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IND53

PUBLIC COMMENT

Provided by Barbara Gimlin, P.O. Box 1527, North Bend, OR 97459

Jordan Cove Energy Project

Intertidal Flats Mitigation Proposed for Kentuck Slough

FERC Docket No. CP13-483-000

INTRODUCTION

This public comment document presents concerns and credibility issues regarding the Compensatory Wetland Mitigation (CWM) plans submitted for the Jordan Cove Energy Project (JCEP) in North Bend, Oregon. Of the CWM versions presented for the overall project, this document focuses on only one portion of each— the estuarine mitigation proposed for the Intertidal Flats Mitigation Site at Kentuck Slough.

It is my assertion that inadequate environmental and hydrologic studies have been conducted to warrant the Kentuck Slough mitigation to proceed as planned. Much more input is needed from hydrologists, engineers, natural resources scientists, and planners to fully understand and design a plan for the site that will address current and future site-specific conditions on the ground, including upstream of the site.

What's at risk? Many things. Before the project starts moving dirt around (or mud and sand), it needs to conduct a full analysis on every aspect of the mitigation proposed at Kentuck and demonstrate it understands the implications to the environment it will be affecting. This issue ranges far beyond the CWM comments presented in this document for the Kentuck Slough. There is a pattern being set for the JCEP, and another major issue is the ongoing neglect by the project to properly address soil contamination issues at the facility site on the North Spit of Coos Bay. As with the soil contamination issues, additional studies are needed to ensure the designs and plans in place prior to ground disturbing activities fully address the potential adverse effects of the project. IND53-1

There are various CWM plans floating around in the regulatory system for the mitigation proposed for the overall project, and all include various versions of the mitigation proposed for Kentuck. The lack of consistency is an indicator that the project warrants close and interactive scrutiny by the local, state and federal agencies that are authorized to review and approve the project. In addition to the Federal Energy Regulatory Commission (FERC), each authorizing agency needs to ask tough questions, to coordinate with other respective agencies to ensure they are approving the same actions, and to expect complete investigation and analysis before approving any action.

BACKGROUND

The comments included in this document are based on my personal observations living one mile from Kentuck Slough since 2008, along with firsthand knowledge of the JCEP while working on the project as environmental consultant while employed by SHN Consulting Engineers & Geologists, Inc. (SHN) in Coos Bay from March 2013 to April 2014.

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IND53 Barbara Gimlin, North Bend, OR

IND53-1 The wetland mitigation plan must be approved by the COE. The COE is working with the applicant on their mitigation plans. The suitability of the Kentuck Slough as a mitigation site is part of the COE's analysis. Any approval by the Commission would be conditioned upon obtaining a COE permit, as well as all state permits.

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The existing bridge over the Kentuck Slough channel is located on East Bay Road and includes four large tidegates that regulate the flow between the Kentuck Slough channel and the Coos Bay estuary. The structure was rebuilt in 2007 and Coos County received $2,321,000 through Oregon Transportation Investment Act funds in 2003 to construct the project. Now the JCEP wants to remove the bridge and tidegates and open up the estuary along East Bay Road by building a bridge and opening up both the former Kentuck golf course and the historical inlet that at one time extended five miles inland prior to being filled over 60 years ago.

Figure 1. Existing tidegates (4) at the East Bay Road bridge over the Kentuck Slough channel. The tidegates and bridge were rebuilt in 2007 at the cost of over $2 million. (1-8-15).

In addition to what was filed with FERC in the Draft Environmental Impact Statement (EIS), the most recent JCEP Joint Permit Application (JPA) on record for the Oregon Department of State Lands (DSL) was submitted in March 2014. The most recent version of the JPA submitted to the U.S. Army Corps of Engineers (Corps) was in October 2014. There are at least four CWM plans included and referred to in project documentation for the same CWM planned for Kentuck. They were all prepared by David Evans and Associates, Inc. (DEA) and look very similar. Of note, two different (but similar) CWM plans are included in the full JPA document submitted to the Corps for the current JCEP permit application, and both are dated October 2014. It is unclear which CWM plan is the final product, even from the narrative, but it appears the CWM plan attached first in the document is the one that is moving forward.

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In addition, two other CWM plans were submitted to the DSL and are associated with their project documentation (December 2011, March 2014).

My concerns about the lack of proper study and analysis for the Kentuck mitigation portion of the project repeatedly fell on deaf ears while I worked on the project under SHN. I sat in on weekly conference calls with DEA, the consulting company hired by the project to (among many things) write the CWP plan. It was like they didn't want to hear anything that would interfere with what they had in place. This was despite the fact that the plan(s) in place did not take into account the issues brought forth in this public comment. I went as far as to send site photos during flooding stages and documentation of ongoing fill being conducted upstream that could affect the site hydrology. To my knowledge, it was ignored. The issues certainly were not included in the resultant CWM plans proposed by DEA, or in any other part of the JPAs prepared by DEA that were submitted to the Corps and DSL.

The CWM plans used in the current JPA for the Corps frequently refers to the DSL Removal-Fill (RF) Permit No. 37712-RF (issued by the DSL in December 2011 and expiring December 21, 2016) as providing approval for the mitigation proposed for estuarine resources at Kentuck for the current project. DSL Permit 37712-RF is based on a JPA submitted to the DSL in 2011 by the International Port of Coos Bay (Port) for the Port's previously proposed Oregon Gateway Marine Terminal project.

The current JCEP DSL permit recorded online at the DSL's website (as of January 8, 2015), Permit 54908-RF, is dated March 20, 2014, and includes a CWM plan dated March 2014. The March 2014 CWM plan has significant changes from the CWM plan approved by the DSL in December 2011, and is different from the two October 2014 CWM plans included in the Corps JPA. There is no documentation provided in any of the JCEP documents to demonstrate the previous CWM plan approved for the Port DSL permit issued in 2011 has been subsequently approved (as revised) for the current DSL permit for the JCEP. The 2011 approval was based on a different applicant and a different overall project. If the Corps and/or DSL have approved the subsequent changes, that process of approval should be documented as part of the administrative record included in the most current JPAs.

There is a lack of consistency in the information presented in the various CWM plans for review in the FERC Draft EIS and the Corps/DSL JPAs. It can be difficult at times to tell what is actually planned for the site. Even the most current CWM plan presented has not been updated and lists the construction of the project and associated mitigation as anticipated to begin in the 3rd and 4th quarters of 2014.

Despite the above inconsistencies, the comments and questions presented in this document are valid for all CWM plans associated with the JCEP. IND53-2

EXISTING EAST BAY ROAD BRIDGE AND ASSOCIATED TIDEGATES

The narratives for the various CWM plans for Kentuck do not clearly present information on the existing tidegate structure installed under the current East Bay Road bridge that connects Kentuck Slough to Coos Bay. It is a substantial structure with four large tidegates and was rebuilt in 2007.

Prior to the recent replacement, the existing bridge did not meet current design standards and needed to be replaced. Attached to the downstream side of the existing bridge was a set of three 7.5-ft wide by 10-ft high top-hinged tide gates. One of the tide gates was wedged in the gate slot and completely inoperable. The other two gates functioned, but leaked significantly during flood tides. Additionally, the gates were frequently overtopped during high tides.

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IND53-2 The commenter is correct that the applicants have filed multiple CWM, each of which have some differences from previous versions. These changes have resulted in part as a result of requirements and requests made by the federal and state agencies with authority over wetland mitigation (i.e., the COE, DSL, and ODEQ). The COE, DSL, and ODEQ are currently reviewing the CWM and may require additional measures or changes to the plan. As a result, the CWM may change again. The final compensatory wetland mitigation will be determined during by the COE, DSL, and ODEQ during their 404 and 401 permit process.

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The leaky gates allowed for saltwater intrusion into the slough and also resulted in an increase in the amount of saltwater that intruded into adjacent land via groundwater flow. This negatively affected the quality of the soil during the summer months when there is little freshwater inflow to the slough to help dilute the salt concentrations from the bay water. The local landowners indicated at the time that the current volume of saltwater influx to the slough was tolerable, but any increase would not be acceptable.

WEST Consultants, Inc., was hired to conduct an HEC-RAS unsteady flow hydraulic model of the tidegate designs for the new bridge to accommodate and improve upon conditions that encourage the estuarine habitat, while at the same time would not increase the volume of saltwater influx to the slough over the existing conditions. Kentuck Slough is considered an important salmonid habitat. Therefore, the hydraulic parameters for the replacement tidegates installed in 2007 were developed in close consultation with the National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and the Oregon Department of Fish and Wildlife.

For the complicated mitigation proposed at Kentuck for the JCEP, more complex hydraulic analysis to identify the impacts and support the determination of appropriate mitigation is needed. Removal of the existing bridge and tidegates needs full evaluation of existing hydrology, hydraulics, sediment transport, fluvial geomorphology and water quality, with supporting documentation. IND53-3

INTERTIDAL FLATS MITIGATION PROPOSED —KENTUCK SLOUGH SITE

The Kentuck Slough site is referred to as "primarily unvegtated mudflat and tide channels, and some salt marsh." The following appears to be the scope of work for the JCEP CWM plan related to the site, from the IPA submitted to the Corps:

Jordan Cove Energy Project Compensatory Wetland Mitigation Plan – Part B

1.2.2 Intertidal Flats Mitigation Site (Kentuck Slough Site)

Mitigation Goal 2: Reestablish tidal flow to approximately 45.01 acres of historical intertidal habitats adjacent to Kentuck Slough. (Actual area as currently designed will be 46.59 acres, which results in additional contingency credits. Mitigation Goal 2 and associated Objectives are based on the minimum acreage needed to meet standard DSL mitigation ratios). To achieve this goal, the following objectives will be carried out:

- **Objective 2.1:** Construct a new bridge in East Bay Drive to allow tidal exchange between Kentuck Inlet and the "back nine" of Kentuck Golf Course.
- **Objective 2.2:** Construct a new cross dike between the front and back nine of Kentuck Golf Course, with a standard tidegate to drain the front nine to the back nine, and construct a fish friendly tidegate array through the Kentuck Slough dike, allowing the majority of flow from Kentuck Slough to enter the back nine.
- **Objective 2.3:** Remove the culvert and tidegate located adjacent to the east side of East Bay Road near the southeast corner of the golf course site.
- **Objective 2.4:** Restore tidal connection to the irrigation pond creek system through installation of a fish passable culvert that meets ODFW fish passage criteria.
- **Objective 2.5:** Construct and/or enhance approximately 6,000 linear feet of tide channels.

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IND53-3 The site is currently a tidal area so while modifications would be needed these modifications should not be difficult to maintain as a region as an intertidal and shallow subtidal region. There has been an initial report addressing hydrology (West Consultants 2010. Jordan Cove Facility Mitigation Hydraulic Evaluation of Kentuck Golf Course Restoration with New Bridge and Tide Gates., part of Proposed Mitigation Concept for Intertidal Mud Flats by David Evans and Associates Nov 4, 2010). There has also been a sediment quality analysis of the region. The details can be further defined in the local permitting process.

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- **Objective 2.6:** Establish an approximately 1.73 acre wetland bench along Kentuck Slough by relocating the existing levee southward.
- **Objective 2.7:** Establish an emergent to scrub-shrub, brackish to freshwater transitional plant community along the Kentuck Slough bench described in Objective 2.6.
- **Objective 2.8:** Establish a minimum of 0.18 acres of salt marsh habitat within the internal portion of the Kentuck Slough site, with the remainder of the internal portion (43.10 acres) being mudflat and/or tide channel. A greater amount of salt marsh, with subsequent reduction in mudflat is acceptable.

Figure 2. Study area used by DEA to development mitigation at the Kentuck Slough site.

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Changes to the JCEP CWM Plan in the October 2014 Corps Permit Application

One of the CWM plans for Kentuck Slough submitted in the October 2014 JPA to the Corps states mitigation for the site has been refined based on agency comments since the issuance of DSL Permit 37712-RF in 2011. For this plan, the following are fairly significant changes to the mitigation proposed from what was previously approved in DSL Permit 37712-RF in 2011:

- The October 2014 CWM plan includes the establishment of 12.49 additional acres of tidally influenced habitats at the site and adjacent areas that were not included in 2011.
- Mitigation improvements such as levee relocation, cross-dike placement, roadway upgrades, etc., wil now result in 3.11 acres of permanent incidental wetland impacts, of which 0.59 acres was previously included.
- An additional 0.59 acres of incidental emergent wetlands impacts wil result from improvements needed at the site, in addition to the 10.47 acres of mudflat impacts presented in 2011.
- Current designs include raising elevations within the site to better support establishment of salt marsh, provided there is suitable material to import to raise grades.
- The current design proposes rebuilding the existing Kentuck Slough levee roughly adjacent to the south side of the existing levee and restoring the area under the old levee back to wetland, creating a wetland bench along the slough channel.

Inconsistencies in Elevation Data

The October 2014 CWM plan states the following:

- *The primary salt marsh surface at the reference site (immediately downstream of East Bay Road) occurs between approximately elevations 5.5 and 8.5 feet NAVD88 (North American Vertical Datum of 1988). However, typical elevations within the former golf course range between 2.0 and 4.0 feet NAVD88. These lower elevations in the former golf course preclude vegetation establishment, and therefore mudflat would be the predominant habitat type without intervention. ... Current design includes raising elevations within the site to better support establishment of salt marsh; however this is reliant on having suitable material to import to raise grades.*

However, in a November 4, 2010, letter to Chuck Wheeler at the National Marine Fisheries Service, DEA states the following:

- *The proposed mitigation would reestablish tidal flow to approximately 33 acres of historic intertidal mudflat/low marsh habitat adjacent to Kentuck Slough. Survey information confirms that elevations within the golf course are appropriate for establishing mudflat habitat. The primary salt marsh surface at the reference site (immediately downstream of East Bay Drive) occurs between elevations 7.0 and 9.0 feet mean low low water (MLLW). However, typical elevations within the golf course range between 4.0 and 6.0 feet MLLW. These lower elevations in the golf course preclude vegetation establishment and therefore mudflat will be the predominant habitat type (DEA 2010).*

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Why would the elevation at MLLW immediately downstream of East Bay Road (7.0-9.0 feet) be higher than the NAVD88 elevation data at the same site presented by DEA in 2014 (5.5-8.5 feet)? In turn, the MLLW listed for the golf course in 2010 (4.0-6.0 feet) is higher than the NAVD88 elevation data in 2014 (2.0-4.0 feet). No supporting documents from site visits, field studies, and surveys conducted are provided for any of the assertions. IND53-4

CONCERNS ABOUT THE PROPOSED MITIGATION AT KENTUCK SLOUGH

Potential Site Contaminants

The former golf course at Kentuck operated over four decades before closing in 2009. The CWM plans do not demonstrate that any studies on contaminants have been conducted at the site, particularly for contaminants that may be harmful to marine life. While herbicides, pesticides and herbicides have improved in recent years, who knows what was previously used at the site and the residual contamination risk the previous use as a golf course may pose.

Attachment A for the October 2014 Corps JPA lists the following regarding potential hazardous materials that may be encountered by the overall project:

> 13. **Hazardous, Toxic, and Waste Material Handling:** Petroleum products, chemicals, fresh cement, sandblasted material and chipped paint, wood treated with leachable preservatives or other deleterious waste materials shall not be allowed to enter waters of this state. Machinery refueling is to occur at least 150 feet from waters of this state and confined in a designated area to prevent spillage into waters of this state. Barges shall have containment system to effectively prevent petroleum products or other deleterious material from entering waters of this state. Project-related spills into waters of this state or onto land with a potential to enter waters of this state shall be reported to the Oregon Emergency Response System (OERS) at 1-800-452-0311.

This short section does not begin to address the issue of potential contaminants at the Kentuck mitigation site, which is part of the overall JCEP. In addition to concerns over the prior use as a golf course, other concerns were brought up during a Coos County Commissioners meeting on September 22, 2009. The commissioners approved a zone change for the Kentuck Golf Course to exclusive farm use to allow the Port to use the land. Commissioner Bob Main voted no, in light of concerns he said he had about pollutants washing into Coos Bay. Commissioners Nikki Whitty and Kevin Stufflebean voted yes.

A story carried in *The* World newspaper on September 23, 2009, said developers had devised a plan that would flood the back nine holes of the course to satisfy government wetland replacement requirements for the JCEP, and that they would remove part of the dike west of the course and build a bridge for East Bay Road. It also included the following:

> *Main said he was concerned that a former methamphetamine lab in a house in the area had contaminated the course and would leach into the bay if the mitigation plans proceeded. Oregon's Department of Health Services has a house on Golf Course Lane listed as unfit for use.*

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IND53-4 The elevations are in different vertical datums; therefore, heights are not the same.

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Main's fellow commissioners and the Port's lawyer tried to reassure Main, noting that state and federal agencies would check into those issues through a biological assessment and U.S. Army Corps of Engineers review. Main remained opposed.

"I'm not comfortable that they will check that potential problem," he said.

Mark Whitlow, a Portland attorney representing the Port, said it was premature to discuss the runoff issue, because the primary purpose of the meeting was the zone change.

"Until the Port's project goes forward, there is no project proposal for the site," he said.

There is no mention in any of the CMP plans that the potential contamination from the former meth house has been investigated. This is not for lack of knowledge. I brought up the article during the summer of 2013 twice during weekly conference calls with DEA and also provided DEA staff with a copy of the article. And it's clear the JCEP's attorney, Mark Whitlow, was aware of the potential issue. At a minimum, it should be brought up and addressed in all project documents. IND53-5

Site Hydrology

There is a serious lack of documentation of existing hydrological studies that have been conducted for the proposed Kentuck Slough mitigation, including upstream of the site. The area floods frequently and even when the golf course was open, the locals referred to it as the "yacht club" during the rainy season. Farms and homes to the north of the Kentuck Slough channel, along with to the west (upstream) for approximately four miles, are frequently flooded during heavy rains.

Figure 3. Former Kentuck Golf Course taken from East Bay Road following heavy rain. The channel is on the other side of the levy shown on the left. (12-24-14)

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IND53-5 On February 3, 2015 Jordan Cove filed with FERC additional information related to potential soil contamination from previous activities at the proposed LNG terminal site (accession No. 20150203-5140). The FEIS has been updated where appropriate to incorporate this information.

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In addition, flood impacts (stage, velocity, duration) need to be addressed regarding current alterations that have been taking place upstream. Main Rock between Mile Posts 4 and 5 has been progressively filling over 40 acres of wetlands over the years (permitted by the state), which adds to the downstream flooding. There is limited space for the water to go and opening up the estuary will likely increase the flooding potential if this factor is not carefully studied and analyzed in the development of a project design. The annual rise of the world's oceans, thought to be approximately 1 cm a year, also needs to be calculated in.

Figure 4. Ongoing fill activities upstream by Main Rock at Mile 4.6 along Kentuck Lane. (12-24-13)

When the former golf course site is newly re-opened to Coos Bay to increase the size of the estuary, complex and dynamic flow patterns are likely to occur. It is essential that the plan design takes into account the increased flows, tidal channels, and how flooding of adjacent properties to the north and west will be prevented. A hydrodynamic model that clearly researches and addresses the capacity and flow dynamics likely to occur needs to be developed and submitted for approval prior to issuance of Corps and DSL permits associated with the project. This should include monitoring that extends upstream of the proposed mitigation site and be based, at a minimum, on tides, storm surge, stream velocity, flow capacity, and projected long-term sea level rise. The current monitoring proposed in the CWM plans is far from adequate (once a year) and needs to be revised to ensure all seasons and scenarios are monitored and addressed.

The October 2014 CMP plan states that groundwater at the site was typically observed in soil pits from 10 inches depth to within an inch or two of the surface. It further states that saturation typically occurred 2 inches above this depth and that these conditions are" typical of wintertime conditions." The plan, however, does not present any data, dates, or locations to substantiate this claim. From

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driving past the site on an almost daily basis for the past 6-1/2 years, I can tell you the ground saturation is frequent and much deeper during rainy periods. Heavy rains can occur in the fall, winter, and spring, and further monitoring and analysis is needed to accurately depict the current hydrology.

Figure 5. Kentuck Slough channel west of East Bay Road bridge and tidegates. (12-24-14)

Section 4.3.2.1 of the October 2014 CWM plan for existing hydrology states the following:

> *Shallow ponding was observed in many locations throughout the former golf course, but was most pronounced in the western half. Ground topography throughout the former golf course varies slightly, with roughly 2 to 3 feet of difference in relief from location to location. Drift lines were observed along the edges of the higher areas, which suggest that ponding was substantially greater before the site visit occurred. This ponding is likely the result of direct precipitation, which had not occurred for more than a week before the site visit.*

My first question would be, "What site visit?" And just one site visit was conducted to determine the existing hydrology? It's far from adequate. Where's the documentation. When was it conducted? The one site visit vaguely referred to in the plan is listed as having occurred in January 2009. Is that the one they're referring to? The short Existing Hydrology section refers to shallow inundation occurring during "high tide," but what high tide? Tides vary many feet with the lunar cycle. Where is the data, are there photos, and how can they possibly claim the four paragraphs in Existing Hydrology represent the existing hydrology. The science is missing.

