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**COMMUNITY PLANNING &
ECONOMIC DEVELOPMENT DEPARTMENT**

Creating Solutions for Our Future

Joshua Cummings, Director

Project 2022103702 – Taylor Geoduck Farm

From Staff: Scott McCormick, MES, Associate Planner

To: Hearing Examiner, Sharon Rice

Date: January 22, 2024

Taylor Shellfish Project - Staff Response to Public Comments:

Note: All of these comments are first draft due to limited time. Significant research and editing were not possible so staff apologizes if there are inaccuracies or inconsistencies.

- 4a. Forage fish concerns. Staff is not aware of studies indicating geoduck aquaculture in particular is a primary culprit in relation to reductions in forage fish. It may be and it may not be. Further study is likely needed to study this relationship. Whether this project should bear the brunt of this further study isn't a question staff can answer. Given the relatively short history of this type of aquaculture it would seem unlikely that it is the cause of reductions in forage fish. There are likely many factors such as global warming and many others that influence this in addition to aquaculture.
- 4b. Scenic, aesthetic and ecological standards of the SMP. These issues are addressed in the SMP and the applicable sections of the SMP were reviewed by staff and discussed in the staff report. These are legitimate concerns but they

also need to be balanced with the ability to propose and conduct uses within the shoreline environment. The permit review should and did look at these concerns and conditions were recommended in the staff report to try and address them to the extent possible.

- 4c. Opposed. Alteration of tide lands, global warming etc. Opposition acknowledged. No staff response.
- 4d. Opposed. No comment by staff.
- 4e. Opposed. Micro-plastics. The applicant provided an expert on micro-plastics who indicated there are many sources of these in the environment and geoduck farming may not be the biggest contributor. The problem is more complex than can be fully fleshed out in one geoduck farming review.
- 4f. Plastics and water quality. This has been addressed in earlier staff responses. It is not clear how the project would or could impact larger “flushing” issues present within this inlet. There are many statements in this comment letter that aren’t backed up with anything other than thoughts and opinions such as trapped contaminants etc. We have no indication there are contaminants of any significance within the farming area. They would not likely be found here more than any other areas. Testing the substrate for toxins is not a standard practice. There is also no information indicating that there is eelgrass at the site. Information provided points in the opposite direction. In terms of land use, aquaculture is permitted in this zone and within the Conservancy environment. In terms of aesthetics this site will not be using the PVC tubes shown in this comment letter. In terms of economics, the WA legislature have found that geoduck farming can add to the state and local economy.
- 4g. Opposed. It may be true that our SMP is out of date but it is the set of regulations we have. We can’t go beyond what is required by current codes. Criteria for review are in the staff report as required by our SMP. Moratorium? A decision of this scale would likely have to be made at the state or federal level.
- 4h. Ecosystem interruptions. It would be very difficult to tease out all of the ecosystem impacts relative to all other human related impacts such as heavy residential development of the shoreline, related bulkheads, leaking septic systems, recreational and commercial boating, fishing and many other human activities on or near the shoreline. In terms of the SMP and SMA, these criteria were looked at through the County review. Yes this is a flyway as is all of Thurston County. Whether geoduck farming or residential uses are a larger visual / aesthetic impact is up to individual interpretation.
- 4i. Objects to project. Industrialization (the use is an approved use by the SMP). Will impede access (plastic pipes). There will be no plastic pipes. Mesh tubes are proposed. General statements that this reverses all past conservation efforts

seem like a stretch and highly unlikely. The sustainability question cannot be answered by this project alone.

