Jordan Cove comments,
Oregon Department of State Lands,
775 Summer St. N.E., Ste 100,
Salem, OR 97301-1279

Janet Hodder
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Coos Bay
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January 12, 2019

To whom it may concern:

This cover letter and the narrative contained in this transmittal are submitted in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

The comments attached to this letter are based on my review of the materials presented in the permit application to DSL. I have structured the comments in a format that I hope will assist personnel responsible for making decisions on the permit. ORS 196.795-990 states that DSL is required to determine whether:
(1) the project is consistent with the protection, conservation, and best uses of the water resources of the state;
(2) the project is the practicable alternative with the least adverse impacts on the water resources; and
(3) the project does not unreasonably interfere with the preservation of waters for navigation, fishing, or public recreation.

My comments illustrate salient features of the material presented in the application that show, based on the ORS 196.795-990 statute, DSL should substantiate **a decision to deny the permit** requested by the applicant, Jordan Cove Energy Project LP. Additionally prior to consideration of this permit DSL should determine if this project is consistent with the Governor's Executive Order on Environmental Justice and whether it should be reviewed by the Governors Environmental justice task force as part of the permit review process.

As there are no page numbers on the 3,638 page document all references within my comments are to the page numbers of the supplied DSL PDF permit.

Comments attached to this letter are presented in eight thematic chapters in order to facilitate review. The chapters relate to discreet aspects of the activities encompassed in permit APP0060697.

Chapter 1 Comments on the proposed navigation reliability improvement actions
Chapter 2 Comments on the proposed eelgrass mitigation actions
Chapter 3 Comments on the proposed navigation access channel and marine slip
Chapter 4 Comments on the proposed mitigation actions at the Kentuck Slough site
Chapter 5 Comments regarding dredged material excavation, transport and disposal
Chapter 6 Comments regarding implications for fishing and public recreation
Chapter 7 Comments on the ODSL Wetland Impacts Avoidance and Minimization Tech Memo
Chapter 8 Comments regarding the inadequacy of the permit due to its environmental justice impacts, content and presentation

These comments should provide ample evidence that the permit request should be denied. Thank you for providing an opportunity to comment on the proposed work. If you have any questions please do not hesitate to contact me.

Yours sincerely,

A signed copy of this letter and comments has been mailed to the Oregon Department of State Lands

Jan Hodder Ph. D.
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Comments of Janet Hodder in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

Chapter 1: COMMENTS ON THE PROPOSED NAVIGATION RELIABILITY IMPROVEMENT ACTIONS

The application from Jordan Cove energy Project LP to the Division of State Lands (APP0060697) related to the Navigation Reliability Improvements has many aspects that substantiate a decision to deny the permit.

The applicant proposes to dredge four areas adjacent to the existing federally approved deep draft navigation channel. The proposed Navigation Reliability Improvement (NRI) work will entail the excavation, mobilization and transport of approximately 505,500 cubic yards of soft siltstone and sandstone, and 78,800 cubic yards of sand. Material dredged from the four areas is to be transferred as a liquid slurry via a 24" diameter pipeline 8.3 miles to a disposal site (APCO site 2 and possibly1) in the vicinity of the Hwy 101 Bridge in North Bend. The pipeline will be laid at the bottom of the Federal navigation channel connecting each of the four NRI dredge areas to the APCO sediment disposal sites. Dredging work tied to this aspect of the JCEP is estimated to directly impact 35.4 acres of subtidal estuarine habitat.

Examples of the insufficiency of the application include, but are not limited to:

1. The stated need for the Navigation Reliability Improvements.

Page 2 of the PDF states that," *Modeling showed that without the NRIs in place, the greater delays imposed by the Pilots on LNG ship transits of the channel due to environmental conditions would result in a potential annual loss of production at the facility equal to about 38,000 tonnes of LNG. This would equate to a direct loss of revenue of about $8.0 million per year for the facility".* Jordan Cove proposes to export 7.8 million tons of LNG/annum. Without the NRI dredging they can export 7,762,000 tons (7,800,000 minus 38,000) which amounts to 99.51% of their anticipated output. This insignificant reduction in production is not a reason to remove 580,000 cu yds of substrate from Coos Bay and this action should not be supported by DSL. The insignificant economic benefits (ORS 196.825 (3)) likely to result from the proposed removal of this amount of material is reason to deny the dredging of the NRI.

The permit request also states, "*The Navigation Reliability Improvements NRI were determined to be necessary by the 2015 Asian customers"* (PDF page2). There is no evidence in the permit to know if these customers are still involved in the project as the applicant (Pembina) is not the same as the applicant in 20015 so this statement should be ignored, not used as a justification for the NRI dredging, and removed from the application.

2. Compensatory mitigation to address temporary and permanent impacts to affected habitats associated with the NRIs is not addressed.

Although the application states that 35.4 acres of subtidal estuarine habitat will be directly impacted because of the NRI dredging work, the application does not mention how the impacts to these habitats will be mitigated. In some situations e.g NRI3, the proposed dredging work will convert subtidal soft bottom habitat to a bedrock sub-tidal hard bottom habitat. In all situations, the proposed initial impacts will require follow-on maintenance dredging work that will result in regular disturbance to the biological communities that interact with these habitats. In the absence of the proposed work, the sub tidal habitats adjacent to the navigation channel would not experience direct impacts related to excavation or ongoing disturbance related to maintenance dredging. The impacts of initial dredging and subsequent

maintenance dredging will disrupt the function of these habitats for an indefinite period of time into the future. It is unlikely that the impacts resulting from the proposed dredging work will have a positive effect on the environment. It is more likely that the dredging work will have a detrimental effect on the ecological functions and values of the wetland habitats in the proposed NRI dredge areas. The nature and extent of the negative effects on subtidal habitats in the proposed NRI dredge areas should be characterized. A plan designed to mitigate these impacts should be developed and the applicant should be required to implement a compensatory mitigation plan designed to offset the impacts resulting from the proposed work.

3. There is insufficient detail to explain the potential effects of the removal of material from the NRIs.

87% (505,500 cubic yards) of the total volume of material to be dredged from the NRI areas is soft siltstone and sandstone bedrock. These dredge areas are situated up to 8.3 miles from the APCO sites. The permit materials vacillates between whether the dredging will be accomplished with mechanical or hydraulic methods. In section 6.2.5.1 Construction Means and Methods (PDF page 100) it states that two methods of dredging could be used for the NRIs: mechanical dredging via clamshell or excavator, and hydraulic via hopper dredge or cutter suction dredging. There is no discussion of how the two methods differ with respect to working on the type of substrate at the four NRIs. The majority of narrative and figures in this permit application however, imply that the hydraulic cutter suction dredging will be used, as they show dredge pipelines along the 8.3 miles from NRI1 to the APCO site. The permit does not include information regarding the feasibility of pumping dredged bedrock sediments via a hydraulic pipeline up to 8.3 miles in length to the APCO site. The permit is not clear on excavation and transport of rock. The proposal to transport dredged rock via a 24" pipeline suggests that bedrock fragments to be transported will have a maximum particle dimension of something less than 24"overall. Does this mean that excavated bedrock fragments will be ground to a dimension suitable for transfer as a liquid slurry? If so, how will this affect water quality? Will the appropriate fractured bedrock particle sizes be produced on the seafloor by the dredge cutter head? If not how will the areas be excavated? The permit mentions that blasting may be necessary in some areas of the NRI expansions. Should this be the case the permit should include the effects of this activity on wildlife, including fish, pinnipeds, waterfowl, water quality, commercial fishing and recreation activities as required in the ORS 196.795-990 statute.