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Figure 6. Farm north of Kentuck Lane at Mile Post 1. (12-24-14)

The above photo of a farm north of Kentuck Lane shows typical flooding during heavy rains. The site is west (upstream) of the new tidegate and dike proposed in the mitigation, despite the substantial reinforcement at the existing bridge and tidegates one mile downstream. The flooding extends to the south and west of Kentuck Lane, as shown in the next photo.

Figure 7. Farm south of Kentuck Lane at Milepost 1.5. Photo taken from Kentuck Lane at Milepost 1 and is looking west beyond the proposed tidegate and berm for the JCEP Kentuck mitigation. (12-24-14)

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The October 2014 CWM plan refers to potential site constraints identified in the CWM plan authorized under DSL Permit 37712-RF, including the following:

> *Opening the site to tidal influence creates the risk of increased flooding potential and saltwater intrusion to adjacent and upstream landowners. New cross dike construction and repair and/or enhancement of the existing dike are therefore required to ameliorate this risk.*

That all sounds well and good, but where are the studies and data to address how the new tidegate and dike will address the substantial flooding that occurs well upstream of the site they propose to block off? IND53-6

Nautical charts from 1865 to 1937 show Kentuck Slough extending approximately 5 miles inland from its current site. By 1947 approximately ½ of the slough was filled in to the east, and by 1953 the slough was primarily filled in west of its current location along East Bay Road. Today the Kentuck Slough channel that remains is regulated by four large tidegates under East Bay Road, with a levy separating the channel from the former Kentuck Golf Course site (closed in September 2009). The proposed JCEP Kentuck mitigation site extends from river mile 0.0 to 0.9 of the Kentuck Slough channel. In addition, there is a 5' diameter culvert and tidegate near the southeast corner of the former golf course along East Bay Road (approximately 1/10 mile from the four existing tidegates and associated bridge) that will be revised.

Figure 8. Nautical charts at the Coos Bay Boat Building Center show Kentuck Inlet extending approximately 5 miles inland in 1937.

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IND53-6 See response to IND53-7.

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Figure 9. Nautical charts at the Coos Bay Boat Building Center show Kentuck Inlet as filled to the west, reducing its size approximately in half, by 1947.

Figure 10. By 1953, nautical charts at the Coos Bay Boat Building Center show Kentuck Inlet filled to its approximate location today, with a channel now in its place.

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The CWM plan (page 10) states the Kentuck mitigation site is a "100-acre historic flood terrace" that historically "would have been classified as an estuarine wetland." **Historically it was an inlet.**

AND WHAT ABOUT THE MOSQUITOES?

In the summer of 2012, an expansion project undertaken by the USFWS was completed for the Bandon Marsh south of Coos Bay. The purpose of the project was to allow tidal flats to resume their natural state after being diked and used for grazing land by farmers for decades. The expansion resulted in a huge mosquito infestation the following summer that was referred to as a biological disaster. It wreaked havoc on all surrounding property owners and made ventures outside a chore to escape the mosquitoes. The increase of mosquitoes was determined to be caused by removing tidegates, digging ditches, and increasing hydrology for the expansion. The original price tag for the 1000-acre restoration project was $4 million dollars. It inflated to $10 million plus and could have grown upwards of $100 million dollars if it were not for the temporary suspension of the marsh expansion in September 2013, until the situation could be contained.

While the Kentuck Slough mitigation proposed is smaller in size, it is very similar in terms of expansion of tidal flats. The potential for a similar mosquito infestation at Kentuck needs to be thoroughly evaluated and brought forward in discussions.

CONCLUSION

The estuarine mitigation proposed for Kentuck Slough by the JCEP has not undergone the serious environmental and hydrologic evaluation needed to ensure the mitigation will not result in contamination of the Coos Bay estuary, flooding of adjacent and upstream property owners, and a potential mosquito infestation that would affect area residents. The inconsistencies in the plans brought forward, together with the lack of appropriate studies and documentation, is alarming. As it stands, there is a significant potential for substantial adverse effects from the mitigation proposed at Kentuck. IND53-7

During my time working on the JCEP under SHN, I encountered serious transparency and integrity issues with the management of both SHN and DEA. From inaccurate site plans submitted with permits to failing to address issues as they arose, the standard operating procedures of "let's wait and see if it comes out in public comment" is not the proper response to issues. Hence my public comment.

Coos Bay is my playground and I enjoy boating, fishing, clamming, and crabbing in the bay. If toxins are released into the bay from the existing plans for the project, be it from the extensive soil contamination at the main facility site or former golf course toxins released by opening up, it will likely have a devastating effect to marine life and the humans who consume shellfish if these issues presented are not fully addressed. In addition, my neighbors live up Kentuck Lane and I already see the increased annual flooding problems they have that will likely increase even more by the current plans for Kentuck. IND53-8

It is imperative that FERC take the concerns presented in this document seriously and that the agency ensures the proper process is followed to ensure the marine and human environment will be protected to the maximum extent possible.

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IND53-7 The site is currently a tidal area so while modifications would be needed these modifications should not be difficult to maintain as an intertidal and shallow subtidal region. There has been an initial report addressing hydrology (i.e., West Consultants 2010; Jordan Cove Facility Mitigation Hydraulic Evaluation of Kentuck Golf Course Restoration with New Bridge and Tide Gates., part of Proposed Mitigation Concept for Intertidal Mud Flats, by David Evans and Associates Nov 4, 2010). Additionally the applicant has conducted sampling of sediments in Kentuck Slough and values are below screening levels of concern (see Sediment Characterization Report Wetland Mitigation site Coos Bay Oregon by GRI Feb 8, 2011, in attachment R53 of the Appendix Q of the DEQ responses). There has also been a sediment quality analysis of the region. The details for development of this site will be further defined in the local permitting process.

IND53-8 Section 4.3 of the EIS includes description of the studies done at the proposed site to characterize potentially contaminated upland soils and discussion of Jordan Cove's proposed Unanticipated Hazardous Waste Recovery Plan that would be implemented during construction. Work would be conducted to avoid or minimize release of toxins into the Bay. Compensatory wetland mitigation work at Kentuck would be permitted in accordance with the Clean Water Act and the State Removal-Fill laws and Jordan Cove would have to comply with whatever measures are imposed as a result of permit review through those laws.

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Jessica Eckhoff, Phoenix, OR.
I would like to add my comment on the proposed LGN pipeline connector being planned to deliver, process and export natural gas through and to the coast of Oregon. I do not believe there has been enough consideration of the impact that this pipeline will cause, not only for the environment which it will disrupt but also the multitude of hazards that all parts of this process will expose local and regional communities to. It should be noted that the public hearing for comments in the LGN pipeline come I be same night that the local natural gas company AViSTA is holding a meeting to discuss the coming rate hikes for local natural gas customers. These natural gas companies do not have the communities who's environments they destroy in mind. Folk within these communities find it harder and harder to keep up with the monetary requirements these companies charge just to keep their own family's warm, while he companies greedily mine our collective natural resources, destroying others in the process and export those same resources in exchange for paper money, which is neither sustenance nor sustainable and which they hoard to fill their lives and our landfills with useless garbage. We really need to have re time to understand who's interests these companies are interested in serving. It is definitely not those of the natural environment or the communities of good, honest people who call those beautiful places home and wish not to see them destroyed or be put in harms way by the chemical fallout of the production and processing of natural gas. Please allow our communities more time to speak out on these issues and please make sure we take the time to reassess this issues. LGN pipeline and the Pacific Connecter has no interest in helping the American People and has no place on our soil. Thank you for you time and consideration. God Bless.

IND54-1

IND54-2

IND54 Jessica Eckhoff, Phoenix, OR

IND54-1 The environmental impacts and hazards associated with the Project were addressed in the DEIS.

IND54-2 The 90-day period to comment on the DEIS was not extended past February 13, 2015.

20141212-5000 FERC PDF (Unofficial) 12/11/2014 5:13:06 PM

IND55

Vanessa Friedman, Wolf Creek, CA.
As a resident of Southern Oregon and a young woman increasingly concerned with the state of our environment and the disregard for our natural resources, I am very much against the construction of the LNG pipeline and would like to go on record voicing my concern. IND55-1

It seems to me that this project is being presented as one that would bring many jobs to Oregon, but I question the validity of that idea and also question how that will help us all long term. A few hundred jobs for a couple of years is not going to negate the extremely harmful long term effects putting this pipeline into Southern Oregon will have on our communities, future generations, and the earth itself.

FERC has failed to consider the impacts of putting this pipeline in the ground, the dangers of transporting and using natural gas, the unlawful nature of a corporate company attempting to invoke imminent domain upon about 300 land owners, 90% of whom do not want the pipeline going through their land, and perhaps most troubling, the alternatives to this idea. We do not need another pipeline. We do not need more fracking. We do not need more temporary jobs. What we need is to look toward the future, and see how we can all work on projects that will help our earth and each other. I would love to see a project that involved building solar panels. IND55-2

After attending two community meetings and gearing up to attend a third tonight, and hearing arguments from both sides, I believe the most important take away is that we need a longer comment period so that everyone's voices can be heard. FERC should extend the period by at least 30 days so that everyone has a chance to read the 5,000 page DEIS thoroughly and has time to think about what this project will truly mean for all of us. IND55-3

Thank you for your time,
Vanessa

IND55 Vanessa Friedman, Wolf Creek, CA

IND55-1 Comment noted.

IND55-2 The economic benefits of the Project, including jobs, were discussed in section 4.9 of the DEIS. The impacts of placing the pipeline in the ground and transporting natural gas through the pipe are addressed in chapter 4 of the DEIS. The DEIS concluded that while there would be some limited adverse effects, those impacts would be mitigated to non-significant levels. Safety was covered in section 4.13. Congress decided to convey the power of eminent domain to private companies that receive a Certificate from the FERC when it passed section 7(h) of the NGA in 1947.

IND55-3 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20141212-5017 FERC PDF (Unofficial) 12/11/2014

IND56

What better gift could a terrorist be given than locating LNG tanks and tankers at the end of the runway of a small public airport?

This location puts the entire population of North Bend and Coos Bay at risk of the equivalent of 160 Hiroshima nuclear bombs.

IND56 Anonymous comment

20141212-5017 FERC PDF (Unofficial) 12/11/2014

Accidental or intentional airplane crashes or dropping a fuel-air bomb would be virtually impossible to prevent.

The hazards to public safety of such a project location are absolutely unacceptable.

IND56-1

IND56 Continued, page 2 of 2

IND56-1 See section 4.13 for risks associated with the Project.

20141215-5000 FERC PDF (Unofficial) 12/12/2014 7:07:19 PM

IND57

Robert Altaras, ASHLAND, OR.
Dear Commissioners,
I feel approval of these projects would do exactly the opposite of what is in the best interest of the people of this country and my state of Oregon.
If the DEIS had taken into account the cumulative effects of these projects, including the production of the gas to be shipped and the emissions of the power plant in Coos Bay I think we'd see a significant contribution to global warming and other environmental impacts. What I feel is in the best interest of our nation and our planet is to move away from more fossil fuels and find cleaner alternatives. These projects represent the exact opposite of this thinking. IND57-1
As a fisherman, I literally worship the beautiful rivers and creeks of southern Oregon and recoil in fear at the thought of a pipeline crossing 400+ bodies of water. The risks of accidents seem way to high to justify the benefits, not to mention who actually benefits...countries of the Pacific Rim and foreign owned
companies.
Please, for the sake of your children and mine, reject these proposals.
thanks you for your consideration,
Robert Altaras

IND57 Robert Altaras, Ashland, OR

IND57-1 The Commission would determine public benefit in its Project Order. Cumulative effects, including the effects on climate change, are addressed in section 4.14 of the DEIS. Project-related impacts on waterbodies were discussed in section 4.4. As indicated in section 4.13, the risk of accidents is very low.

20141215-5010 FERC PDF (Unofficial) 12/13/2014 5:40:17 PM

IND58 Curtis, Grants Pass, OR

IND58

Curtis, Grants Pass, OR.
Comments for Jordan Cove LNG project. I sincerely hope these comments are taken into consideration and I want to thank you for the time taken to read these comments.

I want to start by giving you an idea of the land this pipeline will go through. This rural area of southern Oregon is one of the last clean and undisturbed areas in the world. Some of the lakes north of Klammath falls in the National forest are so pure they were used as baseline levels for studying acid rain and pollutant impacts. The proposed pipeline will also cross the Rogue river. This watershed travels directly through all of the major towns and cities in southern Oregon. Contamination of this river would impact the lives of every living person, animal and agricultural production in southern Oregon. Next the pipeline travels through vast national forests that have few maintained access points. Any fire caused by or accelerated by the natural gas being transported would devastate the landscape. fires here are commonplace in the summer. The largest fire in southern Oregon history was caused by lightning. Because of the remote access of these areas it spread and scarred the landscape on a tremendous scale. 11 or so years later it is just starting to rebound. Due to this rural and inhospitable landscape I find it hard to imagine any company maintaining and preserving a adequate level of safety in these remote locations with clean practices, many of the proposed paths for the pipeline are inaccessible in the winter and spring months.

The location of the export terminal in Coos Bay would have an even bigger negative impact for the small localized economic gains for this community. Although Coos bay is currently an economically depressed region it boasts some of the most predestine landscapes and waterfowl reserves on the West coast. Many of these ecosystems are very fragile while also being some of the cleanest watersheds on the west coast and possibly the world. Any water diversion to the proposed power plant would have detrimental impact on this watershed and water quality in the area. Our current droughts affect the watershed without any water diversion. The second negative impact will be the long term ecological damage and tourism losses. More people than one would think travel to these places along the Oregon coast. Many people come to view the last few places that are nearly untouched by civilization. Any water diversion or water contamination would render these last "clean zones" inhabitable for all species. The Coquille river for example has one of the healthiest Salmon spawning runs in the area, this proposed project will be using the water from that watershed. These are rivers and streams that have nearly no human impacts as they flow from the mountains directly into these marshland and coastal wetlands. The dredging of the bay to allow supertankers would instantly affect these areas negatively as well. All of that sediment movement and disturbance will instantly impact the coastal marine life that are relied upon by other species including humans. Even a slight increase in shipping lane use here would affect the wildlife.

In conclusion, I am aware that we need to do something as a species to address global pollutant levels. Having a Canadian company build a pipeline to supply our Domestic gas to Asia and China makes absolutely no

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sense to me. Why not sell the gas to domestic coal fired plants here in the United states? Maybe create a pipeline closer to the coal plants on the east coast? You even have less ground movement and earthquakes there than here on the west coast. This is not a way to lower pollutant levels by shipping them across the pacific, but merely a power play by a large energy company to exploit our resources for a capital gain on their part.

Southern Oregon may be rural and have a depressed economy but we have clean water and landscapes and we intend to keep it that way. It's time we start looking at a bigger picture and not replace ancient technology with something slightly newer for a short term gain. These power plants are basic. All they do is create heat to push generators. Lets move past this system and build a nation and energy system we can be proud to hand down to the younger generations and in tern the developing world. IND58-1

Thank you for your time, Curtis Clark

IND58 Continued, page 2 of 2

IND58-1 Comment noted.

20141215-5013 FERC PDF (Unofficial) 12/13/2014 10:51:27 PM

IND59

Michael Young, The Dalles, OR.
The Jordan Cove LNG Terminal and Pipeline analysis failed to consider the true dangers of this project to increase climate change problems. The Intergovernmental Panel on Climate Change (IPCC, 11-1-14 report) determined that by 2050 we must have reduced our reliance on fossil fuels by over 80%. The Jordan Cove terminal will have decades of life left by 2050. FERC failed to consider if this massive fossil fuel project would fit into that reduction. If not, this LNG project could tip us over into unlivable climate change. IND59-1

Natural gas is methane. A percentage of methane leaks unburned into the atmosphere when drilling and processing for LNG. This methane is 86 times more potent greenhouse gas than burning coal. FERC failed to consider these climate impacts of LNG. IND59-2

The company's stated Purpose and Need for this project (in "Resource Report One") is to be able to continue fracking and to expand fracking. Since the Jordan Cove LNG export project will facilitate increased fracking, FERC should have considered the cumulative impacts of fracking on our environment. IND59-3

FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND59-4

FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. For instance, FERC failed to consider impacts to over 300 Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. IND59-5

FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND59-6

This project will clearcut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND59-7

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000 page DEIS. This project is too big to give so little time for public input. IND59-8

Thank You, Michael Young

IND59 Michael Young, The Dalles, OR

IND59-1 This appears to be based on a form letter. See the response to IND1.

IND59-2 This appears to be based on a form letter. See the response to IND1.

IND59-3 This appears to be based on a form letter. See the response to IND1.

IND59-4 This appears to be based on a form letter. See the response to IND1.

IND59-5 This appears to be based on a form letter. See the response to IND1.

IND59-6 This appears to be based on a form letter. See the response to IND1.

IND59-7 Impacts on old-growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND59-8 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20141215-5020 FERC PDF (Unofficial) 12/14/2014 10:31:38 AM

IND60

Elise Haas, Grants Pass, OR.
This comment is a plea to FERC to cease any further movement on the planning and implementation of the Jordan Cove LNG Terminal and Pipeline in Southern Oregon. Southern Oregon contains some of the last unpolluted wetlands and watersheds in the nation. This project will clearcut a 100-foot wide swath through wildlife habitat along 75 miles of public forests in Southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. Furthermore, FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered the lives of human beings to be an acceptable trade for maintaining corporate profits. Additionally, FERC failed to consider the impact of the 230-mile long pipeline that would run from Malin to the Coos Bay LNG Terminal on Oregonians: Over 300 Oregon landowners now face eminent domain. FERC erroneously claims there is a big "public interest" in this project though the natural gas from the pipeline will be exported to China and will be built by a company from Canada; FERC would give the right to a foreign company to condemn Oregon land for their pipeline and profits. Lastly, and perhaps most frightening, FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two super-cooled 80-million-gallon tanks of liquefied natural gas if the power plant failed and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand and has real potential to create a natural disaster that would contaminate once healthy lands and water systems for generations to come.

IND60-1 IND60-2 IND60-3 IND60-4 IND60-5

IND60 Elise Haas, Grants Pass, OR

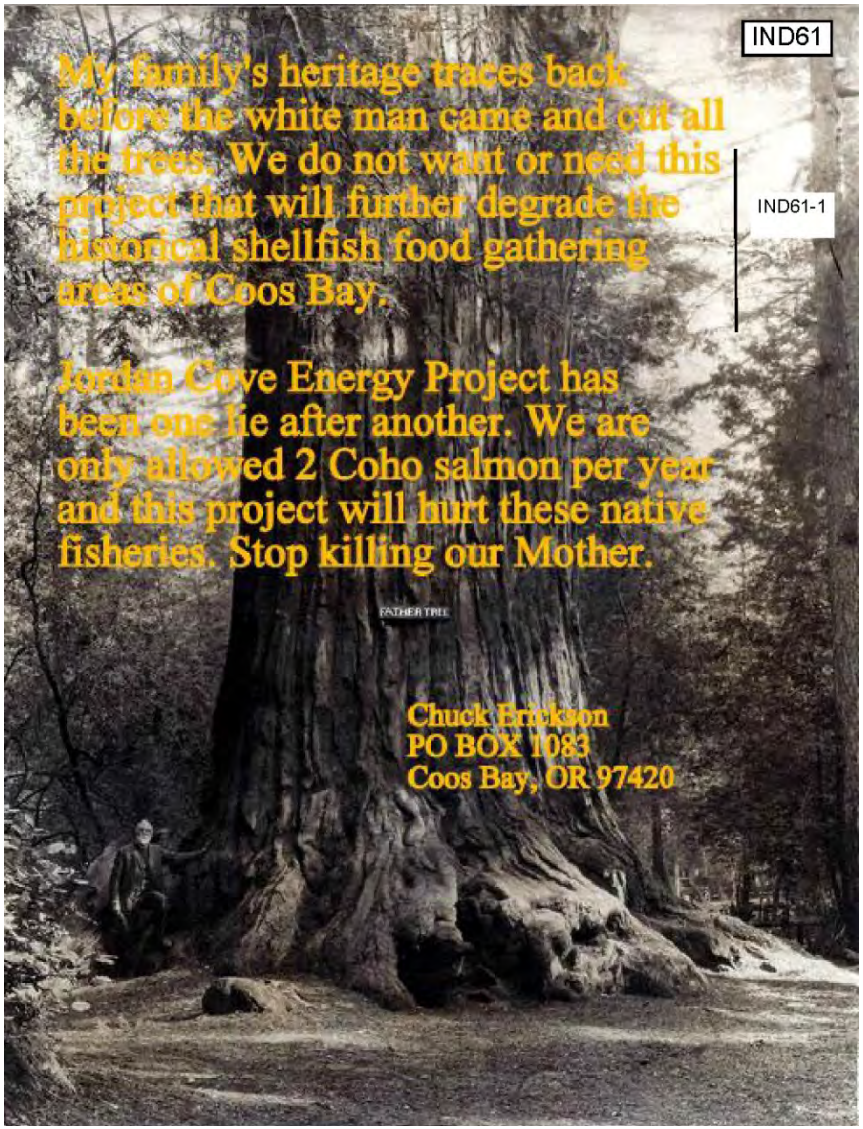
IND60-1 Southern Oregon does not have the last unpolluted wetlands and watersheds in the nation. As section 4.14 of the DEIS pointed out, humans have been modifying the environment of Southern Oregon for thousands of years. The ODEQ identified 35 waterbodies that would be crossed by the Pacific Connector pipeline route that are currently considered to be impaired or have limited water quality (see section 4.4.2.2).