- 4j. Beach cleanup, fast foot containers mist. Plastics pollution comments. Unclear how this directly relates to the project. Debris directly related to geoduck operations is relevant and is why there are conditions recommended to address these impacts.
- 4k. Opposition. It isn't clear how recreational use on the commentors own private property will be harmed. The geoduck farm will be located on privately owned tidelands. Plastic debris was discussed. There are conditions related to monitoring and clean up of debris related to the project. It is not clear how this condition could be improved to more fully address the issue. Micro-plastics was mentioned. The applicant's provided an expert on the subject during the hearing (Dr. Schouf) who seemed to indicate there are many sources of micro-plastics such as laundry etc. It seems this subject could use more scientific study, but whether this project in particular is the tipping point regarding micro-plastics is not answerable by staff. Tubes and net bags were mentioned. No PVC tubes are proposed and staff is not clear on what "net bags" are so difficult to respond to.
- 4l. Mentions a fishing vessel. Given that this project has yet to be permitted, this fishing vessel was not related to this specific project. The bundle of rights mentioned may come from laws staff is not aware of. There did not appear to be a citation to this bundle of rights. Discusses Critical Area Ordinance (CAO) requirements that impacted upland properties. This project is under review via the SMP and not the CAO. This is not an upland project so residential buffers are not something that is considered. Property taxes. This is an issue to take up with the County Assessor. Planning / CPED do not decide property taxes though owners can request that their property taxes be reviewed if there are impacts from a land use permit. Climate change initiative. This seems to relate to activities at the state level and not the local County level.
- 4m1. Sense of place is important for all of the Puget Sound shoreline. Not only true of this site. This site is no more important than other shorelines except to those who live along this particular stretch of shoreline. If this project were located in an undeveloped area there would likely not be a great deal of public concern yet the impacts would be the same or similar. Regarding industrial use of the shoreline one question comes to mind. Should geoduck farming be allowed anywhere in the Puget Sound? Should it only be prohibited adjacent to existing residential uses where it is considered a nuisance? If anything it makes more sense to site these uses near already heavily impacted stretches of shoreline with significant residential development, bulkheads, septic systems, aesthetically impacted areas from residential development etc. rather than more natural areas where the only complainants would be animals who can't speak for themselves.

At least here the community can speak and be heard. That is not necessarily the case for unimpacted more natural areas.

- 4m2. Slope stability. Unstable slopes are often referred to as feeder bluffs. Feeder bluffs provide important inputs in to the nearshore and other parts of the shoreline environment. They provide sediment which helps maintain beach levels and new large woody debris that is important for nearshore species. If anything slides in these areas are a net benefit. Kelp and eelgrass was also mentioned. Staff has no information to support that these species are present.
- 4n. Property taxes are not a consideration or criteria for review of this project. Bush and Callows Acts are not criteria for review and the County has no ability to change these laws. Moratorium – This would be at a higher state and or federal level. There is no information that this site would be impacted more than other areas of the shoreline. As mentioned earlier it makes more sense to site these types of farming operations along already impacted shorelines with heavy residential development than impacting more natural areas. Lights, noise etc. – there are conditions relating to these specific issues. View impacts. Again it makes more sense to site these in areas with existing aesthetic impacts related to residential development. There is no requirement that shoreline uses have no aesthetic impact whatsoever. If the shellfish growers manual has not been updated since 2005 it should be just as the SMP is being updated after over 30 years. Photos of PVC tubes. No PVC tubes will be used by this project. The SMA and SMP have guidelines regarding aesthetics, public health, navigation etc. and these issues have been addressed through review of the applicable review criteria. These rules do not prohibit shoreline uses, but regulates them to reduce impacts and not fully eliminate them. It is possible that the new SMP will better address aquaculture, but it is yet to be adopted (see below).

Item 3 in the introduction. The new SMP has not yet been approved. This statement is not accurate.

This project was reviewed against all applicable review criteria. It is up to the Hearing Examiner to consider all of the information and make a decision. The photos in these comments are mostly not applicable. No PVC tubes are proposed. The photo of some sort of mesh bag do not appear to be related to geoduck so it is not clear what it intended to demonstrate.

Navigation – There is no information indicating there will be any significant impact to navigation.

- 4o. Opposed. Piecemeal permitting. Projects are permitted one at a time rather than in bulk. Property owners have a right to request permits whenever they decide to apply and there are timeframes for review of these projects. There is no moratorium in place at this time. Plastic tubes – No PVC tubes are proposed and netting may or may not be used depending on predation levels.

Contaminants – As earlier stated there is no information indicating any toxins in the site sediments. Harvest practices – It has been shown that the beach rapidly recovers after harvest. Industrial use – Aquaculture is a preferred use under the SMP. There may be impacts to biodiversity. However, staff does not have clear evidence on this type of impact. Microplastics – This is a new issue that has been brought up for this project. It has not been addressed in any detail with previous projects. As this is a new issue in relation to geoduck permitting it is difficult to make any decision in this regard with this particular permit. This would seem to be a larger issue to be addressed at the local, state and federal level in some coordinated manner. The issue is much bigger than this one project and it does not seem appropriate to put all of the burden of addressing this issue on this one applicant.

