact of the numerous adverse impacts to the marine ecosystem is unknown. It is equally important to determine how the

\textsuperscript{54} 2/13/12 Testimony of Daley at 0:58-0:59.
\textsuperscript{55} See Exhibit 6 (Newfields 2009 at 24). See also, Exhibit 15.
\textsuperscript{56} The overwhelming majority of nitrogen inputs in Totten Inlet are naturally occurring. Of the total 66,508 kg/yr of nitrogen input, 47,450 kg/yr are from streams and the watershed and 1,100 kg/year from the atmosphere. Exhibit 49. Rensel’s estimates may not even accurately reflect nitrogen inputs in Totten Inlet since some of these figures describe nitrogen in all of Puget Sound. Exhibit 15.
\textsuperscript{57} 2/17/12 Testimony of Jack Rensel (Part 4 at 0:38).
\textsuperscript{58} Id. at 0:39.
\textsuperscript{59} 2/13/12 Testimony of Daley at 0:59.
\textsuperscript{60} RCW 90.58.020.
proposed project will impact Totten Inlet due to several mussel rafts already in operation. A 21-raft farm is operational in Gallagher Cove and there are two mussel farms in Deepwater Point. Totten Inlet shorelines are also being used for the intensive culture of geoducks, manila claims, and oysters.

The cumulative effect of aquaculture activities in Totten Inlet is largely unknown. But it is clear that salmonid stocks are in increasingly worse shape due to the loss and degradation of habitat. While the political appetite for shellfish farming appears to be “insatiable,” cumulative impacts from shellfish farming are simply not understood. It is unclear if Totten Inlet’s carrying capacity has already been reached. The cumulative impacts to the ecosystem need to be adequately studied and analyzed to ascertain the extent of harm and whether the continued increase of these activities are, if at all, consistent with the SMA.

B. The Project is Inconsistent with the Intent of Thurston County’s “Conservancy Environment”

The shoreline along North Totten Inlet is designated as a “Conservancy Environment.” As a “Conservancy Environment,” the SMP restricts uses that threaten “existing” natural resources:

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

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61 Exhibit 8 (Figure 1-1).
62 2/13/12 Daley Testimony at 0:16.
63 2/13/12 Penttila Testimony at 0:51-0:53. Mr. Daley quantified the degree of decline in salmon and steelhead stocks in Puget Sound: as of 2002, 5 stocks are listed as critical, 14 stocks are depleted, and only 4 are considered healthy. 2/13/12 Daley Testimony at 0:17-0:19. In 1992, 4 stocks were listed as critical, 8 stocks were depressed, and 10 stocks were healthy.
64 2/13/12 Penttila Testimony at 0:54.
flow of recreational benefits to the public and to achieve sustained resource utilization.65

Accordingly, the “Conservancy Environment” is defined to include a “[s]ustained management” of “aquatic resources” and “rigidly controlled utilization of nonrenewable and other nonmineral resources which do not result in long-term irreversible impacts…” Id.

Taylor’s proposal poses significant adverse effects to the marine environment that will threaten the long-term survival of existing resources. Taylor admits that the project will reduce dissolved oxygen to levels below where they are known to stress fish. See supra at II(D)(4). Mussel rafts also pose significant threat to the food sources upon which salmonids and native flatfish depend, including herring, sand lance, surf smelt, and anchovies. See supra at III(A). Mussels may ingest fish larvae. Id. Thurston County is required to manage existing resources in a Conservancy Environment to ensure no long-term irreversible impacts. With salmon stocks continuing to deteriorate in Puget Sound, Thurston County should not allow an industrial operation to further reduce the resources species in the ecosystem’s food chain depend upon. The proposal does not fit either the purpose or definition of a Conservancy Environment in the SMP.

The “Conservancy Environment” restricts permitted uses to only those uses which are consistent with the purpose and definition. Uses are permitted in the “Conservancy Environment” if they are demonstrated to be:

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

65 SMP Sec. 2(VII)(B).
resources on a sustained yield basis while minimally reducing opportunities for other future uses of the resources of the area.\(^6\)

Taylor’s proposal will consume resources in the water column beneath and around the mussel rafts, including food sources for forage fish such as phytoplankton and zooplankton. See supra at III(A). There are concerns that the mussels will ingest forage fish larvae. Id. The rafts will diminish the DO levels below what necessary to maintain a healthy water column, which will place enormous stress on fish underneath or around the rafts. See supra at II(D)(4). This project is an improper use in a designated Conservancy Environment.

The “Conservancy Environment” has adopted several applicable goal statements which the project does not meet.\(^6\) For instance, shoreline uses should be limited to structures and uses that “are not highly visible from the water.” \(^6\)Taylor’s project does not meet this goal because it will cause a “high” visual impact.\(^6\)

Consistent with the “Conservancy Environment” purpose and definition, the element should “protect, conserve and manage existing natural resources and valuable historical and cultural areas in order to ensure a continuous flow of recreational benefits to the public, and to achieve sustained resource utilization.” SMP Sec. 2(VII)(B) (6). Taylor has not demonstrated that the proposal will “manage existing natural resources” and achieved “sustained resource utilization.” See supra at III(A), II(D)(4).

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\(^{6}\) SMP Sec. 2(VII)(B).
\(^{6}\) See SMP Sec. 2 (VII)(B)(1)-(8).
\(^{6}\) Id. at (5).
\(^{6}\) See Exhibit 11 at 11-13; see also, exhibits 28, 29, 31, 33 and 34. See also the following section discussing the applicability of the mussel farm with the SMP’s Aquaculture Policy.