4. The permit has not adequately covered impacts of the removal actions associated with estuarine habitats and their component organisms.

The proposed NRI sediment transport pipeline traverses a large segment of the estuary that is zoned as natural aquatic in the Coos Bay Estuary Management plan and has substantial wildlife use during the in-window months of dredging operation including, but not limited to, important waterfowl areas, harbor seal haul-outs and pupping sites, herring spawning sites, and habitats important for fish feeding. The proposed activities are inconsistent with the zoning of this area.

Increasing the size of the Federal navigation channel as a result of NRI dredging will result in changes in the hydrodynamic regime in Coos Bay. There will be an increased intrusion of salt water into the bay via the salt wedge thus resulting in a change in the salinity regime experienced by benthic organisms. The permit does not address any changes in salinity or the impacts on estuarine organisms in Coos Bay as a result of the removal action.

The inclusion of one or possibly two booster pumps along the NRI pipeline means that while much of the pipeline will rest on the bottom, the booster pump stations will operate on the water surface with

inflow and outflow pipeline segments rising from the bottom to the pump stations at the surface. The permit does not address the impact of the dredging activities associated with noise that will be generated by both the movement of dredged material through the pipe, or the noise associated with the use of booster pumps. (Also see Chapter 3 for a discussion of noise impacts on harbor seals). No consideration of harbor seal haul out sites is noted in the permit; booster pump stations should not be permitted in locations where the above bottom inflow and outflow pipeline segments interrupt the unrestrained ingress and egress routes used by seals to access the haul out sites.

5. The permit does not provide sufficient information about how the pipeline and booster pumps will be impacted by weather and water movements.

While much of the pipeline will rest on the bottom, the booster pump stations will operate on the water surface with inflow and outflow pipeline segments rising from the bottom to the pump stations at the surface. It is not clear how much of the pipe will be in the water column and what effects wind driven waves and currents will have on the above-bottom pipe and whether there is potential for leakage from the pipe or separation from the booster pump in inclement weather or high current velocities. The permit does not indicate how the booster pump stations will be moored.

6. The permit should evaluate any effects of increasing the channel width in the region of NRI1 that would impact shoreline erosion on the east side of the bay adjacent to NRI1.

Increasing wave heights and sea level rise have meant that the Fossil Point shoreline eastward of the proposed NRI1 dredging has been eroding in recent years resulting in the loss of salt marsh and terrestrial habitat. The deepening and widening of the channel because of the proposed NRI1 actions may increase the erosion potential and the permit should address this potential.

7. Independent Utility is not demonstrated.

DSL's administrative rules governing the issuance and enforcement of removal-fill authorizations within waters of Oregon including wetlands require that a permit application include, " *a demonstration of independent utility to include all phases, projects or elements of the proposed project which will require removal-fill activities;*" where, *""Independent Utility" as used in the definition of "project," means that the project accomplishes its intended purpose without the need for additional phases or other projects requiring further removal-fill activities*." It is well known that the Port of Coos Bay is proposing to deepen and widen the Federal navigation channel through its Coos Bay Channel Modification Project and is coordinating with the U.S. Army Corps of Engineers to facilitate this action. The Portland Sediment Evaluation Team Technical Memorandum Re: Review of the March 11, 2011 Level 2 Sediment Characterization Report referenced on PDF page 1058 in this permit provides details of this project. Additionally the Jordan Cove Energy Project has provided the Port of Coos Bay with funds to initiate the planning for the increase in the size of the navigation channel. Thus the current fill and removal permit does not meet the standard of independent utility and should be denied.

Comments of Janet Hodder in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

The application from Jordan Cove Energy Project LP to the Division of State Lands (APP0060697) related to the eelgrass mitigation plan has many aspects that substantiate a decision to deny the permit.

CHAPTER 2 COMMENTS ON THE PROPOSED EELGRASS MITIGATION

As required in the ORS 196.795-990 statute the applicant proposes to create eelgrass habitat to mitigate for the permanent destruction of eelgrass habitat in the proposed LNG terminal access channel The mitigation site chosen in the permit is on a 9.3 acre intertidal estuarine tideflat area south of the western tip of the North Bend Airport runway. **Examples of the insufficiency of the application include, but are not limited to:**

1. **Destruction of a functioning part of the estuary to build eelgrass bed**

The application does not include a thorough characterization of existing wetland functions and values at the proposed eelgrass mitigation site. There is no description of the substrate attributes or of biological communities currently found in the existing tideflat area selected as an eelgrass mitigation site. Removal of 46,535 cubic yards of sediment from the wetland surface of the proposed mitigation area will result on the complete removal of any epibenthic biota and infauna from an area that is zoned natural aquatic in the Coos Bay Estuary Management plan. The absence of information about the current conditions, functions and values of the existing wetland make it impossible to determine if construction of an eelgrass bed at this location will result in a net increase or decrease in the functions and values of the wetlands at this location.

2. **Design and placement of the eelgrass mitigation**

Figure 2-10. Bathymetric Changes at the Eelgrass Mitigation Site – page 150 of the PDF and repeated as Figure 1-2 on PDF page 1236 - shows the current and projected elevations of the eelgrass mitigation site. The projected elevation is designed to support the appropriate elevation to encourage successful establishment of eelgrass transplants. Looking at this elevation map it appears that the project will be creating a “sump” - essentially a deeper hole surrounded by a higher elevation plain. This has serious implications for the functioning of the estuary. At certain tide levels, around those lower than 0 foot NAVD08, the excavated eelgrass mitigation area is likely to hold water in a shallow intertidal pond formed by the dredging. Juvenile fish, including salmon smolts and potentially eulachon, are attracted to eelgrass habitats. Fish seeking low tide refuge in shallow intertidal ponded water areas are particularly vulnerable to predation by picivorous birds and mammalian mesopredators. Constructing an eelgrass mitigation area in the manner described in the application may result in the creation of an eelgrass bed that is attractive to fish. The design of the mitigation site, however, may expose fish using it to higher rates of predation than the eelgrass bed to be destroyed by the construction of the access channel.

On sunny low tide days, when the tide level leaves water in the excavated area, the remaining water will warm and have a reduced oxygen content. Many studies have shown that low oxygen and high temperatures have negative impacts on eelgrass photosynthesis and growth. These negative impacts are most notable with increasing temperature e.g. Pulido and Borum (2010), Raun and Borum

(20130. Recent studies in the South Slough National Estuarine Research Reserve, located in Coos Bay south of the Jordan Cove project area, have shown that a small elevation in temperature over a short period, has resulted in a serious decline in eelgrass cover. Additionally organisms associated with the eelgrass bed will experience a similar stress. This has serious implications for the proposed eelgrass mitigation.

The establishment of eelgrass beds in areas devoid of this plant is a difficult task. Success and failure are dependent on multiple factors and to persist, eelgrass requires appropriate levels of light, salinity, temperature, nutrients, and physical energy (e.g., waves and tidal currents), as well as certain types of substrata. It has been shown that eelgrass presence depends on multiple factors that are strongly correlated (van der Heide et al. 2009). Other than temperature and hypoxia, high water column inorganic nitrogen concentrations can promote algae blooms that smother the eelgrass (Thom et al. 2005). This additional stressor is of concern as the eelgrass mitigation site is close to the North Bend waste water treatment plant outfall.