- 4p. Opposed. Concerns about human impacts. It is likely that residential development, bulkheads, septic systems etc. have a larger impact than the proposed geoduck bed. Whether this is a Taylor Shellfish operation or another operator makes little difference in terms of ecological impacts. This isn't an issue that can be addressed through the SSDP process. As stated by the Hearing Examiner, this is not a popularity contest. The number of people opposed has no bearing on the results. It is based on the record.
- 4q. Opposed. Agenda 2030 – UN. This project is not subject to review by the UN. Planet – This project cannot consider all environmental issues on the planet and there is no obvious link between geoduck farming and climate change. Off-site studies do not necessarily relate to on-site impacts. Harvest timing. This seems accurate.
- 4r. Opposed. Sediment concerns and toxins. Note – this is not Budd Inlet so comments related to Budd Inlet are not directly applicable to the site. No specific evidence that toxins are present.
- 4s. Burying the notice in the holiday season. Permit reviews do not stop during the holidays. Applicant's have a right to go to hearing when the project is ready to move forward regardless of when holidays fall. There was absolutely no intention to use the holiday as cover. The fact that we received well over 80 comments would indicate that the public had adequate opportunity to comment. This is in addition to a hearing that went nearly 6 hours which is nearly unprecedented, particularly for a relatively small project such as this. There was ample opportunity to comment on this application which was noticed initially in 2022.

Exhibit 5

Pg. 2 item. 1. True. The applicant bears the burden to prove their case.

- 2. No net loss. Thurston County is not the only agency involved. It takes all of the applicable agencies, including the Dept. of Ecology to make a final decision on no net loss. It has not been demonstrated that there will in fact be a net loss.

Pg. 3 item 3. No comment

Item 4. No comment

Misunderstood science – Refers to federal permitting by the US Army Corps, not permitting at the local level.

Refers to resiliency which is a finding of the SeaGrant report to the legislature.

Eel grass concerns – No eelgrass on the site per the record.

GARP report – It is the applicant's job to support their project in light of the applicable science.

Genetics – Staff is not knowledgeable on the related science. This is beyond the scope of the review criteria in the SMP. It is not clear how far beyond the SMP requirements staff can go.

Mentions PVC tubes and netting. This is not the method proposed by the applicant

Models – The scientific models discussed are beyond the scope of what the County can address given the relatively limited review criteria.

Mitigation – It is true that we don't know how to fully mitigate every possible impact that geoduck aquaculture may have on the environment.

Burden of proof. True. This is on the applicant to address all elements including the science.

Exhibit 6

Forage fish – There are conditions to site geoduck aquaculture at lower elevations where surf smelt and sand lance would not typically be.

Coastal anthropogenic activities – This would include residential development, bulkheads, leaking septic systems etc.

Evidence that geoduck will eat juvenile larva. Perhaps, but where's the science to support this?

Sheltered bays and coves – Not applicable. This is not such a site.

Filtering water – It would seem to be a good thing that Geoduck may clean the water to some extent.

Taxes – Some of the taxes mentioned related to a history of leaky septic systems along the shoreline.

No net loss and other concerns – As stated earlier, it is the job of the applicant to provide enough information to address regulatory standards. Conditions have been recommended which should help to mitigate environmental impacts to the extent feasible.

Exhibit 7 Microplastics – This is a new subject to be brought up during a shoreline permit for a geoduck operation. Staff has insufficient information to make a formal decision or recommendation as to how the project might mitigate for microplastics. The use of less materials on the beach via use of mesh tubes would appear to be a step in the right direction, but more information is needed and there are no standard conditions at this point to address microplastics.

Exhibit 8 Mitigation – It is true that all impacts are likely not being mitigated for, but at this point County staff do not have enough information to be able to condition the

project to fully eliminate plastics and microplastics. This is a larger issue than this one geoduck project can address.

Cumulative impacts – This would involve the entire south sound and not just Thurston County. A much larger study would be required to make this determination than could be done through review of one geoduck farm.

Cleaning water – Evidence that they don't clean the water?

Monitoring – True. The County does not have capacity to monitor these sites closely.

Benefits of aquaculture locally. It does provide some jobs, but yes, the bulk of harvested geoduck is exported. There is no regulatory problem with exporting shellfish.

Exhibit 9. No comment. Not sufficient time to review all of the scientific articles in time allowed. Some of the comments are repeats of previous comments. I also agree with Jack Reacher. Details do matter. It is unfortunately true that staff has not had sufficient time to review all comments, scientific studies and documents in great detail. Given that staff has limited knowledge of all of the issues around microplastics it is difficult to respond to all related comments. Staff would agree that further study is likely needed, but it would not seem appropriate to put that entire burden on the applicant even though they do have the burden of proof for their proposed project.