IND60-2 Impacts on old-growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND60-3 This appears to be based on a form letter. See responses to IND1.

IND60-4 This appears to be based on a form letter. See responses to IND1.

IND60-5 This appears to be based on a form letter. See responses to IND1.



IND61	**Chuck Erickson, Coos Bay, OR**
IND61-1	Comment noted.

20141216-0022 FERC PDF (Unofficial) 12/16/2014

IND62

ORIGINAL

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December 10, 2014

DOCKET NUMBERS CP13-483-000 AND CP13-492-000

COMMENTS ON DRAFT EIS FOR THE JORDAN COVE PROJECT

In numerous instances within the DEIS, FERC has clearly and correctly stated that, for the Jordan Cove Project, it is "the lead federal agency in the preparation of an EIS to satisfy the requirements of the National Environmental Policy Act (NEPA)."[1]

This commentary will address the adequacy, or the lack thereof, of the draft EIS (DEIS) prepared by FERC in light of the letter and intent of NEPA and its implementing regulations. Initially, I will address compliance with the established broad-scale purpose and intent of an EIS as spelled out in the NEPA regulations. This will be followed by comments relating to how well the DEIS furnishes the *detailed information and analyses called for by the various headings within the* standardized format specified in the NEPA regulations. Finally, I will address the issue of whether the DEIS in its present form facilitates or hampers the preparation of a viable Record of Decision (ROD) which completes the EIS process.

1. REGULATORY PURPOSE AND INTENT OF AN EIS

Regulations state than an EIS "must be objectively prepared and not slanted to support the choice of the agency's preferred alternative over the other reasonable and feasible alternatives"[2] Recent guidance from the Council on Environmental Quality states that "an agency shall prepare an EIS so that it can inform the decisionmaking process in a timely manner and will not be used to rationalize or justify decisions already made". CEQ goes on to warn that "misuse IND62-1

[1] See for example: FERC, "Notice of Intent to Prepare An Environmental Impact Statement for the Planned Jordan Cove Project", August 2, 2012, page 1. See also DEIS, page 1-2.
[2] CEQ 40?, #4c.

1

IND62 Ron Sadler, North Bend, OR

IND62-1 Comment noted. The DEIS is not a decision document. The FERC's decision whether or not to authorize the Project would be in the Commission's Order, as explained in section 1.4.1 of the DEIS. As stated in section 1.4, the purpose of the DEIS is to disclose to the public and decision makers the environmental impacts associated with the construction and operation of the Project. See response to comment IND3-2.

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of the NEPA process to justify decisions already made is counterproductive and can result in litigation that could delay and ultimately prevent a proposed action from proceeding".[3] In addition, Federal agencies are instructed to consider the potential environmental consequences of any reasonable alternatives before deciding whether an in what form to take an action.[4]

It is quite clear that FERC has ignored the above-cited guidance and regulations. Obviously, FERC has not prepared an EIS that could "inform the decisionmaking process in a timely manner". Rather, it has prepared a DEIS that "assesses the potential environmental effects of the construction and operation of the Jordan Cove Project",[5] thereby making the project a pre-conceived decision. IND62-1 Cont.

The processing of the DEIS is the first of a three-step process which leads ultimately to a formal and documented decision. Given this reality, it is rather startling to learn that, even at this early preliminary stage of the decision process, the FERC staff has **already concluded** "that the approval of the Jordan Cove Project would result in some limited adverse environmental impacts", and that even these minimal impacts could be substantially reduced with mitigation measures recommended in the DEIS.[6] IND62-2

The DEIS provides a brief description of the approximately 19 instances wherein placement of the Pacific Connector Pipeline would conflict with the existing land *use plans of the Bureau of Land Management and the U.S. Forest Service.* Each individual description contains the statement that the land-use plan "would be amended" to accommodate the pipeline.[7] IND62-3

Obviously, if FERC and the other Federal agencies involved took the time and effort to process and evaluate land-use plan revisions in detail at a point in time even before the release of the DEIS, they must be operating under the assumption that the approval of the Jordan Cove Project is a decision that has already been made.

Comment No. 1 - The DEIS has not been objectively prepared and is slanted to rationalize and justify a decision that has already been made, namely the approval of the Jordan Cove Project, in direct violation of 40 CFR 1502.5. IND62-4

[3] CEQ's Memo for heads of federal departments and agencies, Subj: "Improving the Process for Preparing Efficient and Timely Environmental Reviews under the National Environmental Policy Act", March 6, 2012, page 7.
[4] ibid, page 3.
[5] FERC, Notice of Availability of the DEIS for the Jordan Cove Project, November 7, 2014, page 1.
[6] ibid, page 2
[7] ibid, pages 3 - 6.

2

IND62 Continued, page 2 of 13

IND62-2 The conclusion in the DEIS is about environmental impacts. It is not a conclusion that the Project should be authorized. As indicated in IND62-1, that decision rests with the Commissioners, and will not be made until after we have issued an FEIS.

IND62-3 The DEIS presents the amendments that would be required in order to provide the public with an opportunity to review and comment on them.

IND62-4 See the response to IND1-9.

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IND62 Continued, page 3 of 13

It is quite clear that FERC views this DEIS as a "full disclosure" document aimed at discussing the full range of environmental impacts associated with the construction and operation of the Jordan Cove project.

The Executive Summary explicitly states that "The purpose of this document is to inform the Commission...and the public about the potential adverse and beneficial environmental impacts of the Project and its alternatives".[8] This, it turns out, is a misleading statement as it relates to project alternatives.

The DEIS contains a section entitled "4.0 Environmental Analysis". By way of introduction, it contains the following paragraph: "In this section, we discuss the affected environment, general and site-specific construction and operational impacts, and proposed measures to avoid, reduce, or mitigate impacts. Our discussion encompasses Project-related impacts associated with the construction and operation of Jordan Cove's LNG export terminal and associated facilities, and Pacific Connector's pipeline and associated aboveground facilities".[9] (emphasis provided). IND62-5

This section is 1046 pages in length, yet it focuses entirely on the proposed action and makes no mention whatsoever of any alternative. It is the epitome of a "full disclosure" document, and does not in any way contribute to or facilitate the objective analysis of any alternative.

NEPA regulations address this situation as follows: "An environmental impact statement is more than a disclosure document. It shall be used.....in conjunction with other relevant material to plan actions and make decisions".[10]

Comment No. 2 - The DEIS has not been prepared as a tool to facilitate objective analysis, but rather is intended to serve as a full disclosure document focused on the proposed action itself in direct violation of 40 CFR 1502.1.

2. REGULATORY CONTENT AND FORMAT OF AN EIS.

Environmental impact statements are meant to be written in plain language so that the public can readily understand them.[11] They should normally be less than 150 pages in length, but for proposals of unusual scope or complexity, they should normally be less than 300 pages in length.[12] This requirement as to length of an EIS is typically scoffed at, but it has been reaffirmed by the Council

[8] DEIS, Executive Summary, page ES-1
[9] DEIS, page 4-1
[10] 40 CFR 1502.1
[11] 40 CFR 1502.8
[12] 40 CFR 1502.7

3

IND62-5 We disagree. The DEIS contains data that can be used to facilitate objective analyses. Alternatives to the proposed action were presented in chapter 3.

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on Environmental Quality as recently as 2012.[13]

In order to facilitate public understanding and interaction, agencies are to use a standard format for an EIS which would encourage good analysis and clear presentation of the alternatives, including the proposed action.[14] The key elements of the standard format are:

- Purpose and need for action.
- Alternative ways to meet the need, including the proposed action.
- Affected environment
- Environmental consequences.

Purpose and need for action

NEPA regulations state that the EIS must "specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action".[15] The purpose and need statement is meant to explain to the reader why an agency action is necessary, and serves as the basis for identifying the reasonable alternatives that could meet the stated purpose and need.[16]

The DEIS states that "the purpose and need for the proposed Project....was defined by Jordan Cove".[17] In summary, the project is being proposed by Jordan Cove in order to serve "robust international demand for natural gas" by exporting "competitively priced natural gas from western Canadian and Rocky Mountain sources". FERC apparently accepts this premise as a viable starting point and utilizes this orientation for the preparation of DEIS.

IND62-6

The U.S. Environmental Protection Agency (EPA), in its scoping comments for the Jordan Cove DEIS, states that "the EIS should reflect not only the FERC's purpose, but also the broader public interest and need. We recommend discussing the proposed project in the context of the larger energy market, including existing export capacity and export capacity under application to the Department of Energy, and clearly describe how the need for the proposed action has been determined".[18]

FERC has obviously ignored NEPA regulations as well as this input from the EPA and has based the entire DEIS on the overly-narrow, biased, and self-serving description of the purpose and need as provided by the applicant.

[13] CEQ Memorandum,"Improving the Process for Preparing Efficient and Timely Env.l Reviews under the National Environmental Policy Act", March 6, 2012, page 5.
[14] 40 CFR 1502.10
[15] 40 CFR 1502.13
[16] CEQ, "A Citizen's Guide to the NEPA', December, 2007, page 16
[17] DEIS, page 1-12
[18] EPA,"Scoping Comments- The Jordan Cove Energy Project", October 29, 012,page 3

IND62 Continued, page 4 of 13

IND62-6 The CEQ regulations for implementing the NEPA states (at 40 CFR 1502.1) that an EIS should only "briefly" describe the purpose and need for a project, as we did in section 1.3. That section also explained that the Commission would more fully address the need for the Project in its Order. The decision whether or not to allow the export of LNG is made by the DOE, not the FERC, as explained in section 1.4.3.3.

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Courts have warned agencies not to put forward a purpose and need statement that is so narrow as to "define competing 'reasonable alternatives' out of consideration or even out of existence"[19], yet this is obviously what FERC has done. IND62-7

Comment No. 3 - The statement of purpose and need in the DEIS violates both NEPA regulations and EPA guidance and is inadequate to serve as the starting point for a valid EIS.

Alternative ways to meet the need, including the proposed action

NEPA regulations state that this section is the heart of the EIS. It should present the environmental impacts of the proposal and the alternatives in comparative form (emphasis provided) thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. It should rigorously explore and objectively evaluate all reasonable alternatives, and devote the same level of analysis to each alternative including the proposed action so that reviewers may evaluate their comparative merits. The range of reasonable alternatives should include those not within the jurisdiction of the lead agency.[20] IND62-8

EPA scoping comments reiterate and reinforce the above cited regulations.

It is important to recognize the process outlined by NEPA at this point.

Initially, all alternative ways to meet the established need, including the proposed action, are to be listed. Some alternatives may not be deemed reasonable, and may be eliminated from further detailed study. A brief discussion of the reasons for the elimination of each such alternative must be provided.[21].

The remaining reasonable alternatives are then subjected to a rigorous and objective analysis presented in the subsequent EIS sections dealing with the Affected Environment (1502.15) and the Environmental Consequences (1502.16). The results of this analysis are than presented in this section in comparative form thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public.[22]

In a case such as this, wherein FERC is considering the application for a permit from a non-governmental entity, FERC must still consider all reasonable alternatives including those that are practical or feasible from the technical and

[19] Simmons v. U.S. Army Corps of Engineers, 120 F.3rd 664 (7th Cir. 1997).
[20] 40 CFR 1502.14.
[21] 40 CFR 1502.14 (a).
[22] 40 CFR 1502.14

5

IND62 Continued, page 5 of 13

IND62-7 We disagree. Chapter 3 of the DEIS explains how we analyzed alternatives.

IND62-8 We disagree. Alternatives to the proposed action were discussed in chapter 3. That section meets the standards outlined in the CEQ regulations at 40 CFR 1502.14. Our reasons for rejecting certain alternatives to the proposed action are well justified.

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IND62 Continued, page 6 of 13

economic standpoint and using common sense, rather than simply being desirable from the standpoint of FERC or the applicant.[23]

In spite of this requirement, the DEIS states that "Alternatives were evaluated against the purpose and objectives of the Jordan Cove Project.[24] The purpose and objectives of the project are described as follows: The Jordan Cove terminal will export LNG to overseas markets. The Pacific Connector Pipeline will transport natural gas from western Canadian and Rocky Mountain sources received at the Malin hub to the terminal on Coos Bay.

The DEIS states that there are a total of 14 LNG terminals on the East Coast or the Gulf Coast of the US either authorized, under review, or newly proposed. In spite of the fact that the EPA recommends analyzing the Jordan Cove project within the context of the larger energy market, FERC states that none of these would be "reasonable or practicable alternatives to the Jordan Cove proposal because they would not meet the main objectives of the Jordan Cove Project", namely, becoming the first West Coast LNG terminal and acquiring its natural gas from western Canadian and Rocky Mountain sources.[25] IND62-8 Cont.

The DEIS then addresses other proposed West Coast LNG export terminals.

It states that the Oregon LNG Project in Warrenton, Oregon could be considered a viable alternative to the Jordan Cove Project. However, FERC has "not yet issued a draft EIS for the project", thus making it premature to assume the Oregon LNG project would have either significant environmental impacts or advantages over the proposed Jordan Cove project.[26] No further comparative analysis is provided.

The EIS then addresses the Alaska LNG project. It states the following: "Although the Alaska LNG project would provide an export terminal on the West Coast of North America, it would not be able to access the gas supplies from western Canada and the Rocky Mountains. Thus, the Alaska LNG project cannot meet all of the objectives of the proposed Jordan Cove Project".[27]

The DEIS then addresses the proposal for the Alaska Gasline Port Authority LNG project and removes it from further consideration using the same finding as for the Alaska LNG project.[28]

As a result of the application of this rather ludicrous logic, FERC has determined

[23] CEQ Citizens Guide, op cit, page 16
[24] DEIS, page 3-1.
[25] DEIS, page 3-6
[26] DEIS, page 3-9
[27] DEIS, page 3-10
[28] DEIS, page 3-11

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that there simply are no reasonable alternatives to the Jordan Cove project, therefore, the subsequent section of the DEIS describing Environmental Consequences need not contain any sort of rigorous and objective analysis and comparison.

In addition to violating the letter and intent of the NEPA regulations, FERC has ignored the recommendations of the EPA which explicitly state "We recommend discussing the proposed project in the context of the larger energy market, including existing export capacity and export capacity under application to the Department of Energy, and clearly describe how the need for the proposed action has been determined.[29] IND62-8 Cont.

Comment No. 4 - The section of the DEIS relating to the Alternative Ways to Meet the Need violates Section 1502.14 of the NEPA regulations as well as EPA guidelines. It utilizes specious logic to come to the conclusion that there are no reasonable alternatives to the Jordan Cove project.

Affected Environment

NEPA regulations clearly require than an EIS must succinctly describe the environment of the area to be affected by the alternatives, including the proposed action, under consideration.[30]

The Coos Bay estuary is a still-functioning ecosystem but one that has been severely compromised by past actions. Following are a few examples of some of these effects.

Samples taken at various points within the estuary have shown concentrations of toxic materials in bottom sediments that exceed levels at which ecological effects are noted. These toxins include Tributyltin, arsenic, copper, lead, mercury nickel, zinc, polycyclic aromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs).[31]

After hatching on the upstream spawning grounds, juvenile Chinook salmon spend about 4 months in the Coos Bay estuary before they exit into the ocean. Upon leaving, studies have shown that they carry about 300 ppb of PAH metabolite concentrations in their bodies. They also carry about 25 ppb of PCB concentrations, as well as about 9 ppb of DDT concentrations.[32] It has been demonstrated that juvenile salmon and their prey within the food chain bioaccumulate chlorinated and aromatic hydrocarbons causing detrimental

[29] EPA scoping comments, page 3
[30] 40 CFR 1502.15
[31] NOAA, "Preliminary Natural Resource Survey, Coos Bay", December 12, 1997, page 11
[32] Dr. Mary Arkoosh, National Marine Fisheries Service, Newport, Oregon, 2000

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effects on their immune systems which results in increased disease susceptibility.[33]

The U.S. Environmental Protection Agency lists 4 sites in Coos Bay within their Superfund Program (EPA Site numbers OR 0001389956, OR 0001389964, OR 0001389972, and OR 0001389980). While none of these sites are currently listed on EPA's National Priorities List, the very fact of their listing shows that background levels of contaminants in the Coos Bay estuary were sufficient to attract the attention of EPA's Superfund program.

The dynamics of tidal flows in estuaries are often viewed in simplistic terms. It is often thought that a cloud of murky water, with its associated toxins, created by dredging are carried out of sight and out of mind by the next out-going tide. This is not realistic, however. Studies have shown that a particle suspended in the water column in parts of Coos Bay can take as long as 48 days to be flushed from the estuary,[34] thus providing ample opportunities for released toxins to re-enter the aquatic food chain.

The need to establish a solid baseline describing current conditions within the Coos Bay estuary as a starting point for the analysis of subsequent impacts that would be caused by the Jordan Cove project is obvious. The Environmental Protection Agency addresses this need as follows: "The cumulative impacts analysis should identify how resources, ecosystems and communities in the vicinity of the project have already been, or will be affected by past, present, or future activities in the project area. These resources should be characterized in terms of their response to change and capacity to withstand stresses. These data should be used to establish a baseline for the affected resources, to evaluate he significance of historical degradation, and to predict the environmental effects of the project components." (emphasis provided).[35] IND62-9

In spite of the critical nature and obvious importance of clearly establishing the current ecological condition of the Coos Bay estuary so that its capability, or the lack thereof, to respond to additional impacts brought about by the proposed project might be established, FERC has chosen to completely omit the segment on Affected Environment from the DEIS for the Jordan Cove project.

Comment No. 5 - In spite of its critical importance, FERC has chosen to eliminate the section describing the current condition of the Affected Environment from the Jordan Cove DEIS. This is a violation of the NEPA regulations at 40 CFR 1502.15 and ignores the recommendations of the IND62-10

[33] Arkoosh, "Effect of Pollution on Fish Diseases: Potential Impacts on Salmonid Populations", Journal of Aquatic Animal Health, Volume 10, June 1998, pages 182-190.
[34] Arneson, "Seasonal Variation in Tidal Dynamics, Water Quality and Sediments in the Coos Bay Estuary", Oregon State University Masters Thesis, June, 1976
[35] EPA Scoping Comments for the Jordan Cove project, page 13.

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IND62-9 Please see the discussion in section 4.14.2.2 for an explanation of how past actions contributed to the current conditions. See 4.14.2.3 discusses the scope of the analysis. Current conditions are disclosed in sections 4.1 to 4.12 of the DEIS. Cumulative effects on resources are disclosed in section 4.14.3.

IND62-10 The affected environmental and current conditions for all resources are discussed at considerable length for each resource in chapter 4, as explained in section 4.0 (page 4-1) of the DEIS.

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Environmental Protection Agency.

Environmental Consequences

NEPA requires that this section of the EIS form the scientific and analytic basis for the comparison of the proposed action and all reasonable alternatives.[36] This section of the EIS must include discussions of: Direct effects, defined as effects caused by an action that occur at the same time and place; Indirect effects, defined a effects caused by the action but are later in time or farther removed in distance, but are still reasonably foreseeable;[37] and Cumulative effects, which are impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or persons undertake such other actions.[38]

The EPA recommends that a discussion of the "indirect effects related to gas drilling and combustion" be included in the Jordan Cove EIS[39] and states the following: "We believe it is appropriate to consider available information about the extent to which drilling activity might be stimulated by he construction of an LNG export facility on the west coast, and any potential environmental effects associated with that drilling expansion".[40] IND62-11

FERC has refused to consider such indirect and cumulative effects as those mentioned by the EPA because "we do not consider them to be environmental in nature".[41] FERC considers such items as being beyond the scope of the DEIS.