APHETI’S CLOSING ARGUMENT - 20
C. The Project is Inconsistent with Thurston County’s Aquaculture Policy

The SMP encourages aquaculture but demands that development “consider and minimize the detrimental impact it might have on views from upland property.” Taylor claims that the project will only have a “moderate visual impact[,]” but APHETI testified and submitted evidence showing that the proposed project would have a “high” visual impact if it were approved. APHETI’s Visual Impact Assessment concluded that the visual impact was high based on several individual visibility factors including view obstruction, distance offshore / observer position, and viewshed coverage. While an alternative study conducted by EDAW, found only a “moderate to high visual impact,” that study improperly characterized the number of viewers as “very low.” The residential communities adjacent to the proposed raft suit are built to the near maximum of Thurston County’s zoning code.

While Taylor also insists that rafts will be “orderly arranged” and maintained with a “low vertical profile[,]” Taylor’s past practices do not reflect these representations. Residents highlighted numerous examples of Taylor’s “poor stewardship[.]” the mussel rafts are “piled high with equipment for repair, harvesting and...storage.” Taylor has not demonstrated that it has minimized the high impacts the mussel raft will have on views from upland property. It is inconsistent with Thurston County’s Aquaculture Policy.

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70 SMP Sec. 3(II)(B)(5), (8).
71 See Exhibits 11, 28, 29, 31, 33, and 34.
72 See Exhibit 11 at 11-13.
73 Exhibit 12 at 21, 26.
74 Exhibit 11 at 9.
75 Exhibit 28 at 1. See also photographs attached to Exhibits 28, 31 (photos at Exhibit A), and 33 (photos at .pdf page 30).
The SMP’s Aquaculture Policy also requires adequate review for impacts on “the existing plants, animals and physical characteristics of the shorelines” and precludes aquaculture development that would “cause extensive erosion or accretion along adjacent shorelines.” Taylor’s study of the project’s impacts on the shoreline environment is inadequate. The project will adversely impact existing plants and animals by reducing phytoplankton, zooplankton, forage fish larvae, and forage fish spawning substrate. The mussel rafts threaten a critical food source for salmonids and other native fish. Taylor provided very little evidence addressing impacts to the shoreline itself. Mr. Penttila identified the proposed beach assembly site as a potential spawning habitat for surf smelt and sand lance.

D. The Project is Inconsistent with the “Regional Criteria” in Thurston County’s SMP

Aquaculture activities must comply with Thurston County’s “Regional Criteria” under the SMP. Under Regional Criteria 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 ecosystem when a change is proposed to a lesser part of the system, like a marshland or tideland.

The applicant as failed to assess the cumulative impact aquaculture activities in Totten Inlet. The Regional Criteria B requires a review of the impact on the larger ecosystem, not just the local system. This is particularly important under Regional Criteria

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76 SMP Sec. 3(II)(B)(9), (C)(1).
77 SMP at Sec. 2(V)(B).
B, which prioritizes the protection of “water quality and aquatic habitat as a primary goal.”
(Emphasis added).

A cumulative effects analysis is critical to determining whether Taylor’s proposal is consistent with the SMA’s mandate to control pollution and prevent damage to the natural environment. The resulting impact of the numerous adverse impacts to the marine ecosystem is unknown. This is particularly problematic given the numerous individual adverse impacts the project poses to the carrying capacity of Totten Inlet. See supra, III(A), II(D)(4). The project is inconsistent with the SMP because the applicant has not demonstrated that the water quality and aquatic habitat will be protected and the raft will preserve a struggling marine ecosystem.

The SMP also restricts water-dependent or water-related industrial uses from encroaching upon otherwise healthy marine ecosystems:

Future water-dependent or water-related industrial uses shall be channeled into shoreline areas already so utilized or into those shoreline areas which lend themselves to suitable industrial development. Where industry is now located in shoreline areas that are more suited to other uses, it is the policy of this Master Program to minimize expansion of such industry.

Taylor’s proposal violates this condition because while Totten Inlet is already occupied by excessive aquacultural activities, the proposed site of the mussel raft in North Totten Inlet is relatively healthy. Allowing yet another mussel farm to operate an industrial farm will adversely impact the water column in the vicinity of the project and further degrade the habitat for native flora and fauna. See supra at III(A), II(D)(4).

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78 RCW 90.58.020.
79 SMP at Sec. 2(V)(C).
80 See Exhibit 33 at p. 32-34.
The SMP’s Regional Criteria also demand preservation of significant shorelines in Thurston County:

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.81

The county’s claim that Totten Inlet is only scenic and aesthetic to the residents of the area is patently false. The legislature has recognized Puget Sound is a “national treasure and unique resource” and that it “must be restored and protected in a more coherent and effective manner.”82 Residents provided comments and testimony about the Capitol Land Trust’s recent acquisition of a nearby shoreline of “enormous biological value” known as Adams Cove.83 The shoreline estuary is used by spawning forage fish and provides habitat for Puget Sound coho, winter steelhead, chino, summer chum, and coastal sea-run cutthroat.84

IV. CONCLUSION

Taylor has not met its burden of proof to establish that the proposed mussel farm will comply with the Shoreline Management Act or the Thurston County Shoreline Master Program. The Hearing Examiner should deny the requested Shoreline Substantial Development Permit.

81 SMP at Sec. 2(V)(G).
82 RCW 90.71.200(1)(a)(e).
83 See Exhibit 33 at p. 32-34.
84 Id. at 33.
Dated this 29th day of April, 2012.

Respectfully submitted

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