Exhibit 10. PVC tubes shown. This is not applicable. No PVC tubes are proposed. Mesh tubes are proposed which according to the applicant are less likely to become loosened and become flotsam. No information to the contrary was provided. Author mentions temporary increase in biodiversity, but indicates there are potential problems with this. Discusses accretion and erosion. No definitive information provided in this document proving one occurs over the other. They offer information that Geoduck clean water through filtration and take Nitrogen out of the environment. Discussed other benefits and information that there are minimal impacts from planting and harvesting geoduck. Staff has not had time to review supporting information.

Exhibit 11 - Chris Czesla resume – No comment

Exhibit 12 – Information from Confluence. Generally indicates that it is possible that the new flexible mesh tubes have less environmental impact. No additional comment

Exhibit 13 – More information from Confluence. Modeling discussed along with issues around use of various types of predator exclusion tubes. It seems that there are still a lot of unknowns based on this document but does attempt to indicate that the type of tubes proposed may be better and also that there is misunderstood science. No other comments.

Exhibit 14 – Rambol Memo – Indicates unknowns of microplastic (MP) science and that it is still relatively new and some of the science to date is flawed (general statement). Conclusion is again that this is a relatively new science and that aquaculture is not a significant contributor of MP.

Exhibit 15 – Resume of Dr. Schoof – no comment

Exhibit 16 - A Critical Assessment of Microplastics in Molluscan Shellfish with Recommendations for Experimental Protocols, Animal Husbandry, Publication, and Future Research. Review of abstract only seems to suggest that science to date is flawed and that there is insufficient evidence linking aquaculture and MP and that impacts to bi-valves is not significant. Staff don't have the expertise to comment further.

Exhibit 17 - Taylor Shellfish Henderson Bay Geoduck Farm. No comment on the many photos. Argue that new practices are an improvement. Mesh tubes are still a new method so little is known at this point though if they are spaced further apart than older PVC tubes this would seem to be an improvement. If they are less likely to become dislodged that is also a benefit but not much in the way of science at this point to know one way or another.

Exhibit 18 - Plastic Shellfish Gear Potential Issues. Dr. Schoof. Argues that most MP in water is from upland sources and that minimal MP impacts from aquaculture. Praises operators for beach cleanup efforts. No additional staff comments as not an expert on MP.

Exhibit 19 – Sand dollars memo. Mentions Haley Beach project. Staff is not familiar with this name for the site and not sure if it actually discussing the site in questions. Perhaps this is related to another site? Discusses WA DNR study. Indicates that Sand dollars are generally present where eelgrass is not present. Study apparently found that highest prevalence of Sand dollars are significant in the South Sound. This document seems to be related to another site (Foss site) which is not near the subject site so not clear of relevance. Indicates that there is little or not conflict between geoduck aquaculture and Sand dollars.

Exhibit 20 – SHB Decision regarding a Pierce County site. It would be more appropriate for the TC Prosecuting Attorneys Office to respond to this legal document. No staff comment.

Exhibit 21 – Bricklin Jan. 12, 2024

Regarding item no. 1. Mr. Bricklin did not cite a law or code in relation to his first statement and the statement is not in quotes so it is not clear where it is from. Regardless, the statement is misleading. You cannot, generally speaking approve or deny a permit through SEPA. You can condition and mitigate a project through SEPA, but SEPA is not a permit that can be approved or denied. There is always an

underlying permit associated with SEPA which can be approved or denied. In this case that permit is a Shoreline Substantial Development Permit (SSDP). The decision on the SSDP is up to the Hearing Examiner and not Thurston County Community Planning and Economic Development (CPED). SEPA is not a decision aside from whether it should be a DS, MDNS or DNS. In this case the project is relatively small and it would not be appropriate to issue a DS or Determination of Significance which would then trigger an Environmental Impact Statement which seems to be the request of some of the commentors.

The SEPA determination is an administrative decision which is appealable. The SEPA determination was not appealed for this project and is final. Adjacent property owners had the opportunity to appeal this decision but did not do so.