However erroneous FERC's position might be, there are other items that are definitely not beyond the scope of the Jordan Cove project that are simply not properly described or analyzed within the DEIS. IND62-12

The DEIS mentions that Jordan Cove examined 7 ports in California, 14 in Oregon, and 17 in Washington to determine their suitability for the location of an LNG export terminal. Jordan Cove decided on Coos Bay for its terminal location. "After reviewing these data, the FERC was unable to identify any other alternative port location on the Northwest Pacific Coast that could meet the objectives of the Jordan Cove Project and that would have significant environmental advantages over Coos Bay".[42]

[36] 40 CFR 1502.16.
[37] ibid, (a) and (b)
[38] 40 CFR 1508.7
[39] EPA scoping comments, page 2
[40] ibid, page 12
[41] DEIS, page 1-20
[42] DEIS, page 3-11

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IND62-11 Drilling for natural gas is not considered an effect of the proposed action. The FERC does not regulate natural gas exploration, production, or gathering activities, as explained in section 1.4.4 of the DEIS. See the response to IND1-2.

IND62-12 Jordan Cove's analysis of various ports that it examined along the Pacific Coast of the United States can be found in section 10.3.4 of Resource Report 10, included with its May 21, 2013 application to the FERC. Jordan Cove's application in Docket No. CP13-483-000 is a public document that can be viewed in electronic format on the internet through the eLibrary system of the FERC's webpage (www.ferc.gov). As stated in section 3.3.1 of the DEIS, our detailed analysis of potential West Coast alternative ports was included in section 3.3 of our May 2009 FEIS for the original Jordan Cove LNG import proposal in Docket CP07-444-000. This document is also available for public viewing through the FERC webpage.

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What are the names of the ports that were considered?

Where is the comparative assessment of their current environmental conditions?

What environmental factors were most at risk for each location?

How were environmental, technical, and economic factors balanced for each?

What specific criteria were used to select the preferred location?

The answers to these types of questions would be critical elements within a valid EIS process FERC has chosen to keep the results of its clandestine analysis completely under cover, and for the purpose of the DEIS, go ahead and simply state that there are no reasonable alternatives to the Jordan Cove project. IND62-12 Cont.

In the introduction to this section of the DEIS, it is stated that "Our discussion encompasses Project-related impacts associated with the construction and operation of Jordan Cove's LNG export terminal and associated facilities..."[43]

However, even the description of the proposed action used at this point is flawed. It makes no mention, for example, of the channel improvements in Coos Bay that would have to be made to provide access to the LNG carriers, even though EPA states that the facilities comprising the Jordan Cove project must include a "7.3 mile long waterway in Coos Bay for about 80 LNG carriers per year"[44]. Since this waterway improvement would be necessary to allow the LNG facility to function, its impacts must be addressed in the DEIS. IND62-13

In addition, there is a proposal for an offshore wind power generating facility proposed by Principle Power. In its application to the Bureau of Ocean Energy Management, Principle Power states that the "existence" of the Jordan Cove project provides a suitable market condition for the location of the wind power terminal on Coos Bay. They also state the following: "A subsea cable would be used to export produced electricity to the facilities at Jordan Cove"; "Jordan Cove and Principle Power are negotiating a power purchase agreement..."; "Infrastructure planning in conjunction with Jordan Cove is already underway at the Port of Coos Bay".[45] Clearly, this related facility should be addressed as an integral part of the Jordan Cove project in the DEIS also, but it is not. IND62-14

In summary, FERC has decided that, instead of providing the scientific and

[43] DEIS, page 4-1
[44] EPA scoping comments, page 1
[45] Principle Power, "Unsolicited Application for an Outer Continental Shelf Renewable Energy Commercial Lease: Principle Power WindFloat Pacific Pilot Project", submitted to BOEM, May 14, 2013, pages 1 and 5.

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IND62-13 Information on the access channel is provided in section 2.1.1.2; information on dredging and disposal of dredged material is provided in 2.1.1.12 and in 4.4.2.1. The existing navigation channel is maintained by the federal government. As stated in section 4.4.2.1, the existing channel would be used as part of the waterway for the Project; it can accommodate tankers up to 148,000 cubic meters in capacity. A new dredged channel would be created between the existing channel and the terminal marine slip. As discussed in section 2.2.1, the Coast Guard would limit the size of tankers using the waterway to 148,000 cubic meters in capacity. Jordan Cove estimates that about 90 tankers would visit its terminal. Maintenance dredging would continue to be required for the waterway.

IND62-14 The Principal Power proposal was discussed in sections 3.3.2.4 and 4.14 of the DEIS. The Principal Power proposal would be an independent action by a third party. The Principal Power project has not been fully funded, and is one of seven projects seeking DOE grants. The Jordan Cove LNG Project is not dependent upon or interlinked with the Principal Power project. In fact, the Jordan Cove LNG Project could be built and operated without the Principal Power project if it is not funded.

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analytic basis for the comparison of alternatives and the proposed action as called for in the NEPA regulations, the Environmental Consequences section of the DEIS will consist solely of a discussion of the narrowly-defined impacts of the Jordan Cove project itself.

However, even this narrowly focused and sharply defined discussion is not adequately comprehensive and complete. The discussion of the interplay of the proposed project with the existing North Bend Airport is a good example.

The Commission voted in 2009 to approve the Jordan Cove LNG import proposal. However, Jon Wellinghoff, the Chairman of the Commission at that time, cast the lone dissenting vote. His dissent was based on his opinion that the EIS for the import terminal did not adequately address the possibility that terminal construction and operation might adversely affect the operations and functions of the North Bend Airport.

If the Airport were to be negatively impacted by the placement of the Jordan Cove facility, serious social and economic impacts would certainly affect the area. Certainly, a valid DEIS should provide the citizens with a description of the types of impacts as well as the probability as to their occurrence. IND62-15

Even though the FAA has not yet formally reviewed the project proposal, FERC has concluded on its own that "the Jordan Cove project would have negligible impacts on air traffic...". FERC then makes the rather astonishing statement that "**Prior to construction, Jordan Cove should file with the Secretary documentation of its consultations with the FAA....together with copies of any official determinations made by the FAA with respect to the LNG terminal and related facilities.**" (emphasis in original)[46].

In other words, FERC has chosen not to inform the public of problems potentially serious enough to have warranted a negative vote by former Chairman Wellinghoff previously. In effect, FERC is saying it will approve the Jordan Cove project without a formal interaction with the FAA and Jordan Cove can provide the paper-work later prior to beginning construction.

Comment No. 6 - Instead of providing an objective and analytical basis for the comparison of the alternatives considered, including the proposed action, the Environmental Consequences section of the DEIS amounts to an attempt to justify a pre-conceived decision in violation of the spirit and intent of NEPA and guidance from the EPA. IND62-16

[46] DEIS, page 4-843

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IND62-15 Our analysis of potential Project-related impacts on the Southwest Oregon Regional Airport in North Bend can be found in section 4.10.1.4 of the DEIS. In their December 17, 2009 Order approving the original Jordan Cove LNG import proposal in Docket No. CP07-444-000, the other four sitting Commissioners disagreed with and overruled Mr. Wellinghoff's dissent. In a letter to the Commission dated December 22, 2014, commenting on our November 2014 DEIS for the LNG export Project in Docket No. CP13-483-000, the Southwest Oregon Regional Airport and Coos County Airport District stated that it "strongly concurs with (the) recommendation (in the DEIS for Jordan Cove to document consultations with the FAA and submit the results of studies before Project construction) and believes that the FAA process will assure that the Airport continues to operate safely and efficiently."

IND62-16 We disagree. The DEIS is not a decision document. No decision has been made yet whether or not to authorize this Project. The Commission would make its decision in the Project Order.

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3. REGULATORY PURPOSE AND INTENT OF A RECORD OF DECISION

After the DEIS has been reviewed and commented upon by the public and state and federal agencies, a Final EIS is issued for another review. The EIS process then terminates with the issuance of a Record of Decision (ROD).

According to existing regulations, a ROD must: state what the decision was; identify all alternatives that were considered in reaching the decision; specify which alternative or alternatives were considered to be environmentally preferable; and discuss how environmental, technical. and economic considerations were balanced in arriving at the decision.[47] IND62-17

The Jordan Cove DEIS, in its present form, is completely inadequate and totally unusable as the beginning point for a process leading to a legally viable Record of Decision. For example, how is it possible to identify an environmentally preferable alternative when the only alternative presented and analyzed is the Jordan Cove project?

Per the DEIS, the need for a LNG export terminal on Coos Bay was determined by the Jordan Cove applicant itself.

In the DEIS section regarding the identification of alternatives, FERC quickly and summarily found that there were no viable alternatives to the Jordan Cove facility. This was rather surprising, in that FERC currently has at least 14 LNG export terminals before it for consideration. FERC's unwillingness to address alternatives is explained as follows: "FERC does not engage in regional planning exercises that would result in the selection of one terminal location over another. Instead, it is the Commission's policy to allow market forces to influence where LNG terminals should be situated.... " (emphasis provided).[48] IND62-18

The regulations state that the next section of an EIS should be a description of the Affected Environment. This section is meant to provide a current baseline describing the status of the ecosystems involved so that a meaningful discussion of the direct, indirect, and cumulative impacts of the proposed project can be identified. This section is completely omitted from the Jordan Cove DEIS. IND62-19

The final section of an EIS is a discussion of the Environmental Consequences of all alternatives including the proposed action. Since there are no alternatives to consider, this section in effect becomes a justification of a pre-conceived decision, namely, the approval of the Jordan Cove project, together with a lengthy discussion of possible mitigation measures.

There can be little doubt that FERC considers the Jordan Cove project already IND62-20

[47] 40 CFR 1505.2
[48] DEIS, page 1-22

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IND62-17 A range of alternatives were analyzed in Chapter 3 of the DEIS. The decision document would be a Commission Order, not a ROD.

IND62-18 See response to comment IND62-17. Other LNG terminal are examined as alternatives in section 3.2.2 of the DEIS.

IND62-19 While there are no headings that say Affected Environment or Current Conditions, the current conditions are discussed at considerable length for each resource in Chapter 4. For example see the discussion on upland vegetation conditions on pages 4-28 to 4-48.

IND62-20 See responses to IND3-2 and IND62-16. The DEIS is not a decision document. The Commission will not make its decision until it issues its Project Order. The DEIS does contain recommendations for conditions to be included in the Project Order. The Order would be conditional. If the Project is approved by the Commission, construction would not be allowed until after all the appropriate conditions have been satisfied. In cases where access to the pipeline route was denied by landowners, surveys cannot be conducted until after the Commission has issued a Certificate, providing Pacific Connector with the power of eminent domain.

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approved, and, in a quite unusual application, they have utilized the DEIS as a mechanism to guide the Jordan Cove applicant through the immediate steps ahead.

FERC has listed a number of reports, revisions, analyses, permits, mitigation measures, etc. that must be addressed as the applicant moves towards implementation. FERC lists a total of 15 actions that must be accomplished "Prior to the end of the comment period for the DEIS"; 34 actions that must be accomplished "Prior to commencing the final design"; and 27 actions that are to be completed "Prior to beginning construction".[49] IND62-20 Cont.

In other words, FERC is telling the applicant that their project will ultimately be approved and here are some things to work on in the interim. As the lead agency for the preparation of the DEIS, and until a Record of Decision completing the EIS process has been issued, FERC is prohibited from taking any action concerning the proposal which would tend to limit the choice of reasonable alternatives[50], thus FERC is in direct violation of the NEPA regulations.

Comment No. 7 - The DEIS, in its present form, does not provide the data, information, and analyses needed to prepare a Record of Decision that would fully comply with the NEPA regulations. Furthermore, it prematurely limits the choice of reasonable alternatives. IND62-21

SUMMARY COMMENT: As outlined above, the DEIS for the Jordan Cove project is a gross violation of the letter, spirit, and intent of the National Environmental Policy Act. Regulations at 40 CFR 1502.9 (a) state that a DEIS must fulfill and satisfy to the fullest extent possible the requirements established for final statements in section 102 (C) of the NEPA, and that if a DEIS is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised DEIS. IND62-22

I ask that the current Jordan Cove DEIS be rescinded, and that a new DEIS be prepared in full compliance with existing regulations.

[49] DEIS, pages 5-29 through 5-42.
[50] 40 CFR 1506.1(a)(2).

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IND62-21 We disagree. We have on-the-ground survey data for part of the pipeline route, and background information from literature reviews for the entire route. Therefore adequate data exists for us to assess environmental impacts in the DEIS. The EIS is a disclosure document that would allow the Commission to make an informed decision, including the selection of alternatives. See response to IND62-17 and IND62-20.

IND62-22 We disagree. The DEIS meets the letter and spirit of the law and regulations implementing the NEPA. See response to IND3-3.

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IND63

Joseph Viani, Ashland, OR.
Regarding Docket Nos. CP13-483-000 and CP13-492-000

I am opposed to the proposed terminal and pipeline for the following reasons:

1. Problem: Water use on the LNG project far exceeds local supply. It is preposterous to think water is available to, among other things, "dust service roads" that support the 200+ mile pipeline project. Southern Oregon is experiencing a terrible drought. Our reservoirs are nearly empty, lakes were practically unusable due to shore lines extending considerable distances from what was once considered normal, and the expectation of renewing our water surplus is questionable due to marginal snow pack over the past year and a "wetter" weather system that may pass by southern Oregon altogether. Fish, wildlife and irrigators need the water. Firefighters need the water. IND63-1

2. Problem: a 95' swath of clear-cut is going to permanently destroy habitat for wildlife and profoundly affect our local economy. There's absolutely no justification for adding pipeline-related jobs in exchange for eliminating tourism jobs. Southern Oregon is a prime example of a unique diversification of habitats for plants, insects, birds, and animals. A 95' cleared area is required to maintain the 1-meter (diameter) pipe line that will cross over 230 miles of pristine wilderness. There is absolutely no justification for this amount of destruction considering the ethical misappropriation of the land. Southern Oregon relies heavily on tourists to support it's fragile economy. Having streams polluted, fish breeding grounds compromised due to temperature fluctuations and more sediment attributed to tree removal, and old-grown forests cleared will adversely, and permanently, alter the local economy. IND63-2

3. Problem: eminent domaine would be applied to obtain privately-owned land to use for non-public industry. At a recent FERC public hearing, one land owner lamented that 90% of private landowners were opposed to the acquisition of their properties through eminent domaine. On more than one occasion, land sales have failed to close when the prospective owners learned of the pipeline. Not all the affected land is farmable; much is timber and homeowners chose this area to live due to the diversification of the environment, be it plant, animal, bird, insect, reptile, fish, etc. To permanently destroy a person's property for the sake of private industry is criminal. FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND63-3 IND63-4

4. Problem: FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay as well as the entire 230 miles of proposed pipeline. Many of us are attending disaster preparedness programs sponsored by the city of Ashland. We are well aware of the possibility of a major quake and it's aftermath. My family visits the coast, we have friends who live there. IND63-5

IND63 Joseph Viani, Ashland, OR

IND63-1 Applying water for dust control is a standard practice for forest roads. This is discussed in section 4.4.2.2, including the water sources.

IND63-2 Section 4.6.2.3 concludes that sediment entering fish streams would be short-term and modeling indicates that sediment would likely be within the normal fall/winter turbidity levels within 300 to 500 feet downstream of the crossing. Crossings would typically be completed during the state-approved in-water work window.

IND63-3 Impacts on landowners whose property would be crossed by the pipeline route, including effects on property values, are discussed in section 4.9.2.3 of the DEIS.

IND63-4 As stated in section 4.13 of the DEIS, the FERC does not establish safety standards for pipelines; those standards are set by the U.S. Department of Transportation (DOT). It is outside the authority of the FERC to revise or alter the DOT safety standards.

IND63-5 This appears to be based on a form letter. See responses to IND1.

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FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND63-6

5. Problem: The LNG tankers need harbor support and monitoring. At whose expense? IND63-7

IND63 Continued, page 2 of 2

IND63-6 This appears to be based on a form letter. See responses to IND1.

IND63-7 The US Coast Guard is responsible for regulating shipping in Coos Bay and in coastal waters. Harbor costs are paid by the vessels using the harbor.

20141217-5003 FERC PDF (Unofficial) 12/16/2014 6:03:02 PM

IND64

Jen Anonia, Cottage Grove, OR.
I am opposed to the draft proposal for the 230-mile Pacific Connector pipeline slated to be built across southwest Oregon. The pipeline would recklessly cross salmon streams and cut through old-growth reserves to facilitate moving fracked gas from the Rockies to the Jordan Cove liquefied natural gas (LNG) export terminal proposed for Coos Bay. IND64-1

This project has been poorly thought out by the Federal Energy Regulatory Commission and does not address the negative impact on climate change that it will cause. Natural gas is methane. A percentage of methane leaks unburned into the atmosphere when drilling and processing for LNG. This methane is 86 times more potent greenhouse gas than burning coal. FERC failed to consider these climate impacts of LNG. IND64-2

FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND64-3

FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. For instance, FERC failed to consider impacts to over 300 Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. IND64-4

FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND64-5

This project will clearcut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND64-6

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000 page DEIS. This project is too big to give so little time for public input. IND64-7

I

IND64 Jen Anonia, Cottage Grove, OR

IND64-1 Comment noted.

IND64-2 See the response to IND1-1 and IND1-2.

IND64-3 See the response to IND1-4.

IND64-4 See the response to IND1-5.

IND64-5 See the response to IND1-7.

IND64-6 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND64-7 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

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IND65

Jennifer Reed, Ashland, OR.
No to fracking. No to the Jordon Cove LNG Project and its pipeline.
It's time to turn away from fossil fuels, not expand their extraction and use.

The Jordon Cove LNG Project and its pipeline should be scraped. I oppose this project because it is part of a concerted effort by energy companies to further normalize and expand fracking, a practice that utterly destroys the environment. The consequences of tons of chemicals forced underground poisons ground water and makes land uninhabitable. This sort of wanton destruction for the sake of short term profits is unacceptable and must end. IND65-1

We have been led to believe that this country must become energy independent—that such reasoning supports environmental destruction. This reasoning is not just faulty, but is a lie: Gas that would flow through the Jordon Cove pipeline is destined for overseas. Therein, the reason for permanent destruction of land to extract gas is for one reason: corporate profits.

Furthermore, it is my understanding that FERC has failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. To ignore these facts and therein science not just turns a blind eye to an inconvenient reality, but employs nothing less than magical thinking to assume such reality will not occur: this blind eye or flight from reality amounts to gambling, to betting. Such is a world built on risk a practice that is inherently manipulative and in substance fuels perception manipulation: Oregon would pay if something goes wrong. Lives might be lost. And what about utterly destroyed land? What about landowners who may well not have a choice about a pipeline built on their property, one that carries a volatile substance? IND65-2

Jordon Cove Energy Partners is about making money for itself, not the public good. And part of said profits would head north to Canada.

Jordon Cove is not about jobs or helping the people of Oregon or the United States. It's about corporate profits at the expense of the people of Oregon.

No to Jordon Cove!

IND65 Jennifer Reed, Ashland, OR

IND65-1 Comment noted. Also, see the response to IND1-3.

IND65-2 This is not a correct understanding. See the response to IND1-4.

20141217-5007 FERC PDF (Unofficial) 12/16/2014 7:19:42 PM

IND66

Mercedes Lackey, Claremore, OK.
FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND66-1

And what about the pipeline itself, which is also in an earthquake zone? What happens when you get a rupture due to seismic activity, an explosion and a plume of fire shooting hundreds of feet in the air as the gas continues to flow? Gas pipeline ruptures typically do not get shut off for hours, and even when they are the fire continues to burn the gas already in the pipeline.

The Jordan Cove LNG Terminal and Pipeline analysis failed to consider the true dangers of this project to increase climate change problems. The Intergovernmental Panel on Climate Change (IPCC, 11-1-14 report) determined that by 2050 we must have reduced our reliance on fossil fuels by over 80%. The Jordan Cove terminal will have decades of life left by 2050. FERC failed to consider if this massive fossil fuel project would fit into that reduction. If not, this LNG project could tip us over into unlivable climate change. IND66-2

Natural gas is methane. A percentage of methane leaks unburned into the atmosphere when drilling and processing for LNG. This methane is 86 times more potent greenhouse gas than burning coal. FERC failed to consider these climate impacts of LNG. IND66-3

The company's stated Purpose and Need for this project (in "Resource Report One") is to be able to continue fracking and to expand fracking. Since the Jordan Cove LNG export project will facilitate increased fracking, FERC should have considered the cumulative impacts of fracking on our environment. IND66-4

FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. For instance, FERC failed to consider impacts to over 300 Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. IND66-5

FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. IND66-6 Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. IND66-7 FERC should not have considered people lives an acceptable trade for saving corporate profits.

IND66 Mercedes Lackey, Claremore, OK

IND66-1	See the response to IND1-4.
IND66-2	See the response to IND1-1.
IND66-3	See the response to IND1-2.
IND66-4	See the response to IND1-3.
IND66-5	See the response to IND1-5.
IND66-6	See the response to IND1-7.
IND66-7	See the response to IND1-7.