The eelgrass bed that the applicant proposes to destroy is situated on the margin of an intertidal zone that gradually slopes toward an adjoining sub-tidal area. Fish and mobile invertebrates such as Dungeness crabs using this area always have access to deeper water habitats. In contrast, fish and mobile invertebrates using the mitigation eelgrass habitat area will have only intermittent access to deeper water habitats. Because the applicant has selected a site situated in the middle of a broad, gently sloping intertidal flat, the risk of predation to fish and mobile invertebrates associated with the eelgrass habitat that the applicant proposes to create as compensatory mitigation, is likely to be significantly greater than the risk of predation to fish and mobile invertebrates in the area the applicant proposes to permanently destroy. The dissimilar site attributes of the eelgrass bed to be permanently destroyed, and the proposed compensatory mitigation site hold significant potential to create an eelgrass habitat that lacks important attributes of the habitat to be destroyed.

3. **Issues associated with the placement of the dredge pipe and booster pumps in the vicinity of the eelgrass mitigation site.**

Elevation of the temporary dredge lines to avoid laying them on eelgrass beds or the intertidal, including those required for the eelgrass mitigation site, requires placement of some type of support pilings. There is no discussion of scour that will occur because of the presence of these pilings. Where they are over or close to eelgrass it is likely there will be a loss of eelgrass as a result of scouring. Pregnall MM (1993) Everett et al. (1995) showed that stakes and pilings associated with rack oyster culture placed in eelgrass beds in the South Slough of Coos Bay resulted in scouring, alteration of sediment characteristics and a reduction in eelgrass density. Additionally it is not clear how the applicant will prevent fouling of the pipeline by natural materials e.g. algal sheets, drift eelgrass, terrestrial vegetation. logs etc. and anthropogenic materials e.g plastics during the period of use and the subsequent resulting alteration of estuarine habitats as a result of the pipeline placement. Depending on how long the pilings and the booster pumps are present, shading effect are also possible.

Where the pipe is not elevated above the substrate, it will lay flat on the intertidal. Here it also has the potential for scour issues due to tidal and current movements thus creating disturbance in the intertidal habitats that it crosses. The route of the pipeline appears to cross low gradient intertidal areas. This may result in the pipeline forming a dam-like structure that restrict or alter tidally mediated

flooding and dewatering of intertidal areas. It will also act as a dam to the movement of small organisms such as recently settled and juvenile Dungeness crabs. Other aspects of the pipe placement and operations have potential adverse impacts on water quality. They include pressure changes during startup and shutdown of sediment pumping operations and during routine tidal fluctuations. These may cause pipelines to move across the sediment surface potentially suspending the sediments underlying the pipe. The process of laying out and retrieving the pipeline systems during construction and decommissioning holds potential to disrupt and suspend sediments. Dewatering pipelines during demobilization at the end of construction has potential to release impaired quality water and sediment into waters of the state.

4. **The long term maintenance of the dredged eelgrass mitigation site**

Although several projects near the proposed mitigation site may have influenced or altered the forcing parameters that resulted in the present sediment surface elevations and dynamics at the site, it is reasonable to assume that the present sediment surface topography at the site represents a near equilibrium state. Surface topography and elevations near the proposed eelgrass mitigation site are driven by the resultant interactions of ambient wind and wave forcing, sediment deposition and resuspension, and bioturbation. Although models, such as those provided in Appendix D: Eelgrass Site Geomorphic History and Analysis (PDF page 1230, can provide information on potential outcomes of the proposed mitigation under "normal" conditions they do not take into account effects of unusual, rare, but impactful events. We have seen many examples of these over the years in Coos Bay. For example, the complete extirpation of dune grass and beach sediments in front of the Charleston Coast Guard housing during a single storm event; the gradual retreat of the shoreline on the west side of the bay in the vicinity of the current BLM boat ramp; and the erosion of the shoreline at Fossil Point as a result of increased wave heights in the Pacific Northwest (Ruggiero 2010).

Sediment characteristics in the eelgrass mitigation area were not described in the permit as far as I could find but shoreline sediments in the general vicinity of the proposed mitigation site tend to be non-cohesive, unconsolidated sand and silty sand. These sediments are readily re-suspended and incrementally moved by several different hydrological forces. They include routine tidal forcing including scour and bedload transport by tidal water fluxes across the sediment surface, wave wash at the submergence and dewatering tidal front as the tide rises and falls, and resuspension by wind driven wave forcing at times when the tideflat is submerged at a depth shallower than the effective height of wind driven surface waves. The dredging work required to create the proposed eelgrass mitigation site surface elevations will alter the surface topography and sediment dynamic conditions at the site. It should be expected that the sediments in the area surrounding dredged area will respond to the disequilibrium conditions created by the dredging work especially as mentioned above in circumstances that the model did not envision. Because the non-cohesive sediments in the area are relatively mobile, and because the proposed mitigation site is situated in the middle of a large, low-gradient intertidal flat rich in mobile sediments, it is not likely that the excavated sediment surface elevations in the proposed mitigation site will persist on a permanent basis. It is reasonable to anticipate that the dredged area will gradually shallow until it matches or approximates the elevation of the sediments of the surrounding tideflats and become unsuitable for the transplanted eelgrass.

5. **52 – Natural Aquatic zone incompatibility**

The eelgrass mitigation site is located in a portion of the estuary classified as "52-Natural Aquatic" in the Coos Bay Estuary Management Plan. This classification prohibits dredging and thus makes the proposed eelgrass mitigation plans null and void. This same zoning designation is also identified in the City of Coos Bay's Land Use Ordinance 312. Thus to undertake the proposed eelgrass mitigation dredging work there would need to be an amendment of the Coos Bay Estuary Management Plan and the City of Coos Bay's land use ordinance. Both of these plans are part of Oregon's Coastal Zone Management plan that has been acknowledged by the US Department of Commerce under provisions of the Federal Coastal Zone Management Act. Therefore the planned eelgrass mitigation site chosen by the applicant should be denied.

6. The need for approval from the airport?

The permit states that coordination and clearances from the nearby airport may be needed (PDF page 1131) for the proposed eelgrass mitigation site. Why has this not been obtained? As no alternatives were explored in the permit for eelgrass mitigation then if clearance is not obtained then the entire eelgrass mitigation section of this permit is null and void.