The statement that was repeated during the hearing and in Mr. Bricklin's written comments relating to staff unfamiliarity with the site was taken far out of context. When this statement was made it specifically related to storm / wave action at the site. It is true that staff did not spend days and weeks observing winter weather at the site but this would be infeasible. Staff used standard databases and mapping websites such as Thurston Geodata, Dept. of Ecology mapping and other aerial photo sites such as Google Earth to evaluate the site as well as possible without going out on a boat to the site. Staff determined that there was sufficient information, photos, reports etc. and that information in addition to mapping tools was sufficient and a site visit by boat was not necessary. Staff has kayaked this portion of shoreline and many others in the South Sound so at one time or another I have seen it though not for the purpose of a permit review. It was strictly recreational so does not relate directly to the project. However, this in addition to close to 25 years of shoreline permitting in Mason and Thurston Counties, with the bulk (20 years) in Thurston County has given me a very good understanding of the inlets, peninsulas, islands and shorelines in the South Sound including the stretch of shoreline being evaluated under this permit.

Item no. 2. – Staff reviewed the applicable sections of the Thurston County Shoreline Master Program (SMP) and Shoreline Management Act and provided applicable analysis. It is up to the Hearing Examiner at this point to take this information and make a decision or potentially remand back to staff if further analysis is needed.

Item 3. – Conditions were included in the SEPA determination for the project so it is unclear why the Quality Rock case was mentioned or what the point of this comment is.

Item. 4. – Unclear what the point of the comment is. Not able to provide comments.\

Item 5. – This comment goes on for some length but it seems that the focus is on no net loss. It does also discuss the commentor's view that staff was over-reliant on the applicable aquaculture regulations. Although the current SMP is over 30 years old it is the set of regulations we currently have in addition to SEPA and the SMA. The applicable SMP and SMA standards were reviewed and discussed by staff and a SEPA determination was issued and not appealed and became final. Staff did not believe

information was provided which would clearly demonstrate that the no net loss standard wasn't met by the project if it was appropriately conditioned.

Item 6. - This relates to a statement made by the Hearing Examiner. Staff does not believe it is appropriate to provide a response to this particular set of comments.

Exhibit 22 - Tonni Johnston Power Point

- Slide 1 - Prohibiting access or anything related to human access has no relationship to ecological function. Staff has no data relating to how flexible mesh tubes actually interact with or affect recreational boating. It would appear to be an improvement over hard PVC tubes.
- Slide 2 - Similar to what is stated above, human "encounters with the environment" is not something that is related to ecological health or net loss of habitat function. Human observations of the shoreline environment are important to those making those observations, but they don't have a direct relationship to ecological health of the shoreline.
- Slide 3 – The site as with most or all other areas of the South Sound undoubtedly contains many animals that rely on this habitat. That is true for other sites that have been approved for aquacultural activity. It is not clear how or why this site is substantially different from other sites approved for Geoduck aquaculture. In terms of noise there may be a degree of disturbance to humans and animals which is why there are conditions regarding noise and timing of operations.
- Slide 4 – There are recommended conditions related to monitoring trash and debris related to the proposed aquaculture operation.
- Slide 5 – Aluminum boat etc. It is not clear that the boat and other debris are directly related to geoduck aquaculture. The zip ties may be related, but this likely cannot be proven one way or another. There are other types of aquaculture and recreational uses that result in trash along the shoreline.
- Slide 6 – HDPE bags. It's not clear how this relates specifically to geoduck aquaculture. Trash and debris along the shoreline is a problem, but to staff's knowledge geoduck operators actively monitor for and remove trash on a regular basis and remove items not specifically related to their operations.
- Slide 7 – Zip ties. It is possible the zip ties mentioned are from a geoduck operation, but staff would not be able to prove this. There could be other sources. There is no way to know for certain.
- Slide 8 – Zip ties etc. I would think it would be very difficult to know with 100 percent certainty whether debris found on the shoreline is related to either commercial or recreational uses. Many residences along the shoreline have oyster bags and even very small geoduck beds. Recreational boating and fishing also contribute to trash along the shoreline. It would be very difficult to know for certain where any particular piece of trash along the shoreline comes from. Maybe all of the items in the photo are from commercial geoduck operations. More likely it is from multiple places and uses.