20141217-5110 FERC PDF (Unofficial) 12/17/2014 12:57:17 PM

IND67

joseph Bayley, Port Townsend, WA.
The Jordan Cove LNG Terminal and Pipeline analysis failed to consider the true dangers of this project to increase climate change problems. The Intergovernmental Panel on Climate Change (IPCC, 11-1-14 report) determined that by 2050 we must have reduced our reliance on fossil fuels by over 80%. The Jordan Cove terminal will have decades of life left by 2050. FERC failed to consider if this massive fossil fuel project would fit into that reduction. If not, this LNG project could tip us over into unlivable climate change. IND67-1

Suicidal or sacrificial?

Natural gas is methane. A percentage of methane leaks unburned into the atmosphere when drilling and processing for LNG. This methane is 86 times more potent greenhouse gas than burning coal. FERC failed to consider these climate impacts of LNG. IND67-2

Self interest of a few seems this act.

The company's stated Purpose and Need for this project (in "Resource Report One") is to be able to continue fracking and to expand fracking. Since the Jordan Cove LNG export project will facilitate increased fracking, FERC should have considered the cumulative impacts of fracking on our environment. IND67-3

Please redirect your/our focus.

FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND67-4

Collective Corporate Military Civilian behaviour oriented towards a concerned, caring attitude and behaviour seems more productive.

FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. For instance, FERC failed to consider impacts to over 300 Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. IND67-5

Lots of people are trying, you could too.

FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND67-6

IND67 Joseph Bayley, Port Townsend, WA

IND67-1 See the response to IND1-1.

IND67-2 See the response to IND1-2.

IND67-3 See the response to IND1-3.

IND67-4 See the response to IND1-4.

IND67-5 See the response to IND1-5.

IND67-6 See the response to IND1-7.

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Good luck!

This project will clearcut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND67-7

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000 page DEIS. This project is too big to give so little time for public input. IND67-8

IND67 Continued, page 2 of 2

IND67-7 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND67-8 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20141217-5113 FERC PDF (Unofficial) 12/17/2014 1:30:47 PM

IND68

Benton Elliott, EUGENE, OR.

The Jordan Cove LNG Terminal and Pipeline analysis failed to consider the true dangers of this project to increase climate change problems. The Intergovernmental Panel on Climate Change (IPCC, 11-1-14 report) determined that by 2050 we must have reduced our reliance on fossil fuels by over 80%. The Jordan Cove terminal will have decades of life left by 2050. FERC failed to consider if this massive fossil fuel project would fit into that reduction. If not, this LNG project could tip us over into unlivable climate change. IND68-1

Natural gas is methane. A percentage of methane leaks unburned into the atmosphere when drilling and processing for LNG. This methane is 86 times more potent greenhouse gas than burning coal. FERC failed to consider these climate impacts of LNG. IND68-2

The company's stated Purpose and Need for this project (in "Resource Report One") is to be able to continue fracking and to expand fracking. Since the Jordan Cove LNG export project will facilitate increased fracking, FERC should have considered the cumulative impacts of fracking on our environment. IND68-3

FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND68-4

FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. For instance, FERC failed to consider impacts to over 300 Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. IND68-5

FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND68-6

This project will clearcut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND68-7

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000 page DEIS. This project is too big to give so little time for public input. IND68-8

IND68 Benton Elliott, Eugene, OR

IND68-1 This appears to be based on a form letter. See responses to IND1.

IND68-2 This appears to be based on a form letter. See responses to IND1.

IND68-3 This appears to be based on a form letter. See responses to IND1.

IND68-4 This appears to be based on a form letter. See responses to IND1.

IND68-5 This appears to be based on a form letter. See responses to IND1.

IND68-6 This appears to be based on a form letter. See responses to IND1.

IND68-7 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND68-8 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20150211-5191 FERC PDF (Unofficial) 2/11/2015 1:41:06 PM

IND69

Kelly Caldwell, Portland, OR.
As someone with connections to southern Oregon and property along the proposed Pacific Connector LNG pipeline. I have extreme concerns. I believe it will not be economically viable in the long run. It is a boondoogle construction project. The pipeline construction will cause significant damage to the environment and related local economies, and I'd like to express some specific concerns. This is an environmental disaster in the works and the EIs is not adequate in naming the impacts, nor addressing and mitigating them. Here are just two areas I'd like to comment on:

I have reviewed the draft EIS and see no assessment of the use of glyphosate containing herbicides, such as RoundUp. This is a very common and routine practice for clearing and maintaining an open corridor for pipelines. The lack of reference of this practice and it's impacts is a serious omission. All of these aspects and impacts of herbicide and other applied chemicals should be referenced and addressed in the EIS report. IND69-1

There are a number of key areas that need to be addressed in regard to use of applied chemicals. The proposed pipeline cuts through sensitive habitat areas. Glyphosate containing herbicides can significantly affect the numbers and diversity of plant species and healthy soil organisms. Use of Glyphosate containing herbicides has been shown to negatively impact amphibians and aquatic life. The proposed corridor is adjacent to farms and gardens, some of which are specifically organic. This increases risk of harm and limits the economic productivity of gardens and farms. These herbicidal chemicals have not been proven to be safe to human health either, which is an important consideration as well. IND69-2

Additionally, I have concerns about the disruption and destruction of ecological balance of the hundreds of water crossings along the proposed pipeline corridor. The impacts on water quality, fish and other sensitive critters has not been adequately addressed in the EIS. The suggestions about mitigation I've seen are inadequate and there is absolutely no method in place to ensure that even basic steps are taken to protect and repair the habitats. In addition to the impact of damage to the environment, this will impact local fishing economies as well. IND69-3

IND69 Kelly Caldwell, Portland, OR

IND69-1 As stated on page 4-458 and 4-459, unwanted vegetation would be controlled mostly by mechanical means (mowing, cutting, and hand-pulling) with some spot use of herbicides. No herbicide would be applied within 100 feet of a waterbody.

IND69-2 As stated on page 4-458 and 4-459, unwanted vegetation would be controlled mostly by mechanical means (mowing, cutting, and hand-pulling) with some spot use of herbicides. No herbicide would be applied within 100 feet of a waterbody.

IND69-3 Section 4.4.2.2 (the Water Quality section) discusses Project effects on streams, including turbidity and sediment control due to pipeline crossings of streams. Additional information on the effects on streams and fish is found in section 4.6 (Wildlife and Aquatic Species) and in 4.7 (Threatened, Endangered, and Other Special Status Species).

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IND70

Rodney Bohner, Eugene, OR.
I am writing in opposition of the proposed pipeline and export facility. I'm concerned for a number of reasons, but mainly for the lack of consideration given by FERC, our regulating commision, in all aspects of in implications and impacts these projects would cause. IND70-1

First off, FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND70-2

Secondly, FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. For instance, FERC failed to consider impacts to over 300 Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. IND70-3

FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND70-4

This project will clearcut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND70-5

FERC is required to consider impacts on recreation, natural resources, and safety. Clearly, there has been a failure to investigate all impacts. IND70-6

Sincerely,

Rodney Bohner

IND70 Rodney Bohner, Eugene, OR

IND70-1 Comment noted.

IND70-2 This appears to be based on a form letter. See responses to IND1.

IND70-3 This appears to be based on a form letter. See responses to IND1.

IND70-4 This appears to be based on a form letter. See responses to IND1.

IND70-5 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND70-6 The NEPA process required the production of an EIS for projects that 1) trigger a federal nexus, and 2) could have significant impacts to the environment. FERC is complying with the requirements of NEPA through the production of this EIS. The DEIS assesses the impact that the project could have to environment. In order to ensure that the EIS addresses all potential impacts, FERC is requesting comments from the public on the potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. The more specific your comments are, the more useful they will be. Comments will be addressed in the FEIS.

20141218-5008 FERC PDF (Unofficial) 12/17/2014 8:06:50 PM

IND71

Charles L Thomas, Eugene, OR.
It is my understanding that this terminal would be built on Coos Bay's North Spit where volatile gas would be pumped into large tankers. This would require a liquefaction plant, huge storage tanks to store liquefied gas and refrigerant chemicals. There would also be a shipping berth, and a 420-megawatt power plant. It is difficult to believe that supposedly intelligent people would want to build this monstrosity on a spit of sand in the Pacific Ocean given the potential for earthquake/tsunami damage along the Oregon Coast. The application should be denied. IND71-1

IND71 Charles L. Thomas, Eugene, OR

IND71-1 Comment noted. See the response to IND1-4.

20141218-5009 FERC PDF (Unofficial) 12/17/2014 8:34:30 PM

IND72

Charles L Thomas, Eugene, OR.
The proposed 235 mile long, 100 ft wide cleared pathway would devastate 2838 acres of Oregon forests and farmlands, and damage water quality important for drinking, and fisheries habitat on some 379 streams and the estuaries that they empty into - all for the financial benefit of a Canadian company that was denied access in British Columbia. Since Washington & California have already denied it access it makes no sense to authorize it in Oregon. The pipeline should be denied in Oregon. IND72-1 IND72-2

IND72 Charles L. Thomas, Eugene, OR

IND72-1 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND72-2 Comment noted.

IND73

Comments on the FERC Draft EIS on the Jordan Cove LNG Export Terminal and Pacific Connector Pipeline
Docket(s) CP13-483-000 and CP13-492-000

Tom Bender - tbender@nehalemtel.net - 38755 Reed Rd., Nehalem OR 97131
17 December 2014

• The Draft EIS is in VIOLATION of NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) Requirements. IND73-1

NEPA says:
"An EIS must examine all reasonable alternatives to the proposal. The emphasis is on what is "reasonable" rather than on whether the proponent or applicant wants, or is itself capable of carrying out, a particular alternative. Reasonable alternatives include those that are ***practical or feasible*** (emphasis in original) *from the technical and economic standpoint and using common sense, rather than simply* ***desirable*** (emphasis in original) *from the standpoint of the applicant." (CEQ 40?,' #2a).*

U.S. Environmental Protection Agency says:
"... the EIS should reflect not only the FERC's purpose, but also the broader public interest and need... ... we recommend discussing the proposed project in the context of the larger energy market, including existing export capacity and export capacity under application to the Department of Energy, and clearly describe how the need for the proposed action has been determined". (EPA Scoping comments for Jordan Cove, page 3)[i]

In spite of the above, FERC says:
"*FERC does not engage in regional planning exercises that would result in the selection of one terminal location over another. Instead,* ***it is the Commission's policy to allow market forces to influence where LNG terminals should be situated*** .... " (emphasis provided) .. (DEIS, page 1-22)

The US Energy Information Administration has produced a map showing the existing natural gas infrastructure across our country:
http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/transcorr_map.html

FERC currently has before it 14 proposals for LNG export terminals in the U.S.
http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-proposed.pdf IND73-2

13 of the 14 proposals are logically located to take advantage of existing infrastructure, the sole exception being Jordan Cove. Jordan Cove is off the existing grid and would require major construction to expand the infrastructure.

Several questions come to mind:

Given that the other 13 export terminal proposals are certainly "reasonable

IND73 Tom Bender, Nehalem, OR

IND73-1 See chapter 3 for an assessment of alternatives. The EIS discloses the environmental effects. The Commission will use this information, as well as other studies, to determine if the Project is in the public interest.

IND73-2 Please see the analysis of alternative export terminals, existing and proposed, in chapter 3.

IND73 Continued, page 2 of 15

alternatives" to Jordan Cove, FERC's refusal to comparatively evaluate them as required by NEPA is a violation, and needs to be remedied. Aspects of the proposed Jordan Cove project site suggest that there probably could not be a WORSE choice for a terminal: IND73-2 Cont.

- Implementation of the Jordan Cove project would take place in an identified plate tectonics hazard zone with expected tsunami inundation of the site,
- The project's location directly in line with a public airport runway less than 1000 feet away, and subject to high winds, makes it extremely vulnerable to accidental airplane collision.
- THE ABOVE LOCATIONAL FACTORS ALSO MAKE IT EXTREMELY INVITING FOR A TERRORISM ATTACK, RELEASING THE ENERGY EQUIVALENT OF UP TO 160 HIROSHIMA ATOMIC BOMBS, WHICH WOULD INCINERATE MOST OF THE SURROUNDING COMMUNITIES,
- The site is subject to an overdue R-9.5 subduction quake,
- The project would require massive dredging in an already degraded estuary, IND73-3
- It would affect in excess of 300 streams classified as critical habitat for threatened salmonid species,
- It would require land use changes by the US Forest Service, Bureau of Land Management as well as other Federal agencies,
- The project would increase consumption of fossil fuels, worsening global warming and the negative climate effects, storms, sea-level rise, etc. which would affect the local area and the rest of the world.
- And it would affect hundreds of landowners,

Given the above, there is no evidence in the draft EIS of any public need great enough to justify undertaking such a project.

Further, and most importantly, FERC is required to address, but has not, whether or how any of the other 13 export terminal proposals could meet the established need (if any) with fewer environmental and social effects. IND73-4

• FERC's public interest determination in the Draft EIS is in error. It DOES NOT CONSIDER and EVALUATE the Project's NEGATIVE IMPACTS (above). The proposed Jordan Cove / Pacific Connector project is NOT IN THE PUBLIC INTEREST. And the Project would NOT be exporting LNG to Alaska or Hawaii as stated in their application. There is NO support for asserting a public need without analysis and comparison with alternatives such as renewable energy or improved IND73-5

IND73-3 See the response to IND1-4 concerning earthquake risks. Jordan Cove's analysis of various ports that it examined along the Pacific Coast of the Unites State can be found in section 10.3.4 of Resource Report 10, included with its May 21, 2013 application to the FERC. Jordan Cove's application in Docket No. CP13-483-000 is a public document that can be viewed in electronic format on the internet through the eLibrary system of the FERC's webpage (www.ferc.gov). As stated in section 3.3.1 of the DEIS, our detailed analysis of potential West Coast alternative ports was included in section 3.3 of our May 2009 FEIS for the original Jordan Cove LNG import proposal in Docket CP07-444-000. This document is also available for public viewing through the FERC webpage, Dredging is discussed in section 4.4.2.1. Effects on streams in section 4.4.2.2 and on fish that use those streams in section 4.6.2.3. See section 4.13 for an assessment of safety risks. Table 4.13.9.2-2 of the DEIS shows the various causes of outside force incidents on natural gas pipelines as recorded by the USDOT between 1994 and 2013. Included in these statistics is "intentional" damage, which would include an attack. As shown in table 4.13.9.2-2, there was one incident of intentional damage to natural gas pipelines during this time period, or 0.1 percent of all recorded incidents. Effects on property values are discussed in section 4.9.1.3.See the response to IND1-1 for climate warming.

IND73-4 See the analysis in chapter 3 for the reasons most of these terminals would not meet the objectives of this Project. Also see the discussion for Oregon LNG in 3.2.2.4, which the DEIS concludes would be an alternative. The effects of that proposal are being analyzed in a separate EIS.

IND73-5 The DEIS does not make any determination about public interest. See the response to IND1-6. The statement that the DEIS does not disclose any negative effects from the Project is highly inaccurate.

IND73 Continued, page 3 of 15

energy efficiency either in the US or possible export destinations. Definition of "public need" *by the applicant* is totally inadequate basis for approval. IND73-5 Cont.

Draft EIS Page 1-12 to 1-13 states:

1.3 PURPOSE AND NEED FOR THE PROPOSED PROJECT
***The purpose and need for the proposed Project**, as summarized below, **was defined by Jordan Cove and Pacific Connector in their applications to the FERC**…. … **The Commission bases its decision on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility**, … .*(emphasis provided)

According to Jordan Cove's application, the Project is a market-driven response to the increasing availability of competitively priced natural gas from western Canadian and Rocky Mountain sources, and robust international demand for natural gas...

Draft EIS Page 4-163 states:

Address Public Need
***To verify that the Pacific Connector pipeline has a public need, the applicant has applied for a Certificate of Public Convenience and Necessity from the FERC. A FERC Certificate would verify that the Project has a public need and provides significant public benefit**. Additionally, pursuant to the BLM's right-of-way regulations, the BLM would determine whether the pipeline project is in the public interest.* (emphasis provided)

Draft EIS Page 5-1 states:

5.0 CONCLUSIONS AND RECOMENDATIONS
5.1 SUMMARY OF THE STAFF'S ENVIRONMENTAL ANALYSIS
The conclusions presented in this draft EIS are those of the environmental staff of the FERC working in cooperation with the Coast Guard, EPA, COE, BLM, Reclamation, FWS, Forest Service, DOT, and DOE. We (i.e., the Commission's staff) ***conclude that construction and operation of the Project would result in some limited adverse environmental impacts**. However, most of these impacts **would be reduced to less-than-significant levels with the implementation of the applicants' proposed mitigation measures** and the additional measures we recommend in section 5.2…. … If the Project is found to be in the public interest and is constructed and operated in accordance with the recommended mitigation measures, **we conclude that it would be an environmentally acceptable action. Our conclusions are based on information provided by Jordan Cove and Pacific Connector**; analyses and field investigations by Commission staff; review of comments from federal, state, and local agencies; and input from public groups and individual citizens.* (emphasis provided)

• THE FOREIGN OWNED AND CONTROLLED PROJECT would be given the right of EMINENT DOMAIN over PRIVATE AMERICAN PROPERTY. IND73-6

IND73-6 See the response to IND1-5.

Eminent domain seizure can be used for **public benefit** only! If approved, the private and foreign owned PCGP would have the right to seize private property. Hundreds of Oregon landowners would get a one-time payment and then assume all the risk and devaluation of their property forever. **This is NOT public benefit**? There is no benefit to Americans in the higher energy costs that would result due to the proposed project. The gas that would enter the proposed Pacific Connector Gas Pipeline would all be used for export with profits going to foreign investors, and would aggravate global warming, creating negative public benefit world-wide. IND73-6 Cont.

• ALTERNATIVE proposed LNG terminals, pipeline routes, locations for worker camps, temporary work areas, etc. WERE NOT CONSIDERED FULLY IN THE Draft EIS. IND73-7

Draft EIS page ES-3 states:

ALTERNATIVES CONSIDERED
Alternatives considered in this EIS include the no action alternative, system alternatives, LNG terminal alternatives, pipeline route alternatives, and aboveground facilities alternatives. ***While denying Project approval would avoid the environmental impacts identified in this EIS, the objectives of the Project would not be met***... (emphasis provided)

We do not consider any of the proposed LNG export terminals on the Gulf Coast or East Coast of the United States to be reasonable or practicable alternatives to the Jordan Cove proposal, ***because they would not meet one of the main objectives of the Project (to establish an LNG export point on the West Coast)***. (emphasis provided)

Draft EIS page 3-1 states:

The FERC's evaluation criteria for selecting alternatives include whether they:
• are technically and economically feasible, reasonable, and practical;
• offer a significant environmental advantage over the proposed action; and
• have the ability to meet the objectives of the Project.

Here is one example of a West Coast LNG terminal alternative that FERC did not consider: IND73-8
http://www.australianoilcompany.com/uploads/2/9/0/6/2906597/2014.12.01_asx_release_aoc_to_pursue_development_of_usa_lng_project.pdf

• RULES and regulations are being OVERLOOKED by FERC and/or are being changed in order for the Jordan Cove project to obtain permits. THIS VIOLATES THE NEPA. IND73-9

The Coos Estuary is one of twenty-eight designated national estuarine reserve sites IND73-10

IND73 Continued, page 4 of 15

IND73-7 See the analysis in Chapter 3 for alternatives to this Project. Note the discussion for Oregon LNG in 3.2.2.4, which the DEIS concludes would be an alternative. The effects of the Oregon LNG and its associated pipeline are being analyzed in a separate EIS, the proposed extra work areas and other proposed facilities are addressed in that document.

IND73-8 The DEIS was published November 2014, the Australian Oil Company proposal that it was considering developing an LNG terminal was announced in December of 2015, which is more than a month after the DEIS went to print.

IND73-9 The opinion expressed in this comment is noted.

IND73-10 Dredging a shipping channel is not a violation of the law. The Estuary Restoration Act does not restrict dredging, it directs agencies to cooperate in restoration projects, which may include using dredged materials for wetland restoration and other beneficial uses. The channel has been dredged for decades, as have numerous other shipping channels been. The effects from dredging for this project are addressed in section 4.4.2.1.

set aside for protection, long-term research, water-quality monitoring, education and coastal stewardship. [ii]

The damage to the Coos Estuary from the proposed JCEP project would be significant because of extensive dredging, ballast water, invasive species and water quality impacts. [iii] IND73-10 Comt.

This would be a violation of the Estuary Restoration Act of 2000. [iv]

This Act is not even mentioned in the FERC Draft EIS.