Comments of Janet Hodder in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

<u>Chapter 3:</u> COMMENTS ON THE PROPOSED NAVIGATION ACCESS CHANNEL AND SLIP

The application from Jordan Cove energy Project LP to the Division of State Lands (APP0060697) related to the proposed navigation access channel and slip has many aspects that substantiate a decision to deny the permit. Examples include, but are not limited to:

1. **The difference between the depth of the Federal Navigation Channel and the proposed navigation channel and slip.**

The construction of the proposed navigation channel approach and slip will create a 60-acre, deep-water, sump-like area adjacent to the federal navigation channel. The applicant proposes to excavate the channel approach and slip to a depth roughly 10 feet deeper than the maintenance depth of the adjoining federal navigation channel bottom. At present the navigation channel is the deepest water area in that portion of the estuary. Following construction of the proposed navigation access channel, the northern margin of the federal navigation channel bottom will be perched roughly 10 feet above the adjoining proposed access channel for a distance of 2,200 feet. This 10 foot tall federal navigation channel bottom "rim" or "lip" along the margin of the proposed navigation access channel holds potential to alter or limit the exchange of water between the deeper waters of the navigation access channel and vessel slip and the adjoining water of the federal navigation channel. If water becomes trapped in, or if the turnover rate of water at the bottom of the slip and access channel "sump" area is slow, dissolved oxygen in water lying at the bottom of the slip may become limited. Similar deep water sills and dissolved oxygen depletion conditions are found in fjord type estuaries and the types of animals that can inhabit these disturbed areas are not the same as those that would have been found in the original conditions. The presence of the "sump", as a result of the 10 foot difference between the two areas will mean that sediments from the higher area – the Federal navigation channel - will move into the newly dredged access channel and slip and continually reduce its depth, meaning that additional dredging likely more often than the proposed three year maintenance dredging will become necessary. This inconsistency in depth of the access slip and Federal Navigation channel is another example that Independent Utility is not demonstrated in this application as it is clear that the additional depth is in preparation for the proposed Port of Coos Bay plan to deepen the Federal navigation channel. PDF page 66 - 67 provides evidence for this," *The LNG loading berth is designed so that it could accommodate LNG carriers up to 217,000 m3 if larger-sized carriers were to be authorized by the USCG in the future, resulting in a reduced number of LNG carrier calls each year."*

The permit states, "*The additional depth is also essential for the JCLNG Marine Terminal due to the threat and required preparations for a local seismic event in the Cascadia Subduction Zone with the corresponding Tsunami waves*." It is not clear from the permit what required preparations to which the applicant is referring. The size of the LNG ships proposed for Coos Bay require a channel of -45 feet MLLW to ensure sufficient under keel clearance. Should a local seismic event in the Cascadia Subduction Zone occur at low tide, a loaded LNG carrier would not be able to depart the LNG facility as the sailing draft would exceed the current Federal navigation channel depth. This has considerable safety implications that are not addressed in this permit. The numerous safety issue associated with a

local seismic event in the Cascadia Subduction Zone with the corresponding Tsunami waves, particularly associated with ship moorage and transport activities, are so numerous that this project should be denied all permits.

2**. The pile dike rock apron**

No alternatives to the slip design were included to protect Pile Dike 7.3, located immediately west of the Access Channel. There are considerable implications for the placement of 6,500 cubic yards of rock into an estuarine soft sediment environment and the permit does not address these. Organisms that live on rock are different from those that live in soft sediments. Many of the rock inhabiting organisms in Coos Bay are non-native or introduced species (http://www.partnershipforcoastalwatersheds.org/invasive-and-non-native-aquatic-invertebrates-in-the-lower-coos-watershed/). By adding hard substrate in this area of the bay, you are increasing the potential for additional invasions or the biomass expansion of non-native species. Of particular concern in this part of the bay is an increase in habitat for the European green crab as it is a known predator on juvenile oysters (Jamieson et al. 1998). The Jordan Cove plant is just downstream from a number of commercial oyster plats. The applicant should consider alternative designs that would minimize impact.

3. **Noise issues associated with construction activities**

The permit notes that 1,000 concrete or steel pilings will be driven for the sheet piling for the access channel and slip using both vibratory and impact hammers. Underwater noise from pile driving activities is an issue of concern for both fish and marine mammals. Fish kills have resulted from in-water pile driving activities in Puget Sound, San Francisco Bay, and British Columbia, Canada. The most work on marine mammals, particularly harbor seals, which have haul outs in two locations in Coos Bay within the scope of the project, has been in the context of pile driving for wind turbines. As there is a contiguous acoustic connection between the waters of Coos Bay and the Dunes aquifer because of saturated soils, sounds produced by pile driving within the slip prior to removal of the berm will be propagated into the bay. At other locations detailed in this permit, pilings will be driven directly into the waters of Coos Bay and thus propagation of sounds will be even more direct.

When pulsed sounds are produced by pile driving the predicted source levels range up to 250 dB re 1 µPa (peak–peak) @ 1 m (Bailey et al. 2010). In the marine environment the greater the pile surface exposed under the water, the more acoustic energy radiates. The propagation of sound in shallow water environments, and the prediction of auditory damage in marine mammals, is a rapidly evolving field and has a number of key uncertainties associated with it. Despite this uncertainty, the permit has no mention of how pile driving activities associated with the access slip, and other pile driving locations referenced in the permit, will influence harbor seal behavior in Coos Bay.

A behavioral study (Hastie et al. 2015) during the construction of a wind farm using data from GPS/GSM tags on harbor seals in the North Sea provides some information on the potential effects of pile driving on this species. Pile driving data and acoustic propagation models, together with seal movement and dive data from the GPS/GMS tags, allowed the prediction of auditory damage in the seals. The results showed that the closest distance of each seal to pile driving varied from 4·7 to 40·5 km, and predicted maximum cumulative sound exposure levels (cSELs(Mpw)) ranged from 170·7 to 195·3 dB re 1µPa2-s for individual seals. Comparison to exposure criteria suggests that half of the seals exceeded estimated permanent auditory damage thresholds.

4. **Interference with ground water flow**

Flow characteristics of the Coos Bay Dunes aquifer were determined by Jones 1992. He determined that due in part to particle orientation and to the presence of thin, discontinuous layers of clay and silt, the vertical hydraulic conductivity of the dune aquifer is probably less than the horizontal conductivity. Water level measurements from wells near the coast and the North Slough of Coos Bay confirmed this and showed an upward discharge gradient to the ocean or bay. This means that the salinity regime of the part of the bay proposed for the Jordan Cove terminal is strongly influenced by the freshwater flow from the dunes aquifer. The use of 2,700 feet of sheet piling will no doubt have an influence on freshwater flow to the bay. This has implications for impacts on salinity regimes and organism distribution, particularly during the winter months when precipitation is high. This has not been addressed by the applicant.

Comments of Janet Hodder in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

Chapter 4: COMMENTS ON THE PROPOSED MITIGATION ACTIONS AT THE KENTUCK SLOUGH SITE

The application from Jordan Cove Energy Project LP to the Division of State Lands (APP0060697) related to the proposed mitigation actions at the Kentuck Slough site has many aspects that substantiate a decision to deny the permit.

I visited the Kentuck site on December 24, 2018 to refamiliarize myself with the area and was surprised to see that it is already a wetland with a variety of habitat types, albeit not connected directly to Kentuck Slough due to a dike along the western boundary. In reading the permit request I noted that Fig 4.1-7 also shows that this area is a designated wetland. The applicant has proposed actions for mitigation that will destroy one of the largest freshwater wetlands in the Coos estuary and it will be the largest wetland impact of this project. Current DSL policy for selecting a mitigation site states that the site should not degrade areas with high existing natural resource value. Although this area was once part of the estuary, it is no longer an estuarine wetland. It was designated as a mitigation site when the Kentuck golf course operation ceased. Since the cessation of golfing the area has reclaimed itself and converted to a freshwater wetland. As a result it has developed high natural resource values as a freshwater site which should not be compromised by this mitigation plan. On my visit in December I noted the area was being used by water fowl, herons and raptors and I saw evidence of recent beaver activity.