- Slide 9 – Related to another geoduck farmer and his boat. It isn't clear how this directly relates to this project so it is difficult to know how to respond.
- Slide 10 – Zip ties. Using a zip tie to meet gear marking conditions is not a prohibited practice at this point in time to staff's knowledge.
- Slide 11 includes a picture of a PVC geoduck tube. These types of tubes are not proposed for this site.
- Slide 12. Again, PVC tubes are not proposed for this project.
- Slide 13. This includes a photo of a different site that used PVC tubes and related netting gear. This site proposes the use of mesh tubes so it is difficult to compare or offer a response.
- Slide 14. What a WSU plastics lab teaches is not specifically known by staff. No study was referenced. It is possible plastics should be looked at more carefully but it is not known whether the source of plastics and microplastics is only related to geoduck aquaculture or what percentage of the total is related. It would be useful to have more scientific data regarding the sources of plastic pollution as it relates to geoduck aquaculture.
- Slide 15. – Spacing between geoduck tubes. It is true that there is no verification by the County as to the final spacing of tubes.
- Slide 16. – Fudging numbers... - It could not be known at this point whether the applicant will space tubes as proposed. More plastic likely does result in more pollution. That is a fair statement. I don't believe information was provided that would indicate "geoduck poop" is a problem or that the project will result in impacts from "non-native stock".
- Slide 17. – Sand dollars. The photo is too pixelated to identify anything on the beach. There is a recommended condition regarding sand dollars which is meant to help mitigate impacts to them. There was a statement about eelgrass, but there is no information indicating there is eelgrass on the site. Also a statement about another site that apparently planted geoducks too high on the beach. This project must be located within the boundaries of the subject property and a survey has been provided.
- Slide 18 – General statement regarding the site. It is difficult to respond directly.

Exhibit 23a – General comments about lacking science. No comment

Exhibit 23b – General comments. No comment

Exhibit 23c – Transpacific shipping and taxes don't warrant a response. The SMP standards were discussed in the staff report and none relate to these issues. No further comment on this subject. Shipping of harvested geoduck to China or elsewhere is not a SMP / SMA criteria for review of the project. Mission drift. Staff is following Department policies and direction involving review of land use permits. Tagged microplastics? How would the commentor suggest this be done. This not a serious comment. Staff is not an expert on MP and does not have any evidence that Dr. Schouf's comments are inaccurate.

Exhibit 23d – Squaxin Tribe. Yes, they were notified multiple times. Says can see eelgrass from aerial photos. This seems unlikely but perhaps true. Staff cannot comment on these claims as they seem to be opinion. If Taylor is ok with having the commentor do a second eelgrass survey staff has absolutely no problem with this. However staff believes that as of this time the record is closed on the project. There are comments regarding Dog fish but unclear from the science whether there is a relationship to geoduck farming. This is interesting information but not clear if relevant or not. This issue did not come up earlier in the project review as far as staff is aware. Unclear how environmental conditions over last 2 decades directly relates to geoduck farming. Staff does not have sufficient information to be able to comment. Mentions 9 acre site. The site is not 9 acres as described in the staff report. Knows Sand dollars will be decimated. Seems like an extreme comment based on unknown science. A creek was mentioned as running through the site previously. Streams on the beach continually move. They are not static. Unclear how this comment applies to the proposal. Issues over the last 20 years are not relevant to the proposal which has yet to be installed, harvested etc. so to assign blame to this project is not appropriate. Mentions a 5 acre farm on site. It is actually about 3.6 acres. Not 5 acres or 9 acres. “It can’t be good, no matter how many studies we do” No comment to this opinion statement or the Winston Churchill quote.

Exhibit 23e – Unclear how a fire relates to this project. The flexible tubes would not seem to have any impact on the ability to land boats near the site. Evidence? Third party monitoring – This would be a new type of condition on a shoreline permit. It is something worth considering for future projects, but at this point only the Hearing Examiner can add to the conditions. No further comment on this subject at this time. I don’t know that is well-known that Taylor does not install gear appropriately. This seems like speculation. Correct, there is too much plastic in marine waters, but how this project will contribute or not to this problem in any significant way is not clear from the materials provided.

Exhibit 23f – It is not clear how anything staff said indicated that the site was not visited. This is not an accurate accounting of what was said at the hearing.

Once again, when any statement remotely like this was stated by staff relating to any unfamiliarity with the site it directly related to wind and wave action at this particular site. It is true that staff did not spend days and weeks observing these natural processes at the site during stormy winter weather. One site visit during any sort of weather would not tell me anything about historic conditions which the local residents are much more familiar with as they are able to look out their window during rough, windy and rainy days along the shoreline. Staff does not have that ability.

Complaint about use of mesh tubes. The industry must be able to try using new methods as they are available. Many complaints were regarding PVC tubes and Taylor is trying to address those issues by using new methods. This is how improvements are made. By trying new things.

Sea lion issues. Staff is not versed on geoduck vs. Sea lions and how they interact. Seems like speculation.