In addition, Jordan Cove has gone to great links to change the local Ordinances and the Coos Bay Estuary Management Plan WITHOUT THE PUBLIC BEING MADE FULLY AWARE OF WHAT THEY WERE DOING. It would not be possible for Jordan Cove to obtain local land use permits without these changes. This violates the spirit and intent of the National Environmental Policy Act by limiting Project alternatives. IND73-11

• NEGATIVE IMPACTS TO LOCAL VITAL JOBS AND INDUSTRIES such as farming, ranching, timber harvesting, tourism, fishing, clamming, crabbing, oyster farming, real estate, transportation (land, water & air travel), and recreation were not fully considered in Draft EIS. The Project would cause job losses in our sustainable resource based industries. FERC RELIED ON JORDAN COVE'S FLAWED E-CON-ORTHEST STUDY WHICH DID NOT CONSIDER NEGATIVE IMPACTS. IND73-12

Draft EIS Page 4-719 states:
... However, if crabbing, clamming, angling, or scuba diving activities were to occur within the established security zones, ***those activities <u>would be required to cease and temporarily move out of the way</u>****. The Coast Guard and OSMB would continue to remind boaters of their obligation not to impede the deep draft ships, regardless of the cargo.* ***Passive fishing equipment, such as crab pots, would be permitted to remain within the security zone while an LNG vessel is present, though the attending crabbing vessels would be required to vacate*** *(Berg 2008).* (emphasis provided)

• NEGATIVE IMPACTS TO 400 WATERBODIES in Southern Oregon by the proposed project have not been fully analyzed and/or considered in the Draft EIS. FERC RELIED ON JORDAN COVE'S FLAWED STUDIES FOR DREDGING IMPACTS. IND73-13

The proposed Pacific Connector Gas Pipeline would cross hundreds of fish-bearing creeks, rivers and streams, as well as public and private lands, destroying ecosystems, Oregon forest and marine and wildlife habitat for the benefit of a foreign energy corporation. [v]

The pipeline, terminal, and shipping, will impact 32 species protected under the Endangered Species Act, (DEIS 5-14, 5-15) including 7 species of whales, 4 sea turtles, and 6 fish species. [vi]

IND73 Continued, page 5 of 15

IND73-11 Comment noted.

IND73-12 Section 4.9.1.4 discusses the Project effects on the economy and employment.

IND73-13 The DEIS discloses the number of waterbodies that would be crossed or impacted (see sections 4.4 and 4.6). See the recommendations that Pacific Connector filed stream crossing plans and designs before the end of the comment period.

Draft EIS page ES-7 states:

"The Pacific Connector pipeline would affect 400 waterbodies (some multiple times) within 19 fifth-order watersheds in six hydrological subbasins (Coos, Coquille, South Umpqua, Upper Rogue, Upper Klamath, and Lost River)"

Draft EIS page 4-381 states:

"…The construction of the pipeline would affect 400 waterbodies; … … Of the 400 waterbodies affected, 101 are perennial, 164 are intermittent, 128 are man-made ditches, 6 are stock ponds, and 1 is an estuary (Haynes Inlet in Coos Bay)."

• Negative impacts from all the proposed DREDGING in the Coos Estuary have not been analyzed properly in the EIS. THE DRAFT EIS LACKS A REQUIRED SECTION UNDER NEPA KNOWN AS THE "*AFFECTED ENVIRONMENT*". (A baseline)

Dredging sediments would negatively impact commercial oyster beds putting the entire industry at risk in Coos Bay and potentially destroying several Oyster companies. FERC has proposed dredging in Oct which is the worst month for the reproductive lifecycles of Olympia oysters. Proper testing of Coos Bay Tidal Mud sediments has not been completed properly. [vii] Influence of tidal action has also not been fully considered. IND73-14

Despite this, the Draft EIS Page 4-569 states:

"In Coos Bay, suspended sediment from dredging activity could affect shellfish, including clams and other filter feeders within the immediate vicinity and downstream of the access channel. The major commercial oyster-growing areas in the bay are upstream of the access channel. ***Therefore, dredging conducted by Jordan Cove should not adversely affect those commercial oyster beds.*** "(emphasis provided)

• There would be Negative impacts to Timber Operators and FOREST LANDS taken OUT OF PRODUCTION PERMANENTLY.

1) http://www.co.coos.or.us/Portals/0/Planning/PCPG%20Land%20Use%20Application/Testimony/Item%2017%20-%20Fred%20Messerle.pdf
2) http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20130710-5236

• Negative Impacts from INCREASED HYDRAULIC FRACKING necessary for Jordan Cove to proceed WAS NOT CONSIDERED in the Draft EIS. IND73-15

Exporting natural gas would increase the environmentally destructive practice of hydraulic fracturing (fracking), because without fracking there would be no excess gas

IND73 Continued, page 6 of 15

IND73-14 While there are no headings that say Affected Environment or Current Conditions, the current conditions are discussed at considerable length for each resource in chapter 4. For example, see the discussion on upland vegetation conditions on pages 4-28 through 4-48.

IND73-15 See the response to IND1-3.

IND73 Continued, page 7 of 15

to export.. [viii] Gas obtained by hydraulic fracturing of shale beds has recently been proven to not be commercially viable nor is it sustainable [ix] IND73-15 Cont.

• The Proposed Jordan Cove Project would INCREASE GREEN HOUSE GASES & negatively impact CLIMATE CHANGE.

The facilities' operations would increase pollution and greenhouse gas emissions, adding to our world's already existing climate crisis. [x]

The project would directly conflict with the *Pacific Coast Action Plan on Climate and Energy* signed on October 28, 2013, by Governor John Kitzhaber of Oregon, Governor Edmund G. Brown Jr. of California, Governor Jay Inslee of Washington and Premier Christy Clark of British Columbia, to jointly attack climate change by reducing greenhouse-gas emissions. [xi]

• Project would cause significant increases in AIR PARTICULATE POLLUTION and HEALTH PROBLEMS.

Particulate pollutants from the life cycle impact of this project would increase respiratory and immune health problems in the community. Children and elders are especially at risk. [xvii]

• Proposed project would increase hazards associated with a SUBDUCTION EARTHQUAKE AND TSUNAMI. Building the facility on 30+ feet of fill does not avoid the most significant problems. IND73-16

The LNG Terminal in Coos Bay would be built on unstable sand dunes, in an area overdue for an earthquake and tsunami, where OSU geologists have expressed alarm. The ill-conceived proposed JCEP project site is located in the Cascadia subduction zone. OSU geologists have determined there is a 40% probability of an earthquake/tsunami at this location within the next 50 years. [xii]

The DEIS does not consider multiple system failures like what happened in Fukushima. It totally avoids evaluation of possible airplane impact or terrorist attack with devices such as fuel-air bombs from airport runway approaches passing directly over the project site.

The Draft EIS on page 5-1 states:

"... Given the design of LNG vessels, their safety record, and implementation of the risk mitigation measures recommended in the Coast Guard's WSR, ***it is highly unlikely that LNG would be released from a vessel in transit in the waterway and there should not be any significant adverse impacts on environmental resources within the Zones of Concern****..."* (Emphasis provided)

IND73-16 As stated in section 4.2.1.4 of the DEIS, the Jordan Cove Terminal site would undergo extensive earthwork and site improvement. Jordan Cove is proposing to utilize dynamic compaction and/or roller compaction to improve shallow zones and compaction grouting for the deeper zones. The earthquake ground motions used for design of structures and evaluation of geotechnical conditions consider the probabilities of large earthquake occurring on the Cascadia Subduction Zone. See also the response to comment IND1-4.

IND73 Continued, page 8 of 15

• LNG HAZARDOUS BURN ZONES would impact thousands of people living in the Coos Bay Area. FERC listed the LNG vessels as non-jurisdictional facilities (DEIS page "i") and made NO PLANS TO PROTECT THE PUBLIC in the Draft EIS except for the Coast Guard's Water Suitability Report. IND73-17

16,922 people in the Coos Bay area would live in the LNG Hazard Zones of Concern. **(Draft EIS page 4-980)** LNG Safety and Security zones would negatively impact the entire lower Coos Bay. [xiii]
Persons up to a mile away from transiting LNG tankers would be at risk of receiving 2nd degree burns in 30 seconds should a LNG pool fire occur. [xiv]

The proposed facility would be in sight of the mall, schools, and our commercial airport. FERC has completely ignored this issue by making the LNG Vessels Non-Jurisdictional facilities.

Hazard Zones of Concerns are mentioned on **Draft EIS Page 4-977.** FERC has provided no Map in the current EIS of these Hazard Zone Areas. The Coast Guard's Water Suitability Report that ONLY addresses issues in the waterway has been determined by FERC to be sufficient for protecting LNG transits. There is no emergency response plan, no protection of the shoreline, no protection of the airways and NO PROTECTION (nor could there be one) IN THE EVENT OF AN EARTHQUAKE AND TSUNAMI

• PIPELINE HAZARD ZONES would impact thousands of people living in Southern Oregon that have little to no access to fire protection.

• Proposed LNG project places Southwest Oregon Regional AIRPORT, local AIR PILOTS, AND LOCAL COMMUNITIES AT EXTREME RISK. This risk is not analyzed in the Draft EIS nor is the risk to the public due to an airplane or terrorist attack hitting the LNG vessel and/or the facility. These hazards were NOT ADDRESSED IN THE DRAFT EIS. IND73-18

With the S.W. Oregon Regional Airport located directly across the Coos Bay and less than a mile from the proposed hazardous LNG facility, this would be an accident waiting to happen.

The project location violates Gas Industry (SIGTTO) guidelines for safe siting of LNG facilities. [xv]

Yet this is what FERC had to say about this issue:

Draft EIS page 4-843 states:

"As noted above, the passage of LNG vessels in the Coos Bay navigation channel is not expected to affect commercial air traffic at the airport. ***Therefore, we conclude that the Jordan Cove Project would have negligible impacts on air traffic***

IND73-17 The risks to human life and health are disclosed in section 4.13.2. Accidents that have occurred are discussed in that section. Worldwide, there are 23 LNG export (liquefaction) terminals, 58 import (regasification) terminals, and 224 LNG ships, altogether handling approximately 168 million metric tons of LNG every year. In the last 40 years 40 years there have been over 45,000 LNG carrier voyages, covering more than 100 million miles. According to the U.S. Department of Energy, over the life of the industry, eight marine incidents worldwide have resulted in spillage of LNG, with some hulls damaged due to cold fracture, but no cargo fires have occurred. Seven incidents not involving spillage were recorded, two from groundings, but with no significant cargo loss; that is, repairs were quickly made and leaks were avoided. There have been no LNG shipboard fatalities.

IND73-18 Our analysis of potential Project-related impacts on the Southwest Oregon Regional Airport in North Bend can be found in section 4.10.1.4 of the DEIS. In their December 17, 2009 Order Granting Authorizations under Section 3 of the Natural Gas Act and Issuing Certificates for the original Jordan Cove LNG import proposal in Docket No. CP07-444-000, the other four sitting Commissioners disagreed with and overruled Mr. Wellinghoff's dissent. In a letter to the Commission dated December 22, 2014, commenting on our November 2014 DEIS for this Project, the Southwest Oregon Regional Airport and Coos County Airport District stated that it "strongly concurs with (the) recommendation (in the DEIS for Jordan Cove to document consultations with the Federal Aviation Administration [FAA] and submit the results of studies before Project construction) and believes that the FAA process will assure that the Airport continues to operate safely and efficiently."

supporting local or regional businesses…" (emphasis provided)

What is at issue is NOT just potential impact on the airport from the terminal, which does exist, but far more importantly the impact of the airport proximity on the security of the terminal and of subsequent public hazard from accidental or intentional airborne impacts on the project. IND73-18 Cont.

• Project would negatively impact WATER SUPPLIES.

The enormous water resources required by the entire proposed project could compromise local water supplies. [xvi]

• TRANSPORTATION IMPACTS on the local Community HAVE NOT BEEN ANALYZED fully in the DEIS. Simpson Heights folks would receive massive traffic impacts (among other impacts). Yet without analyzing these impacts the Draft EIS makes a determination that there would be no adverse socioeconomic impacts. IND73-19

Draft EIS page 4-839 to 4-840 states:

"... However, the impact of using those satellite lots for worker parking was not discussed in detail in either Jordan Cove's May 2013 application to the FERC or in the DEA traffic analysis. Nor did the DEA traffic analysis take into account carpooling and the use of buses or rail to transport workers from the satellite parking lots to the Jordan Cove terminal during Project construction. Also, while the DEA traffic study was reviewed by ODOT, Jordan Cove did not document that it was reviewed by Coos County or the City of North Bend.
Therefore, we recommend that:
• Prior to construction, Jordan Cove should file with the Secretary, for review and approval by the Director of OEP, a revised Transportation Impact Analysis that addresses the use of off-site satellite parking lots, and the transportation of construction workers from those lots to the terminal by bus or rail. Jordan Cove should document that it provided copies of the revised study to the ODOT, Coos County, and City of North Bend, and file the comments of the agencies."

Despite the lack of data the Draft Page 4-1038 states:

"We conclude that the Project would not have significant adverse socioeconomic cumulative impacts*. Population increases from the influx of non-local workers would be less than the average population increases in the four affected counties during the period 2000 to 2012.* ***There is a large enough regional housing market to accommodate the out-of-town workers, and local community institutions or public services, including fire, police, hospitals, and schools should not be greatly stressed by the Project****, as explained in section 4.9.* ***When combined with other projects, the JCE & PCGP Project should have a beneficial effect on the regional economy."*** (emphasis provided)

IND73 Continued, page 9 of 15

IND73-19 One purpose of a DEIS is to identify what additional information and analysis is needed. This is then added to the FEIS and presented for public review. See the recommendation in section 4.10 1.2, on pages 4-839 and 840, that Jordan Cove file a revised transportation analysis for review and approval of OEP addressing parking and construction worker transportation from those lots to and from the construction site by bus or rail.

IND73 Continued, page 10 of 15

• Project would cause INCREASED ENERGY COSTS for Americans. These higher costs would cause LOSSES OF THOUSANDS OF JOBS IN AMERICAN MANUFACTURING. These impacts are NOT CONSIDERED IN THE SOCIOECONOMIC SECTION of the Draft EIS. IND1-20

Exporting LNG will increase the price of natural gas for consumers and manufacturers, and would cost jobs and create a financial burden in an already stressed American economy. [xviii]

More than 120 manufacturing projects valued at nearly $110 billion of economic investment including thousands of new jobs would be at risk. [xix]

The Department of Energy has determined that exporting natural gas could cause up to 1.2 million manufacturing jobs to be lost to overseas workers. [xx]

In contrast, the Jordan Cove Project would generate only 101 permanent full-time jobs for local workers. [xxi]

Rising natural gas prices would also mean increased usage of coal in power generation.[xxii]

• RENT AND HOUSING COSTS are predicted to INCREASE significantly during Construction causing RESIDENTS IN COOS COUNTY to PAY HIGHER RATES. Meanwhile, there are plans to give JORDAN COVE a 15-YEAR TAX BREAK. IND73-21

Higher Rent and Housing costs could significantly impact the local area as they have done in other areas where LNG terminals have been proposed. [xxiii] Local leaders have refused to listen to the facts and have made plans to give Jordan Cove a 15-year tax break. Tax Funds would be diverted into a private foundation with little public oversight. The money is likely to be squandered. The County's general fund would suffer as it would receive far less funds from Jordan Cove than if they paid taxes like everyone else does in the County.

• HIGH UNEMPLOYMENT AFTER THE CONSTRUCTION phase was not considered.

The Community would experience a construction boom/bust cycle and ultimately very few permanent jobs would be created for local people. [xxiv] IND73-22

Jordan Cove Project would generate only 101 permanent full-time jobs for local workers. [xxi]

IMPORTANT MAPS

IND73-20 A 2012 study by the Energy Information Administration (EIA) of the U.S. Department of Energy (DOE) stated: "…U.S. natural gas prices are projected to rise over the long run, even before considering the possibility of additional exports." Another 2012 study by NERA Economic Consultants for DOE found that the nation is "…projected to gain net economic benefits from allowing LNG exports."

IND73-21 Decisions by local governments to extend tax breaks are outside the scope of this FERC EIS.

IND73-22 Section 4.9 includes estimates of employment and taxes that would result from the project. Most jobs would be associated with construction. Table 4.9.1.4-2 estimates 145 direct jobs and 445 indirect jobs associated with operation of the terminal in Coos County. The pipeline is estimated to create about 9 permanent jobs (page 4-816). Tables in section 4.9 also disclose the number of construction jobs, which are considerably higher. As for the comparison with Malin, we are not aware of an LNG terminal having been built in Malin.

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Major U.S. Natural Gas Transportation Corridors Map, 2008
http://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngpipeline/transcorr_map.html

Major U.S. Shale Plays - Lower 48 States Map, 2009
http://www.eia.gov/oil_gas/rpd/shaleusa2.pdf

Existing FERC approved LNG Import/ Export terminals (FERC Map)
http://www.ferc.gov/industries/gas/indus-act/lng/exist-term.asp

Proposed North America LNG Export terminals (FERC Map)
http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-proposed.pdf

Potential North America LNG Export Terminals (FERC Map)
http://www.ferc.gov/industries/gas/indus-act/lng/lng-export-potential.pdf

Existing and Proposed **Alaska LNG Export** Terminals
http://www.ferc.gov/industries/gas/indus-act/lng/alaska.pdf
(Jordan Cove is not listed as a potental LNG exporter to Alaska.)

Existing and Proposed **Mexico LNG Import/ Export** terminals.
(**THESE WEST COAST LNG TERMINALS ARE CONVENIENTLY MISSED IN FERC'S MAPS**)
http://www.energy.ca.gov/lng/worldwide/maps/Mexico.pdf
(So when FERC states there are no West Coast LNG terminals - That is NOT TRUE. Mexico Terminals that are ALREADY BUILT could Export LNG.) IND73-23

[i] EPA Scoping comments for Jordan Cove, page 3[i]
http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20121029-5093

[ii] National Estuarine Research Reserve System (NERRS):
http://estuaries.noaa.gov/About/Default.aspx?ID=116

[iii] The proposed Jordan Cove LNG Export Project would dredge 5.6 million cubic yards of dredge material in order to build their LNG marine slip dock. The Pacific Connector Gas Pipeline would dredge an 8 foot by 3 foot trench for 2.4 miles in the Coos Estuary up into Haynes Inlet. The Port of Coos Bay has plans for an extensive deepening and widening of the shipping channel in the lower Coos Bay. Ballast water, invasive species and water quality impacts from the project could be significant.

[iv] The Estuary Restoration Act: http://www.era.noaa.gov/information/act.html

[v] Pacific Connector Gas Pipeline, LP application to FERC requesting a certificate of public

IND73-23 The EIS does not state that there are no West Coast terminals. See the discussion in section 3.2.2, this section states that there are 2 LNG facilities in Mexico and one in Alaska. It also discusses proposed terminals in Canada and the U.S.

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convenience & necessity authorizing the construction and operation of the Pacific Connector Gas Pipeline under CP13-
492. http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20130606-5000
PCGP Resource Report 1, page 60 states:

> *"The PCGP Project will affect 400 waterbodies (see Table 2A-2 and 2A-4 in Appendix*
> *2A). Of the 400 waterbodies affected, 101 are perennial, 164 are intermittent, 128 are*
> *ditches, 6 are stock ponds, and 1 is an estuary (Haynes Inlet in the Coos Bay Estuary)."*

PCGP Resource Report 1, Appendix 1, Table 1A-1, page 1 states:

> *"The PCGP Project's Coos Bay Water Route across Haynes Inlet requires the construction right-of-way to be 250 feet in width and TEWAs to be located in the bay."*

[vi] Biological Assessment for the Jordan Cove Energy and Pacific Connector Gas Pipeline Project. 9-2013.