The proposed mitigation, particularly the deposition of the dredge spoils from the access channel and the plan to lay a 36 inch gas transport pipeline through the middle of the Kentuck wetlands will severely impact this wetland site. The objective of a DSL monitored mitigation plan is to offset unavoidable impacts to wetlands, thus the proposed actions to mitigate these impacts should not include additional wetland impacts. The premise to avoid and minimize actions before undertaking removal and fill activities in the Kentuck Slough wetland is not met by this permit and the permit should be denied.

Examples of the insufficiency of the application include, but are not limited to:

1. Failure to consider alternatives

The permit is inadequate in its consideration of an evaluation of alternative approaches designed to avoid and minimize impacts to wetlands. Although several mitigation sites were considered by the applicant, the narrative for rejection of these sites was based solely on the potential for eelgrass restoration (PDF page 1112). No alternatives for the mitigation of wetland habitat loss as a result of the NRIs, access channel, slip, plant and pipeline were considered other than the Kentuck site. The applicant should identify alternative sites that satisfy DSL's compensatory wetland mitigation requirements that have fewer impacts to the existing wetland functions and values at the Kentuck site and replace wetland functions more similar to those being impacted by the project.

Wetland loss in Coos Bay because of human activity is substantial. Estimates of wetland conversion to no wetland status range from 75 – 85% (e.g. Hoffnagle et al. 1976). The applicant has failed to consider alternative sites that would reverse this trend by creating wetlands from areas in the bay that are currently filled areas. There are many sites in Coos Bay where the mitigation could **add**

wetland acreage more similar to that being impacted. An example of a sites not considered in this proposal for mitigation for the NRIs, access channel, slip, plant and pipe line impacts are excavation of prior filled tidelands to replace the impacted tideflat and eelgrass habitat.

The permit is also inadequate in its consideration of an evaluation of alternative design approaches to avoid and minimize impacts to wetlands in the Kentuck mitigation. Within the discussion of the Kentuck site the applicant should provide alternatives to the proposed mitigation. PDF page 1123 states, "*Site construction methods, including timing and approaches to material import and dewatering, top soil salvage, mass grading, channel construction, erosion control measures, etc. will be prepared as part of final design with documentation provided to ODSL and other agencies either prior to permit issuance or as a condition of permits".* This statement implies that the removal and fill permit is not complete and DSL should request further information before considering a reply to the current request.

The restoration of impacted hydrological regimes is a DSL wetland priority and has not been considered by the applicant. Alternatives that would result in the complete connection of the Kentuck site to the estuary by removing the dike between the site and Kentuck Slough so that the hydrologic regime in this area is reestablished were not considered.

2. Why is the pipeline routed in the mitigations site?

Figures K-27 and K-28 and PDF pages 1160 and 1176 show that the proposed gas transmission pipeline passes through almost all of the length of the proposed Kentuck mitigation site. The permit application does not address why this route was chosen nor the wetland fill and removal impacts associated with the installation of the pipeline. The method of pipeline installation is not addressed. Neither does the application address why there needs to be a "*new improved Kentuck Slough levee*" as part of the compensatory wetland mitigation actions focused at this location. Is this meant to be an access/service road for the pipeline? No mitigation is proposed for the wetland impacts associated with pipeline installation or the maintenance road/new improved levee at the Kentuck Slough location.

3. **Mitigation for impacts to existing wetlands at the Kentuck Slough mitigation area are not addressed in the application**.

The Kentuck Slough area proposed as a compensatory mitigation site currently supports considerable area of fresh water wetland habitats. The mitigation plan proposes to permanently destroy most of the existing fresh water wetlands at the site. Although the freshwater wetlands at Kentuck Slough are an artifact of historic diking practices, they are presently providing important wetland functions and values. The proposed mitigation work will permanently eliminate some of the wetland functions and values presently supported at the Kentuck Slough site. The permit does not address how the loss of fresh water wetland functions and values resulting from the proposed Kentuck Slough compensatory mitigation plan will be addressed. Of particular note is the applicant's plan to permanently fill a 0.85-acre forested wetland at the eastern margin of the Kentuck site. Forested tidal wetlands in the Coos estuary have been almost entirely converted prior to National Wetland Inventory wetland mapping in 1979 (Partnership for Coastal Wetlands web site). The justification given is to protect the septic tanks of adjacent property owners (PDF pages 1102- 1105). The need to fill and permanently destroy an 0.85-acre forested wetland to protect a couple of septic tanks would not be necessary if an alternative, more ecologically preferable site or suite of sites were chosen to perform the required compensatory mitigation work.

4. **The impact of the dredging pipe and use of the dredge spoils**

The applicant has proposed to deposit 300,000 cubic yards of sand silt dredged from the proposed LNG terminal access channel and berth area on the Kentuck Slough wetland mitigation site. The permit states sediments destined for the Kentuck mitigation site will be transported using scows that will be moved to a location east of the Coos Bay Channel. Sediments on the scows will then be hydraulically pumped to the Kentuck mitigation site via a 12,500 foot long pipeline laid across the intertidal and shallow sub tidal portions of the estuary between the Coos Bay channel and the Kentuck project site. No details are provided on the impact of the dredge pipe or the booster pumps on the tideflats. The potential for scour resulting in the likelihood that shallow intertidal ponds will form upstream from the pipeline. Fish, including salmon smolts, trapped in shallow intertidal ponds are highly vulnerable to predation by birds including, but not limited to Herons, Egrets, Kingfishers and Ospreys. Fish stranded in shallow intertidal ponded areas are also vulnerable overheating and to predation by mammalian mesopredators including but not limited to raccoons and mink. The permit does not address potential release of sediment that could impact the commercial oyster production that occurs just down bay from the proposed dredge pipeline location.

The historic and existing wetland soil and sediments underlying the Kentuck site are dominated by silts and fine cohesive estuarine muds. The 300,000 cubic yards of dredged material to be transported to the Kentuck project site from the LNG terminal slip and berth are described as primarily unconsolidated sand and silty sand and they will be distributed on the Kentuck mitigation site in locations not well documented in the mitigation plan. The applicant justifies the use of this porous, unconsolidated sediment at the Kentuck Slough site by noting sand fill previously spoiled on the top of the historic cohesive salt marsh soils, and the presence of salt marsh vegetation along the Coos Bay North Spit (PDF page 1123). This is not a sufficient justification to substantiate the placement of sand fill on the Kentuck site. Sediment surface elevation manipulations required to attain the proposed wetland enhancements should be required to use soils similar to the native soils found in the vicinity of the mitigation work. Use of soils dissimilar to the types found at the Kentuck project site should not be permitted on the wetland enhancement areas of the mitigation site. The estuarine wetland plant communities in this portion of the estuary are adapted to cohesive muddy and silty sediments. Porous, unconsolidated sand and silty sand from the LNG terminal site will not support the wetland plant communities found in the Kentuck Slough portion of the estuary. The applicant should address this inconsistency.

Comments of Janet Hodder in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

Chapter 5: COMMENTS REGARDING DREDGED MATERIAL EXCAVATION, TRANSPORT AND DISPOSAL
The application from Jordan Cove energy Project LP to the Division of State Lands (APP0060697) related to dredge material excavation, transport and disposal has many aspects that substantiate a decision to deny the permit.
Examples include, but are not limited to:

1. **Impacts to estuarine organisms**.