Exhibit 23g – The writer lives in Oregon. General comments re: Sea lions etc. No science to date that staff is aware of. No further comment.

Exhibit 23h – A book is mentioned – “Count Down”. Staff does not have time to read a book for this project. Any time related to the project is charged to Taylor Shellfish and reading a book is not a reasonable use of staff time unfortunately. “Details matter” I would agree with both you and Reacher. I wish I had years to study this project more thoroughly. However, state law regulates the amount of time staff is permitted to review land use projects and the County is already well beyond what we are permitted by state law. Staff believes that it will take much more than Thurston County to determine cumulative impacts as we are limited geographically to Thurston County. We don’t have sufficient time or jurisdiction to look further beyond County boundaries in any great detail. It is very difficult to apply science from other sites to this site in Thurston County and on Johnson Point for this particular project. It will take local, state and federal agencies to conduct a thorough cumulative impact analysis that would be as free of bias as it could be. One challenge is that the use of mesh tubes rather than the old standard PVC tubes is relatively new so there isn’t as much information on the use of this newer type of material. Although it sounds potentially better we don’t have enough information to say whether one is better than the other in terms of microplastics or other environmental issues. The industry does need to be able to try new things in the effort to reduce impacts, decrease the volume of plastics on the beach and hopefully result in less debris. It is possible that this is a move in the right direction. It would seem so, but we don’t know for certain as it’s a relatively new practice. The mesh nets seem to be an improvement in terms of aesthetics. Moving away from rows of PVC tubes and lower density of plastic seems like a positive. Being flexible would seem to have some positives in terms of conflict with boaters, kayakers as well.

Exhibit 23 i - When beginning to read I noticed the page count. I was on page one of 174. Apologies, but there is insufficient time for staff to fully respond to all of this information. I’ll only be providing very general responses to the extent possible. One comment is that many scientific articles, if not most suggest that additional research is warranted unless they come to a firm conclusion and there is nothing left to study. Staff would be interested to learn much more about surf smelt and sand lance. I’m sure I could stand to learn more about all of the ecological functions and interactions that occur in different shoreline, upland, riparian, wetland, prairie and various forest type of environments that occur in Thurston County. However, there is limited time for staff to attain expertise in all subjects. There is some interesting information on sand lance and surf smelt. There is a discussion of tidal heights where habitat exists. There are conditions on the permit regarding installation of geoduck materials below a particular tidal height for the purpose of protection nearshore habitat. There is discussion of cumulative impact analysis. It is true that this needs to be further studied and it very difficult to tell exactly which project like this could be the tipping point

for how much of the shoreline can be farmed before the impacts are irreversible or near so. This would be very useful information for natural resource and regulatory agencies, including the County.

Exhibit 23 j – Opposed. There are high winds based on sailing experience and this could cause loss of gear. At this point it probably too early to know how the gear and this beach will interact. This may be a good learning experience if this is a particularly challenging site in terms of wind and waves. If the hearing examiner believes further eelgrass, kelp or other surveys would be useful staff would support that.

Exhibit 23k – Opposed. In terms of time, this project was Noticed quite some time ago. I believe a year or more so it's not been rushed. It is actually running quite far behind in terms of the time allowed staff by state law. There is discussion critical of the science provided by applicant witnesses. Staff doesn't have the ability to compare various scientific studies. It is always good to know more. The author seems to indicate that the use of mesh tubes should not be allowed until they are further studies. I'm not sure that the SMP would disallow a new, potentially less impactful method. There seem to be some benefits in terms of the volume of plastics, potential improvement to aesthetic impacts, less impact on recreational boating and use of the shoreline in comparison with rigid PVC tubes. It is important to allow new methods to be tried.

Exhibit 24 Opposed. Refers first to taxes related to septic system monitoring. It is unclear how Geoduck are reversing the improvements made by property owners. The reason for these taxes is because many shoreline septic systems have failed over the years, impacting water quality. The fact that shoreline residents are being held accountable for previously failing septic systems simply indicates that it took government getting involved to help solve the problem created by heaving residential development of the shoreline. It's not clear where the link is. It is unlikely that the tidal property in question has been a contributor to water quality problems. Possible future water quality impacts from the project are unknown at this point.