[vii] "***Clammers ask state to refer Port of Coos Bay to the EPA***" By Thomas Moriarty, The World, March 1, 2014 http://theworldlink.com/news/local/clammers-ask-state-to-refer-port-of-coos-bay-to/article_78c2b286-a0dd-11e3-a9ab-001a4bcf887a.html

*[viii] "**Fracking by the Numbers – Key Impacts of Dirty Drilling at the State and National Level**" Executive Summary* by Elisabeth Ridlington – Frontier Group and John Rumpler Environment America Research & Policy Center; Environment America; Oct 2013; http://www.environmentamerica.org/sites/environment/files/reports/EA_FrackingNumbers_scrn.pdf

"***Methane and the greenhouse-gas footprint of natural gas from shale formations***" A letter – Robert W. Howarth, Renee Santoro and Anthony Ingraffea – Published April 12, 2011 http://journalistsresource.org/studies/environment/energy/natural-gas-hydrofracking-greenhouse/

[ix] "***Scientists Wary of Shale Oil and Gas as U.S. Energy Salvation***"; Oct. 28, 2013 http://www.sciencedaily.com/releases/2013/10/131028141516.htm

"***Gas Bubble Leaking, About to Burst***" by Richard Heinberg, originally published by Post Carbon Institute | Oct 22, 2012 - http://www.resilience.org/stories/2012-10-22/gas-bubble-leaking-about-to-burst

[x] "***Ignore climate change and 100m people will die by 2030, shocking new report claims***" by the Daily Mail Reporter / Published September 26, 2012 http://www.dailymail.co.uk/sciencetech/article-2208953/Shock-report-claims-100m-people-die-economic-growth-drop-3-2-2030-climate-change-ignored.html

"***Comparative Life-Cycle Air Emissions of Coal, Domestic Natural Gas, LNG, and SNG for Electricity Generation***"- Paulina Jaramillo; W. Michael Griffin; and H. Scott Matthews Civil and Environmental Engineering Department, Tepper School of Business, and Department of

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Engineering and Public Policy, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, Pennsylvania 15213-3890 – July 25, 2007
http://www.ce.cmu.edu/~gdrg/readings/2007/09/13/Jaramillo_ComparativeLCACoalNG.pdf

[xi] "***Pacific Coast Action Plan on Climate and Energy***"- Signed at San Francisco, California, on the occasion of the Fourth Annual Leaders Forum of the Pacific Coast Collaborative , October 28th 2013
http://blogs.seattletimes.com/politicsnorthwest/files/2013/10/PCC-climate-and-enegy-agreement.pdf

[xii] Oregon State University "***13-year Cascadia study complete – and earthquake risk looms large***" 08/01/2012 – Source Chris Goldfinger -
http://oregonstate.edu/ua/ncs/archives/2012/jul/13-year-cascadia-study-complete-%E2%80%93-and-earthquake-risk-looms-large
Study Link: *Turbidite Event History—Methods and Implications for Holocene Paleoseismicity of the Cascadia Subduction Zone* - By Chris Goldfinger, C. Hans Nelson, Ann E. Morey, Joel E. Johnson, Jason R. Patton, Eugene Karabanov, Julia Gutiérrez-Pastor, Andrew T. Eriksson, Eulàlia Gràcia, Gita Dunhill, Randolph J. Enkin, Audrey Dallimore, and Tracy Vallier -
http://pubs.usgs.gov/pp/pp1661f/

"Jordan Cove LNG terminal in Coos Bay: Five takeaways on earthquake and tsunami risks"
By Ted Sickinger – June 30, 2014
http://www.oregonlive.com/business/index.ssf/2014/06/post_209.html

[xiii] Coast Guard - LOR / WSR / WSA for Port of Coos Bay / Jordan Cove Energy Project:
https://homeport.uscg.mil/mycg/portal/ep/contentView.do?contentTypeId=2&contentId=63626&programId=12590&%20pageTypeId=16440&BV

> **NOTE:** The safety and security hazard zones the Coast Guard has proposed to impose will encompass the LNG vessel both while the vessel is moored and even when the LNG vessel is not moored. When the LNG vessel is at the docking facility there will be a 150 yard security zone around the vessel to include the entire terminal slip and when there is no LNG vessel moored, the security zone shall cover the entire terminal slip and extend 25-yards in the waterway. (CG-WSA page 2) In addition, the Coast Guard has also set a moving safety/security zone for the LNG tanker ship that extends 500-yards around the vessel but ends at the shoreline. No vessel may enter the safety /security zone without first obtaining permission from the Coast Guard Captain of the Port who resides in the Portland, OR office.

[xiv] "***U.S. DOE "Liquefied Natural Gas Safety Research - Report to Congress***" – May 2012
http://energy.gov/sites/prod/files/2013/03/f0/DOE_LNG_Safety_Research_Report_To_Congre.pdf
NOTE: 5kw/m2 is the heat flux level that causes 2nd degree burns on exposed skin in 30 seconds.
Distances found in the DOE Report to this heat flux level:
1920 meters = 1.193 miles
1652 meters = 1.027 miles

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1438 meters = .894 miles
http://citizensagainstlng.com/wp/wp-content/uploads/2014/06/Jordan-Cove-LNG-Tanker-Hazard-Zones-of-Concern.pdf

[xv] ***"Site Selection and Design for LNG Ports and Jetties, Information Paper No. 14"*** Society of International Gas Tanker and Terminal Operators Ltd., 2004, ISBN: 1 85609 129 5 / http://www.savepassamaquoddybay.org/documents/ferc/quoddy_bay_llc/ferc_pre-filing/interveners-comments/Godfrey%202006Mar8%20SIGTTO/QBLLC_SIGTTO_Violations.pdf

[xvi] Pacific Institute (June 2012) ***"Hydraulic Fracturing and Water Resources: Separating the Frack from the Fiction."*** http://pacinst.org/reports/fracking/full_report.pdf

Webber, E. (July 23rd, 2012) ***"Will Drought Cause the Next Blackout?"*** The New York Times.

[xvii] Dr. Joseph T Morgan Oct 9, 2012, testimony concerning pollutants and the JCEP project: http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20121018-5150

"Your Views: LNG plant poses too many health issues"
By Joseph T. Morgan M.D. – December 2, 2013
http://theworldlink.com/news/opinion/editorial/your-views-lng-plant-poses-too-many-health-issues/article_ad39db82-5b84-11e3-9a18-0019bb2963f4.html

"An Exploratory Study of Air Quality near Natural Gas Operations" - Peer-reviewed and accepted for publication by Human and Ecological Risk Assessment (November 9, 2012). Theo Colborn, Kim Schultz, Lucille Herrick, and Carol Kwiatkowski
http://www.endocrinedisruption.com/files/HERA12-137NGAirQualityManuscriptforwebwithfigures.pdf

[xviii] EIA ***"Effect of Increased Natural Gas Exports on Domestic Energy Markets"*** – Jan 2012:
http://energy.gov/sites/prod/files/2013/04/f0/fe_eia_lng.pdf

Representative Edward J. Markey (March 2012) ***"Drill Here, Sell There, Pay More: The Painful Price of Exporting Natural Gas."***
http://democrats.naturalresources.house.gov/sites/democrats.naturalresources.house.gov/files/2012-03-01__RPT_NGReport.pdf

"Exports of LNG May Raise U.S. Prices as Much as 54%, Agency Says"
- By Katarzyna Klimasinska – Jan 19, 2012 – Bloomberg:
http://www.bloomberg.com/news/2012-01-19/lng-exports-may-spur-higher-u-s-natural-gas-prices-report-says.html

[xix] Press Release - ***"America's Energy Advantage Files LNG Export Motion, Seeks Rulemaking on Public Interest Test"*** *Sept 18.*

IND73 Continued, page 15 of 15

2013 http://www.reuters.com/article/2013/09/18/de-americas-energy-idUSnPNCG82555+1e0+PRN20130918

[xx] Department of Energy NERA Study. 12-3-2012.

[xxi] DEIS 4-1037. 145 direct jobs, of which 70% would be local hires.

[xxii] "***With Rising Natural Gas Prices, Utilities Turn Back to Coal***" ; May 29, 2013
Sustainable Business.com News ;
http://www.sustainablebusiness.com/index.cfm/go/news.display/id/24926

U.S. Energy Information Administration – "***Natural gas generation lower than last year because of differences in relative fuel prices***" September 25, 2013; http://www.eia.gov/todayinenergy/detail.cfm?id=13111&src=email

[xxiii] "**Northwest B.C.'s LNG boom is already a bust for some – Heated economy drives up prices and drives out tenants"** (Video)
By Gordon Hoekstra, Vancouver Sun – October 27, 2014
http://www.vancouversun.com/business/energy/Northwest+boom+already+bust+some/10326811/story.html?__lsa=0882-6c5e

[xxiv] PCGP Resource Report 5, page 27 states:

> "... *Construction of the pipeline would involve an average monthly workforce of 1,400 workers with a projected peak of 1,844 workers in the middle of the second construction season. Operation of the proposed pipeline would require* ***five permanent employees.***"
> http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20130606-5000

JCEP Application to FERC page 28 states:

> "... *The Project will employ 150 permanent staff and* ***pay for 5 jobs in the community*** *such as Sheriff's deputies, firefighters, tugboat crews and emergency planners.*"
> http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20130521-4008

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IND74

Cynthia Care, Talent, OR.
This pipeline has been rejected in Washington, rejected in California, and should be rejected in Oregon. We Oregonians do NOT want to shoulder the risks that this pipeline will bring: earthquake catastrophe, water quality impact, recreational industry impact, and the warning of our waters due to the clearcuts along Oregon's mighty rivers and streams would be devastating to the salmon, which are already suffering! IND74-1
This pipeline is WRONG for Oregon. Using imminent domain to seize property for this project would be an insult and an outrage.

IND74 Cynthia Care, Talent, OR

IND74-1 Comment noted.

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IND75

John Kitzhaber
Governor, State of Oregon

Dear Governor Kitzhaber, Senators, Representative and Mr. Friedman,

We urge you to seek extension of the current 90-day comment period for public comment regarding the Federal Energy Regulatory Commission (FERC) Draft Environmental Impact Statement (DEIS) for the Jordan Cove Energy and Pacific Connector Pipeline Project.

The Jordan Cove and Pacific Connector project is massive in scale and comparable only to the construction of Interstate 5 through Oregon in scope and cost. The potential impacts to Oregon's forests, farms, landowners, rivers and climate are staggering.

Both the public and Oregon's state agencies deserve more time to review a project of this magnitude and to provide meaningful comments. IND75-1

Please convey my comments to the FERC concerning the DEIS comment period for the Jordan Cove Energy and Pacific Connector Pipeline Project. Tell FERC that 90 days is not enough time for the public to provide meaningful comments on such a large and complicated project with significant implications for Oregonians, Americans, our lands and waters, our climate and U.S. gas supplies.

The public should be given at least 120 days to digest and comment on this huge 5,000-page document.

Lastly please urge FERC provide an easy-to-use email address for accepting public comment. People should be able to directly email FERC rather than have to maneuver through the difficult and cumbersome comment form on the FERC website. IND75-2

Sincerely,

Forrest English
PO Box 595
Ashland, OR 97520

19273901723

IND75-3

IND75 Forrest English, Ashland, OR

IND75-1 The 90-day period to comment on the DEIS was not extended past February 13, 2015.

IND75-2 FERC accepted verbal and written comments at public open house meetings, and comments can be both mailed to the FERC or submitted electronically on the FERC website. The public has been provided ample opportunities to comment on the project. A FERC email address was not created for accepting comments.

IND75-3 This submittal contained 370 separate signed letters, the majority of which are identical or near-identical copies of this first letter. Identical letters and those with non-substantive differences, as well as other duplicate letters, have not been individually coded, and have been removed from this EIS appendix. Those letters that had substantial differences from this initial letter were coded separately within this submittal and are presented in this Appendix to the EIS. The complete filing, which contains all identical letters as well as all 370 signatures, can be accessed on the E-Library under accession number 20141219-5259.

20141219-5259 FERC PDF (Unofficial) 12/19/2014 12:40:50 PM

John Kitzhaber
Governor, State of Oregon

Dear Mr. Friedman, Governor Kitzhaber, Senators and Representative,

Please extend the current 90-day comment period for public comment regarding the Federal Energy Regulatory Commission (FERC) Draft Environmental Impact Statement (DEIS) for the Jordan Cove Energy and Pacific Connector Pipeline Project. IND75-4

I understand the DEIS claims all the impacts are easily mitigated. Although I doubt that is correct, even it if were correct, where are the bindable assurances that they WILL be mitigated? IND75-5

Such a large document requires time to analyze. WAY more than 90 days for someone like me who has an 80-hour a week job-- and not as a politician, bureaucrat, nor advocacy group employee.

This is far too important to do a rush job on

jim Wells
2115 W. 24th Ave.
Eugene, OR 97501

IND75 Jim Wells, Eugene, OR

IND75-4 The 90-day period to comment on the DEIS was not extended past February 13, 2015.

IND75-5 The EIS does not claim that all impacts would be "easily mitigated". The federal, state, and local permits would be contingent on the implementation of all permit requirements including mitigation.

20141219-5259 FERC PDF (Unofficial) 12/19/2014 12:40:50 PM

John Kitzhaber
Governor, State of Oregon

Dear Mr. Friedman, Governor Kitzhaber, Senators Merkley and Wyden, and Congressman Walden,

Under the current schedule, it will require me to tackle at least 60 pages every day to read the ~5000 page FERC DEIS for the proposed Jordan Cove Energy and Pacific Connector Pipeline Project - and that will leave me no time to comment on it.

We urge you to seek extension of the current 90-day comment period for public comment regarding it. Both the public and Oregon's state agencies deserve more time to review a project of this magnitude and to provide meaningful comments. IND75-6

Please convey my comments to the FERC concerning the DEIS comment period for the Jordan Cove Energy and Pacific Connector Pipeline Project. Tell FERC that 90 days is not enough time for the public to provide meaningful comments on such a large and complicated project with significant implications for Oregonians, Americans, our lands and waters, our climate and U.S. gas supplies.

Sincerely,

Doug Viner
Mechanical engineer
813 Leonard
Ashland, OR 97520

(541) 601-0055

IND75 Doug Viner, Ashland, OR

IND75-6 The 90-day period to comment on the DEIS was not extended past February 13, 2015.

20141219-5259 FERC PDF (Unofficial) 12/19/2014 12:40:50 PM

John Kitzhaber
Governor, State of Oregon

Dear Mr. Friedman, Governor Kitzhaber, Senators and Representative,

Please extend the current 90-day pubic comment period to 120 days.

We've been waiting years for this large complicated project with significant implications for Oregonians, Americans, our lands and waters, our climate and U.S. gas supplies to arrive and we require more time to digest the material and prepare for meaningful comment. IND75-7

Also, please add an easy-to-use email address for accepting public comment. People should be able to directly email FERC rather than have to maneuver through the difficult and cumbersome comment form on the FERC website. IND75-8

Sincerely,

Johanna Harman
411 Talent Ave, #1
Talent , OR 97540

IND75 Johanna Harman, Talent, OR

IND75-7 The 90-day period to comment on the DEIS was not extended past February 13, 2015.

IND75-8 FERC accepted verbal and written comments at public open house meetings, and comments can be both mailed to the FERC or submitted electronically on the FERC website. The public has been provided ample opportunities to comment on the project. A FERC email address was not created for accepting comments.

20141219-5259 FERC PDF (Unofficial) 12/19/2014 12:40:50 PM

John Kitzhaber
Governor, State of Oregon

Dear Mr. Friedman, Governor Kitzhaber, Senators and Representative,

I am appalled at the prospect of laying a pipeline across southern Oregon to export greenhouse gas producing fuel. Oregon should become a world leader in green energy, and fossil fuel should be banned from being used in or crossing the state boundaries. There are cleaner way to obtain the energy we need in Oregon. IND75-9
Robert L. Bezy, Ph.D.

We urge you to seek extension of the current 90-day comment period for public comment regarding the Federal Energy Regulatory Commission (FERC) Draft Environmental Impact Statement (DEIS) for the Jordan Cove Energy and Pacific Connector Pipeline Project.

The Jordan Cove and Pacific Connector project is massive in scale and comparable only to the construction of Interstate 5 through Oregon in scope and cost. The potential impacts to Oregon's forests, farms, landowners, rivers and climate are staggering.

Both the public and Oregon's state agencies deserve more time to review a project of this magnitude and to provide meaningful comments. IND75-10

Please convey my comments to the FERC concerning the DEIS comment period for the Jordan Cove Energy and Pacific Connector Pipeline Project. Tell FERC that 90 days is not enough time for the public to provide meaningful comments on such a large and complicated project with significant implications for Oregonians, Americans, our lands and waters, our climate and U.S. gas supplies.

The public should be given at least 120 days to digest and comment on this huge 5,000-page document.

Lastly please urge FERC to provide an easy-to-use email address for accepting public comment. People should be able to directly email FERC rather than have to maneuver through the difficult and cumbersome comment form on the FERC website. IND75-11

Sincerely,

Robert Bezy
475 Iowa St.
Ashland, OR 97520

541 4880569

IND75 Robert Bezy, Ashland, OR

IND75-9 Comment noted.

IND75-10 The 90-day period to comment on the DEIS was not extended past February 13, 2015.

IND75-11 FERC accepted verbal and written comments at public open house meetings, and comments can be both mailed to the FERC or submitted electronically on the FERC website. The public has been provided ample opportunities to comment on the project. A FERC email address was not created for accepting comments.

20141219-5259 FERC PDF (Unofficial) 12/19/2014 12:40:50 PM

John Kitzhaber
Governor, State of Oregon

Dear Mr. Friedman, Governor Kitzhaber, Senators and Representative,

***

The following message has been prewritten and we essentially agree with it's content. One question in our minds is this: If the pipeline isn't built, is it just going to be shipped by truck and/or rail anyway? If that is the case, I would like to see a good thorough comparason of long term dangers, expenses, and environmental impacts. IND75-12

Also, "if" the pipeline turns out to be the safest method and "if" that Liq natural Gas (LNG) is going to be extracted anyway, can't there be a better place to route the pipeline other than through Coos Bay? My understanding is that Coos Bay, North Bend, and that area is a good productive oyster and other fishery industry based area and any pipeline mishaps or transfer to ship mishaps could do a lot of long term damage to the oyster and fishing industry there. IND75-13

Thanks - Paul Howard and Stacy Drake
Corvallis, Oregon
***

We urge you to seek extension of the current 90-day comment period for public comment regarding the Federal Energy Regulatory Commission (FERC) Draft Environmental Impact Statement (DEIS) for the Jordan Cove Energy and Pacific Connector Pipeline Project.

The Jordan Cove and Pacific Connector project is massive in scale and comparable only to the construction of Interstate 5 through Oregon in scope and cost. The potential impacts to Oregon's forests, farms, landowners, rivers and climate are staggering.

Both the public and Oregon's state agencies deserve more time to review a project of this magnitude and to provide meaningful comments. IND75-14

Please convey my comments to the FERC concerning the DEIS comment period for the Jordan Cove Energy and Pacific Connector Pipeline Project. Tell FERC that 90 days is not enough time for the public to provide meaningful comments on such a large and complicated project with significant implications for Oregonians, Americans, our lands and waters, our climate and U.S. gas supplies.

The public should be given at least 120 days to digest and comment on this huge 5,000-page document.

Lastly please urge FERC to provide an easy-to-use email address for accepting public comment. People should be able to directly email FERC rather than have to maneuver through the difficult and cumbersome comment form on the FERC website. IND75-15

Sincerely, Paul Howard & Stacy Drake

IND75 Paul Howard, Stacy Drake, Corvallis, OR

IND75-12 We are not aware of any plans to transport the volume of natural gas required for the terminal to Coos Bay by truck or rail.

IND75-13 See chapter 3 for a discussion of alternatives to the proposed route.

IND75-14 The 90-day period to comment on the DEIS was not extended past February 13, 2015.

IND75-15 FERC accepted verbal and written comments at public open house meetings, and comments can be both mailed to the FERC or submitted electronically on the FERC website. The public has been provided ample opportunities to comment on the project. A FERC email address was not created for accepting comments.

20141219-5259 FERC PDF (Unofficial) 12/19/2014 12:40:50 PM

IND75 Continued, page 2 of 2

Corvallis, Oregon.

Paul Howard
Radiologic Technologist
2777 SW Wake Robin Place
2777 SW Wake Robin Place
Corvallis, OR 97333

(541)754-7826

20141222-0046 FERC PDF (Unofficial) 12/22/2014

IND76

12/14/14

Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street NE Room 1A
Washington, D.C. 20426

ORIGINAL

FILED
SECRETARY OF THE
COMMISSION

2014 DEC 22 A 11: 37

FEDERAL ENERGY
REGULATORY COMMISSION

Docket # CP13-492-000 PCGP Pacific Connector Pipeline Draft EIS

Docket # CP13-483-000 Jordan Cove Energy Project LNG Draft EIS

The environmental impacts of building the Pacific Connector Pipeline + operating the Jordan Cove Energy Project are unacceptable.

① The taking of private land through eminent domain will make the value of those lands decline. The clearing of a 95'-150' swath through 70 miles of public land and private farm and forest lands will disrupt many species protected under the endangered species act. It will disrupt BLM and Forest Service Management plans put in place to protect those very species. This will cause a permanent disruption of private sector use of lands and profits. IND76-1 IND76-2 IND76-3

IND76 Laura Dorbuck, Coos Bay, OR

IND76-1 Comment noted. See the response to IND1-5.

IND76-2 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND76-3 Impacts to threatened and endangered species is addressed in section 4.7 of the DEIS. Impacts on Federal lands is addressed in section 4.1 of the DEIS.