The applicant has not addressed impacts to estuarine organisms because of the proposed permit actions. The Oregon Department of Fish and Wildlife and others have previously demonstrated that the tide flat areas in the vicinity of the proposed LNG terminal navigation access channel, eelgrass mitigation site, and Kentuck Slough dredge pipeline areas support substantial seasonal populations of juvenile fish and shellfish species and a diversity of other benthic invertebrates . They include juvenile English sole, Coho and Chinook salmon, Dungeness crab and numerous other species having direct and indirect value to commercial and recreational fisheries. Dredging, sediment disturbance, scow grounding, and sediment transfer piping hold potential to alter or impact the value of these locations to the aforementioned species of importance to fisheries. The proposed dredging work and the associated sediment transfer and compensatory wetland impact mitigation plans should not be approved in the absence of a robust accounting of the significance of the areas to be impacted to fish and invertebrates of direct and indirect value to fisheries. The aforementioned evaluation should give consideration to potential short term and long term impacts to fisheries. For example previous fish seining studies in the Coos Estuary have demonstrated that juvenile English sole and Dungeness crabs are only present in the estuary for a brief period of the year but when present, the low intertidal and shallow sub tidal areas of the estuary support huge populations of these species. Similarly, pre and post settlement Dungeness crab larvae are present in the estuary in enormous numbers. Conducting dredging work during times of abundance of these or other species holds potential to have significant but avoidable mortality for these species.

2. **Dredge spoil transfer**

Each location where sediments are transferred from one mode of transport to another poses a risk that turbid, oxygen depleted or contaminated water and sediments could be released into the waters of the Coos Estuary. A specific example would be the suggestion (PDF page 134) that if a floating temporary dredge line is technically feasible for the NRI sites, it would be flushed/drained and removed to accommodate passage of large vessels. Over the period anticipated for dredging these areas thia action would need to occur on multiple occasions, each time with the potential for spillage. Each location where aqueous sediment slurries will be pumped to shore to be dewatered poses a potential risk that sediment laden, contaminated, oxygen poor or anoxic water could be released onto the water of the estuary or the groundwater below the dredged material dewatering sites. The likely hood of degradation to the water column because of these activities is not consistent with the protection of the State's water resources.

It is unclear how material from NRI 1 and 2 will be handled on arrival at the end of the 8.3 mile dredge pipe. PDF page 134 of the permit states, "Offloading rock dredged from NRI Dredge Areas 1

and 2 with a hydraulic unloader would pose operational difficulties because hydraulic unloaders do not function well with fractured rock and limited sediment." The permit does not address this issue or offer any alternatives.

3. **The capacity of APCO sites to receive sediments from initial dredging work as well as maintenance dredging for the expected lifespan of the project**

The APCO sites are filled estuarine tideland habitat previously used as dredged material disposal areas. In addition to the sediment derived from the initial project construction the applicant has proposed to use the APCO sites as the dredged material spoil area for sediments derived from ongoing maintenance dredging operations required to maintain the operational design depths in the NRI areas, as well as the navigation channel approach and LNG terminal slip. The aerial extent of the APCO #1 and #2 dredged material disposal sites is limited as unconsolidated sediments can only be stacked so high within a defined basal "footprint". The permit has several mentions that continued use of the APCO sites for dredge disposal would occur if, "*deemed feasible*". At other locations in the Coos Estuary (e.g. Eastside) it has been necessary to discontinue use of dredged material disposal sites because additional weight loading on the estuarine soils underlying that dredged material disposal area would result in displacement of sub surface estuarine soils into the adjoining navigation channel. When the overall volume of material to be placed on these sites is considered for the lifespan of the project, the question of the absolute sediment holding capacity of these sites should be addressed in this permit and if necessary alternatives should be provided.

4**. Alternative dredge disposal site**

The applicant does not justify why the Log Spiral Bay Shoreline Stabilization site could not be an alternative site for disposal of the 300,000 cubic yards that is proposed to go the Kentuck mitigation site. Its capacity is 500,000 cubic yards (PDF page 888) and it matches more closely to the source material of the removal activities and would avoid the long pipeline across the intertidal and eelgrass that is required for the Kentuck site.

Comments of Janet Hodder in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

Chapter 6: COMMENTS REGARDING IMPLICATIONS FOR FISHING AND PUBLIC RECREATION
ORS 196.795-990 states that DSL is required to determine whether the project does not unreasonably interfere with the preservation of waters for navigation, fishing, or public recreation.
The application from Jordan Cove energy Project LP to the Division of State Lands (APP0060697) related to fishing and public recreation has many aspects that substantiate a decision to deny the permit. **Examples include, but are not limited to:**

1. **Reduction of in bay crabbing opportunities**

Coos Bay is a premium site for recreational crabbing. Ainsworth et al. 2012 estimates that in the period 2007 -20011 a minimum of 10,661 to a maximum of 15,023 crabbing trips were made in Coos Bay from April to October each year. Crabbing in Coos Bay is one of the most valuable recreational opportunities in the region and draws considerable number of people to the area. This has a considerable economic impact, especially for the community of Charleston. The permit addresses the issue of restricting access to lower bay crabbing sites because of the LNG transport (PDF page 10). It indicates that as a LNG carrier transits through the bay, the Coast Guard will impose a moving safety/security zone of 500 yards around the carrier and that will limit access to crabbing areas within the safety/security zone. The permit states, "*The sum of the periods in which LNG carriers would have a potential impact on recreational and other boating activity is about 7 hours per week or about 8 percent of all daylight hours (see Appendix C.5 to Resource Report 5*)." It is not possible to corroborate this assumption, as the permit does not appear to have a Resource Report 5. A search of the PDF using Resource Report as the search term does not bring up any results for Resource Reports 5.

The permit further states, "*the USCG will allow LNG carrier transits to occur on a 24-hour basis. This will allow night transit, which will lessen potential impacts on recreational and commercial fishermen to about 4 percent of all hours when LNG carriers can potentially transit LNG carrier transits will be prioritized during nighttime hours to reduce the impact of the moving safety/security zone on recreational and commercial fishing activities in the bay*." It is not possible to know if the 4% is a legitimate number as no information is given on how it was determined. As noted by the applicant crabbing, and to a lesser extent, fishing tends to occur at high slack tide. Coos Bay experiences a semi-diurnal tide regime meaning that there are two high tides every 24 hours and 50 minutes. There is a difference in the height of these high tides, one being higher than the other is. Due to the depth of the Federal navigation channel it is likely that LNG vessel transit will occur on the higher of the high tides. A search of the 2018 Coos Bay tide tables provides information about the number of nighttime higher high tides. It shows that the number of the nighttime higher high tides, varies considerably during the year due to the tidal regime. On some months there are very few of these higher high tides at night. For example in January, there are nine days, in February twelve, September fifteen, November four and December seven with nighttime higher high tides. Other months have more, for example April has twenty-two and June twenty-seven. Thus the effect on crabbing at slack high tide, the preferred time for this activity will vary considerably. Monthly crab harvest peaks in the fall months in Coos Bay, when catch rates and effort were greatest (Ainswoth et al. 2012). In October and November, a time when there is no option for ocean crabbing, and when crabs are in peak condition for consumption having

hardened after their summer moult, almost all LNG transits will take place during daylight high tides, and thus have considerable impact on recreational crabbing.