Shoreline development is discussed. It is true that heavy shoreline development has led to increased water quality problems in the south sound and elsewhere on Puget Sound. Other impacts to the shoreline in addition to failing septic systems, lawn chemicals, bulk heads and removal of vegetation to improve views has had substantial impact on water quality and habitat. If a moratorium on the development of Geoduck farming is appropriate, perhaps moratoriums on other types of shoreline development is also appropriate. The effects of residential development of south sound shorelines has also not been sufficiently studied.

Photos of PVC tubes and other structures that appear to be related to other types of shellfish farming were included. It is not clear how the photos relate directly to this project. Sea lions were discussed. There doesn't seem to be much concrete information about how they relate to this project and whether they are being drawn to this area because of Geoduck farming and if so what the impacts are. This in addition to microplastic concerns are fairly new discussion points for a Geoduck farm. Perhaps they should be studied further but to put this project on hold until all of the science has been completed does not seem appropriate.

The Shellfish Growers Guide was discussed. If the document hasn't been updated since 2005, staff would agree that it needs some work. It is also true that there is not a great deal of oversight once permits are issued. This would seem to be a problem. However, staffing levels do not allow for any significant monitoring after a permit is issued. Permit fees pay for County review of permits only during the review and not afterwards. Unfortunately, there aren't extra funds to pay for after permit monitoring. It is also true that the new type of mesh tubes proposed have not been thoroughly studied but there is no information to suggest they would be worse than PVC tubes. There appear to be some improvement over older methods but they need to be tried before making decisions about them.

There are several photos of PVC tubes on the beach and on rafts but these photos are not applicable to this project.

Exhibit 25 – Discussion of shoreline education opportunities being diminished. It sounds like part of the learning involves looking at aquaculture. This would be an opportunity to discuss Geoduck aquaculture and use of new techniques. It sounds like Taylor would be willing to show their site to members of the public. It isn't clear how the project would impact recreational oyster farming. Are oyster bags permitted on private tidelands. Staff is not clear on laws regarding public access to private tidelands so cannot respond to some of these comments.

Is oyster farming better than Geoduck farming. It appears that plastics are also used in the cultivation of oysters based on the photos provided. Are there also microplastic problems related to other types of aquaculture? There seem to be opportunities for further study.

Exhibit 26 – Staff would agree that the condition (22) regarding sand dollars could be modified as proposed by the applicant. Staff is in agreement as to their understanding of several other conditions. As they are not requesting to amend these conditions staff has no further comment on the issue of conditions.

Note: This document is 143 pages and staff did not have time to thoroughly read the entire document so comments will only be general.

Confluence document – provided information on scientific studies and that the federal agencies have determined previously that the type of aquaculture proposed does not represent a take in terms of the ESA.

A document regarding microplastics was provided (Ramboll Memo). Staff does not have the expertise necessary to compare this document with other information on microplastics provided by opponents of the project.

A discussion of consistency with the Thurston County SMP was provided. Staff have already gone through the applicable policies and criteria and has no additional comments.

Biological opinion – This document discusses common BMPs and practices Washington Shellfish Initiative seems to be supportive of aquaculture in part as a sign of a healthier and cleaner shoreline. Aquaculture operators are likely more concerned with

water quality than the general public as they require clean water to operate. This initiative seems to be in line with NOAAs' findings that aquaculture can be beneficial. There is a study on eelgrass in these comments. Since at this point it's not been shown that eelgrass is present staff has few comments on these scientific studies. Staff did not have sufficient time to thoroughly read these studies though generally they seem to indicate relatively few environmental impacts. Some of these studies occurred in British Columbia so this should be considered when applying them to the South Sound. There is a document put out by NOAA Fisheries in this set of comments which seems to support commercial aquaculture if done properly.

No further comments on this exhibit.

Hello,

I reached out to Examiner Rice and she did have a request for additional information, she will also be making note of the request in the decision.

Could staff and applicant reps please address public comment about Taylor Shellfish geoduck gear not being marked with identifying information. Is labeling required? What are Taylor's practices? Would gear on this farm be labeled/identified?

Thank you,

Sonja Cady | Land Use Clerk

Thurston County Community Planning & Economic Development

3000 Pacific Ave SE, Suite 100, Olympia, Washington 98501

Phone (360) 867-2117 | Mobile (360) 972-6901 | Fax (360) 754-2939 | TDD (800) 833-6388

sonja.cady@co.thurston.wa.us | www.thurstoncountybdc.com

Staff response: Yes, labeling is required. Not by code, but it is a standard BMP that is required for all projects like this. Gear would be labeled for this project as conditioned.

Thank you.

Scott McCormick

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