The permit further states,"*The maximum period for an LNG carrier to pass through the safety and security zone would be 30 minutes, meaning recreational crabbers would not have access to their pots or traps for up to 30 minutes, but the pots or traps would be "soaking" during this time."* It is obvious from this statement that the permit writer has never crabbed in Coos Bay. Consider this scenario: there are three of us crabbing in the boat, which means we can have nine rings. It takes us about 15 minutes to maneuver the boat and set all of the rings in a line from river mile 2 to mile 3. Ring one now has been in the water for at least fifteen minutes. We return to the area of ring one and move to pull the ring. Next the LNG safety/security zone is implemented and we have to move closer to the shore, if there is sufficient water depth, or we have to move to the eastern side of the navigation channel, and at least 500 yards from the LNG tanker. We cannot pull the remaining eight rings for about 30 minutes. By the time the zone has passed and we maneuver back to our ring string and begin to pull the rings they will have been in the water for at least an hour. This is an unacceptable way to undertake recreational crabbing in Coos Bay.

There are no estimates on the effects of the LNG tanker safety/security zone restriction on the public's perception of Coos Bay as a desirable site for in bay crabbing in the permit. Will visitors choose to go elsewhere to crab? The New Carissa Recreational Loss Pre-Assessment Report (Carlson 2001) estimated that at least 100 to 700 fishing and crabbing trips were lost due to the two month fishing and crabbing advisories that resulted from the New Carissa incident.

2. Restrictions on recreation activities other than crabbing

The lower Coos Bay provides opportunities for a wide variety of recreational activities including fishing, surfing, sailing, kayaking, scuba diving, stand-up paddle boarding, and kite boarding. Additionally the Charleston harbor has berths for both commercial and recreational boats, and the provides boat launching access to sports fisherman that trailer their boats from elsewhere. The fill and removal activities that will enable LNG tankers to transit Coos Bay will impact all these activities, many of which occur at times of high slack water; the time that LNG tankers will transit the bay. LNG tanker safety/security zone restrictions will make it difficult for human powered boats to use the bay during this time as they will be required to pay attention to the safety zone restrictions and move appropriately. This is bound to discourage people from undertaking these activities for fear of not being able to move quickly enough for example. Slack high tide is also the safest time for recreational and commercial fishermen who moor or launch in Charleston to cross the bar to go fish in the ocean. The 500 ft safety/security zone restriction will have a serious impact on these fishermen as the entire area between the north and south jetties of Coos Bay will be closed to other vessel movement when a LNG tanker is crossing the bar.

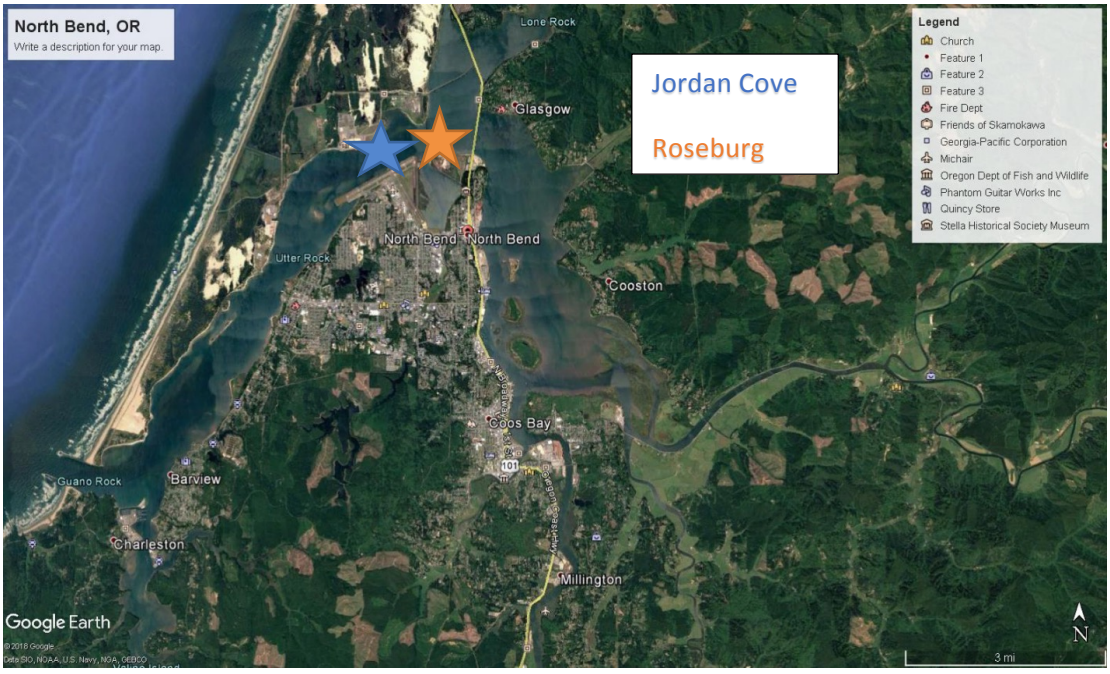
Chapter 7: COMMENTS ON THE ODSL WETLAND IMPACTS AVOIDANCE AND MINIMIZATION TECH MEMO PDF PAGE 276 -296

The application from Jordan Cove energy Project LP to the Division of State Lands (APP0060697) related to the *Wetland Impacts Avoidance and Minimization Tech Memo* has many aspects that substantiate a decision to deny the permit.
Examples include, but are not limited to:

ORS 196.825(3)(e) states that," *In determining whether to issue a permit, the DSL director shall consider whether the proposed fill or removal conforms to sound policies of conservation and would not interfere with public health and safety."* In the permit, the applicant provides a number of examples where they have considered public health and safety. For example, in the ODSL Wetland Impacts Avoidance and Minimization Tech Memo PDF page 276 -296 they are several comments that justify why they have placed the slip in the proposed location that relate to their concern for safety. One such comment is from the Society of International Gas Tanker and Terminal Operators (SIGTTO) who recommend that *"short approach channels are preferable to long inshore routes which carry more numerous hazards to navigation" (SIGTTO 1997).* The SIGTTO standards however have several other recommendations that the applicant fails to cite, as they do not support the safety of the chosen location for the Jordan Cove plant and thus should be considered by DSL as to whether the permit meets the standard for the ORS 196.825(3)(e) statute. They include:

a. LNG terminals should not be sited in areas close to population centers *(SIGTTO 1997).* .

The LNG plant, access slip and channel are the sites of the largest amount of fill and removal activity in this permit. Should the reader of this permit not be familiar with the proximity of the proposed site to population centers, the location of the Jordan Cove plant is noted by the **blue** star on the map below. Note the proximity to the towns of North Bend and Coos Bay, the largest municipal areas on the Oregon coast, with a combined population of over 25,000 people.



b. LNG terminals should be located in remote areas away from other shipping traffic *(SIGTTO 1997).* .

The physical size of Coos Bay means that there is essentially only one shipping channel that runs through the bay. There are no side channels away from population centers, or from existing shipping terminals, that are suitable for a Jordan Cove size project. The proposed LNG slip and access channel are less than half a mile from the Roseburg Forest Products dock, noted by the **orange** star on the map above. The statements in the permit on PDF page 278," *Construction of the marine slip from upland area enhances the safety and security of the facility by* p*lacing the slip in a sheltered location* ***remote from other port users****. This removes LNG carriers from potential collision scenarios with other passing vessels using the Port*,", is false.

c. LNG terminals should not be sited on an outside bend of a shipping channel . *(SIGTTO 1997).*

The proposed location for the Jordan Cove terminal is just such an outside bend where other vessels have to make a well-executed turn before positioning themselves to thread through the Coos railroad and McCollough bridges. The proposed location of the Jordan Cove plant increases the potential for navigation hazard accident.

d. Simultaneous LNG operations and ship movements in adjacent berths should be avoided *(SIGTTO 1997)*.

This SIGTTO recommendation would be also be violated as the Port of Coos Bay plans to construct a cargo ship berth on the western shore of Coos Bay just downstream from the proposed Jordan Cove terminal, and as mentioned above the Roseburg Forest Products Chip Terminal berth is also close.

Additionally the applicant fails to include the most important information about the potential adverse impacts of the proposed fill and removal activity. Information in the previous Environmental Impact Statement for the Jordan Cove project noted that should an accident that results in a release of LNG that ignites occur at the plant, or from a ship traversing the Federal navigation channel, living things including humans within 0.3 miles of the accident, an area known as the blast zone, would not survive. Those within one mile will receive second-degree skin burns after 30 seconds of exposure, and those within 2.2 miles, including all of the occupants of North Bend schools, are still at risk of burns if they do not seek shelter.

The permit is inadequate in that it does not provide DSL with a complete rendition of the SIGTTO standards for Site Selection and Design for LNG Ports that refer to the siting of the Jordan Cove LNG terminal which requires the fill and removal activity detailed in this permit. Neither does it include potential adverse impacts of the proposed LNG activities, particularly related to plant siting and ship movements for which the fill and removal permit is required. Thus the DSL Director does not have sufficient information to make a determination under ORS 196.825(3)(e) as to whether the proposed fill or removal would not interfere with public health and safety.

Comments of Janet Hodder in response to a solicitation for comments on the Jordan Cove Energy Project LP Department of State Lands removal and fill permit APP0060697.

Chapter 8: COMMENTS REGARDING THE INADEQUACY OF THE PERMIT DUE TO ITS ENVIRONMENTAL JUSTICE IMPACT, CONTENT AND PRESENTATION

The application from Jordan Cove energy Project LP to the Division of State Lands (APP0060697) related to its environmental justice, content and presentation of the application has many aspects that substantiate a decision to deny the permit.

This project disproportionately impacts low income, Native American and minority populations. Senate Bill 420 encourages state agencies to give all people knowledge and access to improve decisions that affect environment and the health of all Oregonians. Oregon's Environmental Justice Task Force recommendations in Environmental Justice: Best Practices for Oregon's Natural Resource Agencies 2016 states that, "*Agencies must incorporate a disparate impact analysis – based on the best science and current demographic data – into all programmatic and policy decision-making".* DSL should undertake and include such an analysis in this permitting process. Jordan Cove's permit application is voluminous, disjointed, repetitive, and highly technical. Its presentation severely limits or precludes non-technical and language challenged people from conducting a reasonable evaluation of the potential impacts of the project. The application is not accessible to an audience having average English proficiency (reading at a grade 8 level) and certainly not to those for whom English is a second language.

Several LNG terminals have been proposed in other Oregon locations in recent years but were rejected. One could ask whether this rejection was because these communities were less disadvantaged than Coos Bay. It is notable that this one remaining proposal holds potential to differentially impact low income, minority, Native American and linguistically challenged populations. It is unlikely that a proposal of this nature would be considered for more affluent communities. This argues for including a consideration of environmental justice in the consideration of the permit application.

This application should have been rejected by DSL and returned to the applicant for refinements to improve the ability and ease of agencies and the public to comment on the application re OAR 141-085-0550. The inadequacies, disjointedness and repetitions made writing these comments much more challenging than needed and no doubt prevented other commenters from being able to access the information necessary to write thoughtful responses to this application. Examples of its inadequacies include, but are not limited to:

1. There are no page numbers referenced in the table of contents. Without page numbers this 3,638 page PDF has been almost impossible to navigate and it has been difficult to adequately reference sentences/paragraphs from the application in my comments. It has also meant that one has to use the search tool in the PDF to locate referenced material and because of the size of the permit this can take an inordinate amount of time. 2. There appears to be no common index to all of the acronyms in this document making it difficult in many instances to reference to what a sentence is referring.

2. Three project descriptions are included in the permit request with only links to FERC resource reports:

a. PDF Pg 119 A.2: General Project Description (FERC Resource Report 1) (J1-000-RGL-RPT-JCL-00001-00) Full Resource Report is available on the FERC Website below: https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170921-5142. This link takes you to a long list of PDFs on the FFERC site most of which are not pertinent to this permit

b. PDF Pg 120 A.3: Water Use and Quality (FERC Resource Report 2) (J1-000-RGL-RPT-JCL-00002-00) Full Resource Report is available on the FERC Website below: https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170921-5142

c. PDF Pg 121 A.4: Fish, Wildlife, and Vegetation (FERC Resource Report 3) (J1-000-RGL-RPT-JCL-00030-00) Full Resource Report is available on the FERC Website below: https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20170921-5142

This link takes you to the FERC site where there are 28 poorly labeled PDF files none of which corresponds to the J1 – number given in the DSL permit. I attempted to access this site on numerous occasions from December 23 - 26 and when attempting to open the FERC Generated PDF File I receive a notice that states, "JCEP PCGP Form of Notice.DOCX cannot be converted to PDF". None of permit PDF pages 119 - 121 within the DSL permit has any indication of why they are included in the permit request and whether they contain information that a reviewer needs to assess the adequacy of the project information. Subsequent pages in the PDF however reference these reports (e.g. Attachment E – PDF Pg 217 – 275) but it should not be the responsibility of the commenter to have to access this information. If the information in these reports is pertinent to the removal/fill permit, it should be included in the permit request.

3. There is considerable duplication in the permit. For example Attachment I Appendix I is an entire duplicate.

4. There are many inconsistencies and omissions in the permit. Thus the permit is incomplete.

A few examples:

- Page 7 of the PDF section on Vegetated Shallows references that, "Vegetated shallows within the JCEP Project Area where a concurrence has not been issued are described in the wetland delineation reports that are included as Attachments C.9 to C.13. Attachment C.9 which one finally locates on PDF page 366 appears to be a receipt for payment and has no information about the wetland delineation referenced on page 7 of the PDF. - . C.9: Wetland Delineation WD # 2018-0213 Concurrence Submittal Receipt April 18, 2018. The same is true for Attachment c.10 -C.10: Wetland Delineation WD # 2018-0217 Concurrence Submittal Receipt April 18, 2018.
- Resource Report 5 is referenced on PDF page 10 but does not appear to be part of the permit. A search of the PDF using Research Report as the search term does not brings up Research Reports 5.
- The Revision Modification Log on PDF page 27 has a column for page numbers but it is empty. Thus it is impossible to know where to look for the details of these revisions.
- PDF page 293 states, " *At no time will any fuels or oils be allowed to enter any water body*." However, immediately following this the permit states, *"Floating spill containment booms and absorbent booms will be maintained on-site during all phases of construction to facilitate the cleanup in the case of accidental spills. Containment booms will be installed in instances where*

there is a potential for release of petroleum or other toxic substances. Absorbent booms will be deployed within the containment boom if sheen is observed."

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