20141222-0046 FERC PDF (Unofficial) 12/22/2014

④ The potential for accidents while crossing 400 waterbodies, during the construction of the pipeline, is inevitable. That would cause environmental pollution to those waterways and damage to the fish, including endangered salmon, who reside in those water systems. IND76-4

⑤ Building the Jordan Cove Facility on unstable sand in a known earthquake and tsunami zone is an environmental disaster waiting to happen. This area is overdue for an earthquake. It's predicted to occur within the lifetime of the proposed facility. IND76-5

⑥ The health and safety of North Bend residents can't be overstated. They will be exposed to releases of particulates and sulfur dioxide on a daily basis. IND76-6

The health and safety risks of an explosion or fire at the Jordan Cove facility needs to be considered. IND76-7

⑧ The increased release of Carbon Dioxide into our atmosphere is bad for the global environment. The Jordan Cove plant will emit 2,100,000 metric tons of CO_2 every year. This will be the largest contributor in the State of Oregon (after the coal-fired plant in Boardman closes down in 2020) IND76-8

⑨ Unburned methane is more dangerous than carbon dioxide. It is an increased risk to the environment. Unburned methane is released IND76-9

IND76 Continued, page 2 of 3

IND76-4 See the discussion on stream crossings in section 4.6.

IND76-5 See the response to IND73-16.

IND76-6 Emissions from the Jordan Cove facility are disclosed in section 4.12.1.1. Table 4.12.1.1-6 gives the combined emissions from the terminal, power plant, marine vessels, and nearby major sources of SO2. For SO2 and other pollutants, total combined impacts are well below EPA's national ambient air quality standards.

IND76-7 Facility safety is addressed in section 4.13.

IND76-8 The plant would emit an estimated 1,538,170 tons per year, see table 4.12.2.4-2. The entire project, including the pipeline, vessels, compression stations, and other facilities, would add another 562,583 tons per year.

IND76-9 Comment noted.

20141222-0046 FERC PDF (Unofficial) 12/22/2014

at the fracking site and through supply chain leaks. IND76-9 Cont.
The IPCC assesses methane impact over 20 years as having a global warming potential 86 times greater than carbon dioxides.

(4) I live three miles downwind of the proposed Jordan Cove LNG project. The air pollutants that will be released on a daily basis and a potential explosion and fire will certainly impact my environment and affect my property values. IND76-10

There is nothing about this project that is good for the environment.

Respectfully submitted,

Laura Dorbeck
62085 Salal Rd
Coos Bay, Oregon 97420
541-888-6762

IND76 Continued, page 3 of 3

IND76-10 For SO_2 and other pollutants, total combined impacts are well below EPA's national ambient air quality standards. Refer to section 4.13.5 for a discussion or pipeline and terminal risks and the measures being implemented to reduce these risks.

20141222-0076 FERC PDF (Unofficial) 12/22/2014

IND77

ORIGINAL FILED SECRETARY OF THE COMMISSION

2014 DEC 22 P 1:01

FEDERAL ENERGY REGULATORY COMMISSION

Joseph Patrick Quinn
251 Wildcat Rd.
Camas Valley, OR
97416
541 445 2325
jquinn@jeffnet.org

OEP/DG2E/Gas 3
Jordan Cove Energy Project, L.P.
Docket NO. CP13-483-000
Pacific Connector Gas Pipeline, L.P.
Docket No. CP13-492-000
FERC/EIS-0256D

12/17/15
Dear FERC:

I write to request that FERC extend the filing period end date for comments (2/13/15) on its DEIS. As an "intervenor" (copy included) and a concerned individual whose home is not far from the proposed pipe line, I find that the very size and complexity of the DEIS for the Jordan Cove and Pacific Connector projects (doc. #'s CP13-483-000 AND CP13-492-000) might well preclude the kind of careful and detailed commentary that would be most helpful in judging the true environmental impact(s) of these proposals. I feel that an extension of the comment period from the current February, 2015 date to May or June of 2015 would, in my opinion, offer adequate time for a quality response and represent an inclination, by FERC, to place the safety and other concerns of individual citizens on a more equal footing with the commercial interests of the well financed, well staffed applicants. IND77-1

Thanking you in advance for your kind attention to this important matter, I remain

Yours truly,

Joseph Patrick (Pat) Quinn

IND77 Joseph Patrick Quinn, Camas Valley, OR

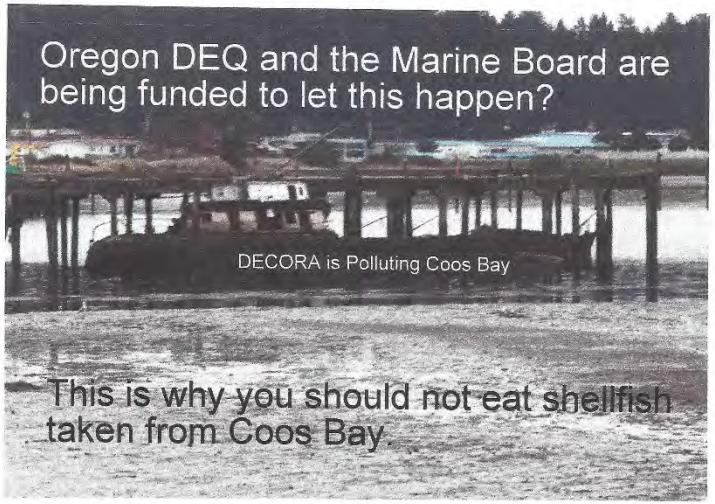
IND77-1 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

IND78 Anonymous

Please read the detailed account by OREGONLIVE

Whistleblower at Jordan Cove LNG-terminal site warns of contaminated soil.

Future for Coos Bay if Jordan Cove comes



Whistleblower at Jordan Cove LNG-terminal site warns of contaminat... http://blog.oregonlive.com/business_impact/print.html?entry=/2014/1...

OREGONLIVE

Whistleblower at Jordan Cove LNG-terminal site warns of contaminated soil

Jordan Cove

The Jordan Cove Energy Project, a $7 billion liquefied natural gas export proposal, plans to dredge 2.3 million cubic yards of material out of the North Spit of Coos Bay to accommodate its shipping berth. It plans to use resulting spoils to build massive berms that would elevate its gas liquefaction and power plants out of the tsunami inundation zone. The site is a former log sorting and waste disposal site for a closed paper mill, and a former environmental coordinator on the site says soil contamination issues are being ignored and swept under the rug. *(Courtesy of Jordan Cove)*

Ted Sickinger| tsickinger@oregonian.com By **Ted Sickinger| tsickinger@oregonian.com**
Email the author | Follow on Twitter
on December 19, 2014 at 5:01 AM, updated December 19, 2014 at 7:07 PM

A biologist and environmental inspector who worked at the site of the massive liquefied natural gas terminal proposed for Coos Bay told federal regulators this week that project engineers were ignoring and possibly hiding contaminated soil issues at the site.

Barbara Gimlin was employed by SHN Engineers & Geologists as a biologist and environmental compliance specialist on the **Jordan Cove Energy Project** from March 2013 to April 2014. She says she supports the project, but resigned as a matter of professional integrity after being ignored and reprimanded by supervisors when trying to take required compliance steps after contaminated soil was excavated, moved and reburied in a berm during testing. IND78-1

She aired her concerns in a public comment this week on the project's draft environmental impact statement with the Federal Energy Regulatory Commission. She claims the contamination issues were not disclosed in the federal environmental analysis, not reported to the Oregon Department of Environmental Quality until she blew the whistle, and could pose a hazard to the estuary and workers at the site.

The **FERC issued the draft environmental analysis in early November**, concluding that there were limited environmental impacts from the construction and operation of the terminal that could be mitigated to less than significant levels. IND78-2

Michael Hinrichs, a spokesman for Jordan Cove, declined on Thursday to answer specific questions that Gimlin's comments raised. But he said the contamination issues are well understood and were disclosed in the federal analysis, though he referenced a 2006 resource report that was based on limited testing at the north end of the site, and was filed well before Gimlin says the additional issues were discovered.

Jordan Cove is a massive project, and has garnered political support because of the economic development that its $7 billion investment could bring to an area of the state that has been economically depressed since the

1 of 4 12/20/2014 9:19 PM

IND78 Continued, page 2 of 5

IND78-1 See the supplemental information submitted by Jordan Cove Energy Project, L.P. under CP13-483-000 on Feb. 3, 2015. This Supplemental Information filing concerns JCEP's Ingram Yard Test Pile and Ground Improvement Project. It is comprised of a February 2, 2015 letter to JCEP from its contractor, SHN Consulting Engineers & Geologists, Inc. (SHN), and twelve attachments. The letter summarizes the chronology of activities for the test project, in particular as related to contaminated soils and a buried septic tank. This information will be included in the FEIS.

IND78-2 See the response to IND78-1 above.

IND78 Continued, page 3 of 5

1980s. Plans call for a natural gas liquefaction plant, shipping berth and power plant on the North Spit of Coos Bay, and a feeder pipeline that would stretch halfway across the state.

The liquefaction and shipping berth would be built on the site of a former log-sorting yard and mill waste disposal site for an old Weyerhaueser paper mill. The mill site itself would be home to the power plant.

Jordan Cove plans to dredge some 2.3 million cubic yards of material for its shipping berth on the Coos Bay channel, and use the spoils to build up massive earthen berms to elevate the liquefaction and power plants out of the tsunami inundation zone.

Gimlin told regulators that she discovered months after the fact that archeologists from Southern Oregon University had stopped cultural survey work in one area after discovering black soils that they deemed to be contaminated and unsafe to work in.

Gimlin says she was met with "subdued hostility" from her boss and told it was not her concern when she asked whether DEQ has been informed.

Contacted by The Oregonian, the head of the lab, Prof. Mark Tveskov, said the team did work around contaminated areas identified by SHN, though he doesn't remember abandoning work in any area and says his team is not responsible for identifying contaminated soils. Gimlin says she's quoting directly from reports prepared by the lab's team. She said Tveskov wasn't at the site much, and may be looking to protect a lucrative contract with SHN.

Jordan Cove site tour

Project backers provide a tour of the proposed site for the Jordan Cove LNG terminal in Coos Bay.

During the spring of 2014, the construction contractor, Kiewit, performed an exploratory test program at the site, and Gimlin says she was charged with overseeing environmental considerations. She said unidentified contaminated soils and sediment surfaced during excavations in an area that she had repeatedly been told was "clean fill" from previous channel dredging by the U.S. Army Corps of Engineers.jordan cove

Gimlin told regulators the potential contaminates included numerous black soils; bright yellow powder found in clumps of varying size; gray gummy material that was likely related to hydraulic drilling by a contractor; and the exposure of a concrete storage tank punched through by heavy equipment with an unknown, gray and foamy liquid inside that was 15 feet away from a temporary office trailer.

The storage tank, she said, was deemed to be an abandoned septic tank by her boss without being tested. The tank opening was covered with plywood and workers continued to park there and walk over it until Gimlin said she asked that it be cordoned off.

She said the archeologist hired to monitor Kiewit construction activities reported that his work boots were falling apart and the seams disintegrating. She said he also reported potential contaminates until he was pressured not to.

"While the potential contamination continued to be untested," Gimlin told regulators in her comment, "I became the problem instead. When I repeatedly reported concerns about ongoing discoveries and the process that needed to be followed, my efforts were repeatedly ignored most of the time, and I was told I didn't need to be involved."

She said she resigned in April after she contacted the primary DEQ person responsible for environmental cleanup at the site, Bill Mason, and learned he had not been informed of any of the contamination issues in the test program, and that the project's Unanticipated Hazardous Waste Discovery Plan had not been implemented.

"I was stunned, just flabbergasted to find out that the DEQ hadn't been contacted at all," she said Thursday. "It was inexcusable. Transparency and integrity were the two words that kept coming to mind, and they were totally lacking."

Mason, a senior groundwater hydrologist with DEQ, said "it is absolutely true" that the agency wasn't informed, and that it subsequently sent Jordan Cove DEQ a warning letter after discovering that the contaminated soil had been pushed into a berm, covered and reseeded.

Steve Donovan, Gimlin's boss at SHN, would not comment on his interactions with her, which he called an employee matter. He did acknowledge that the soils were excavated and moved without notifying DEQ.

"I'm not aurguing with DEQ that we should have notified them, and in the future we will notify them more promptly," Donovan said. But he went on to say that his identification of the septic tank was correct, that the contamination issues at the site are well understood, and that a work plan is already in place.

"It's not a big deal," he said.

In Gimlin's view, the feds' environmental analysis allows Jordan Cove to skirt around the soil-contamination issues. It states, for example, that there aren't contaminated soils at the Jordan Cove site, while acknowledging in the next breath that any contamination is below allowed thresholds.

The DEQ's Mason says he believes conditions at the site have been fairly well characterized in successive rounds of soil testing and that there will be a rigorously monitored work plan when and if site excavations gets underway. IND78-3

Gimlin dismisses that as wishful thinking. She says the DEQ lacks the budget and manpower to manage such a huge project, and is dependent on self-reporting. She believes there needs to be more testing at the site before excavations start.

IND78 Continued, page 4 of 5

IND78-3 See the response to comments IND78-1 and CO34-15.

IND78 Continued, page 5 of 5

"The DEQ is famous for not doing compliance monitoring," she said. "Whenever they did excavation work out there, they were turning up contaminants, so why wouldn't the entire site be contaminated?"

-- Ted Sickinger

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20141224-0042 FERC PDF (Unofficial) 12/24/2014

Dec 16, 2014

Kimberly Bose, Sec.
FERC

IND79

ORIGINAL

FILED
SECRETARY OF THE
COMMISSION

2014 DEC 24 P 12: 58

FEDERAL ENERGY
REGULATORY COMMISSION

CP13-483
CP13-492

Dear Kimberly,

I am writing to you because I am concerned about the LNG pipeline passing through Oregon from Coos Bay to Malin. My number one concern is that the proposed pipeline will pass through land that I co-own with many women. It is the Oregon Women's Land Trust land at mile post 86, OWLT is a non-profit organization. The path of the pipeline would clear cut a large swath through spotted OWL + old growth habitat. This is a known protected spotted Owl site + we hold this land for wildlife protection. This pipeline is unacceptable to us + many people of our Douglas County -

There are so many dangerous, difficult and crazy problems with this pipeline that it seems like an environmental nightmare. You are asking to condem property with eminent domain - A horrible idea even with reducing pipe diameter that would be less safe!

The pipeline company Veresen needs this pipeline to increase Fracking - a dangerous climate changing method of producing oil. This should be considered in the DEIS Fracking, leaks, methane burning will increase

IND79-1

IND79-2

IND79	**Jenna Crae, Roseburg, OR**
IND79-1	See the response to IND1-3.
IND79-2	See the response to IND1-2.

20141224-0042 FERC PDF (Unofficial) 12/24/2014

CO_2 – a green house gas that increases global warming and that is something we want to stop. IND79-2 Cont.

Also wild life as I mentioned will be impacted greatly – some 32 species that are protected under the Endangered Species Act will be affected. The several Rivers + streams that the pipeline crosses will be damaged in one way or another. IND79-3

I am also concerned about the terminal being built on unstable dunes with earthquacks tsunamis that probably will happen in the future. This one thing is insane. (also an airport is nearby) IND79-4

There is also the factor of increasing Gas prices with exporting the LNG on the world market + at the same time jobs would be lost to overseas markets while only 100 permanent jobs will be left for local people. IND79-5

I think this pipeline should be scrapped. It has too many Negative + damaging qualities to even consider.

Please reference these comments to 2 Dockets.
CP 13-483 and CP 13-492

Thanks for listening
Jemma T. Crae
6018 Coos Bay Wagon Rd.
Roseburg, Or 97471
(541) 679-4455

IND79 Continued, page 2 of 2

IND79-3 Effects to listed species are discussed in section 4.7.

IND79-4 See the response to IND73-16.

IND79-5 A 2012 study by the Energy Information Administration (EIA) of the U.S. Department of Energy (DOE) stated: "…U.S. natural gas prices are projected to rise over the long run, even before considering the possibility of additional exports." Another 2012 study by NERA Economic Consultants for DOE found that the nation is "…projected to gain net economic benefits from allowing LNG exports."

20141224-5005 FERC PDF (Unofficial) 12/23/2014 11:24:14 PM

IND80

Tim Ryan, Days Creek, OR.
I attended meetings in Roseburg and Canyonville, Oregon. I heard no significant comments on the fact that the gas has no odor. I believe in the name of safety the gas should have odor added at Malin. I know it costs money to add and remove odor. This boils down to a safety issue. If one life is spared, I believe it is worth the money. IND80-1

IND80 Tim Ryan, Days Creek, OR

IND80-1 Comment noted.

20141229-5000 FERC PDF (Unofficial) 12/26/2014 11:45:22 PM

IND81

Tim Ryan, Days Creek, OR.
At the DEIS hearings in Roseburg and Canyonville people brought up the fact that the pipeline people had voiced their concerns about terrorists attacking their pipeline. Some locations along the pipeline have only three feet of cover. With winter erosion and snow the pipeline could become exposed without anyone knowing. A logger taking a short cut with his D8 cat or a hunter practicing with his assault rifle could compromise the pipe. Trespassers with motorcycles or horses are also a concern. There is a real need for manned 24/7 security stations at about 50 mile intervals along the pipeline. This would go a long way in making people living along the line feel confident in the safety of the pipeline. IND81-1

IND81 Tim Ryan, Days Creek, OR

IND81-1 Comment noted.

20141229-5007 FERC PDF (Unofficial) 12/28/2014 4:26:15 PM

IND82

Sarah Shmigelsky, Eugene, OR.
I am writing to comment on the Jordan Cove LNG Terminal and Pipeline analysis. This analysis failed to consider that it could increase climate change problems, the impacts on preserving our natural resources and protecting rural communities. The Intergovernmental Panel on Climate Change (IPCC, 11-1-14 report) has determined that by 2050 we need to reduce reliance on fossil fuels by 80%. FERC has failed to consider if this project would fit into the reduction of using fossil fuels. As a Oregon Citizen I am highly concerned about this impact on our state and our world. In collaboration with groups working on these issues I present a major concerns related to this project. IND82-1

1) Natural gas is methane. Unburned methane can leak into the atmosphere during drilling and processing for LNG. Methane is a more potent greenhouse gas than burning coal. FERC has failed to consider these impacts of LNG. IND82-2

2) The stated Purpose and Need outlined by the company for this project ("Resource Report One") is to continue fracking and expand fracking. Since the Jordan Cove LNG export project will facilitate increased fracking, FERC should have considered the cumulative impacts of ongoing fracking on our environment. IND82-3

3) Safety is a hugh concern based on the likely hood of major earthquake and tsunami. FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area around Coos Bay. For instance, what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power failed, similar to what happened in Japan. IND82-4

4) How will it impact local landowners? FERC failed to consider the impacts of building the 230-mile long pipeline needed to feed the LNG Terminal. FERC has not considered the over 300 Oregon landowners who are facing eminent domain. FERC erroneously claims there is big "public interest" from this project, which will then give rights to a foreign company to condemn Oregon land for this pipeline. IND82-5

5) I am concerned about short and long term impacts on wildlife habitat. This project will clearcut a 100' swath through habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to consider the impacts to endangered wildlife that depend on these forests; like the spotted owl, marbled murrelet, and coho salmon. IND82-6

FERC should extend the comment period by 30 days to give the public time to weigh in and read the DEIS. This project is much to large to give so little time for public input. IND82-7

Thank you for accepting my comments.

IND82 Sarah Shmigelsky, Eugene, OR

IND82-1 See the response to IND1-1.

IND82-2 See the response to IND1-2.

IND82-3 See the response to IND1-3.

IND82-4 See the response to IND1-4.

IND82-5 See the response to IND1-6.

IND82-6 Impacts on old-growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND82-7 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20141229-5008 FERC PDF (Unofficial) 12/28/2014 5:06:46 PM

IND83

Jim Britton, Jacksonville, OR.
Dear Commissioners:
I recently spoke at the FERC meeting in Medford, Oregon. I oppose this project because of the huge risk for many with the benefits going to only a few wealthy Wall Street types. To take land from private citizens under public domain leaves me feeling like there is a fundamental misunderstanding about public good. Where possibly can the public be served by killing out forests and streams. Once built, the jobs argument falls flat. These are not the jobs that we need in the USA and specifically in Oregon. I say no to this high risk little gain project. I hope that you do too. Sincerely: Jim Britton Jacksonville, Or. IND83-1

IND83 Jim Britton, Jacksonville, OR

IND83-1 Comment noted.

20141229-5009 FERC PDF (Unofficial) 12/28/2014 9:01:35 PM

IND84

Ervin and Mitzi Sulffridge, Winston, OR.
This is regarding the proposed Pacific Connector Pipeline that would connect Malin to the proposed Jordan Cove Terminal in Coos Bay, traversing Klamath, Douglas, Jackson and Coos Counties.

To whom it may concern,

We searched for the perfect property to retire and live out our golden years and we finally found it approximately 30 years ago. It was bare land to begin with and we worked very hard to put in the road, electricity, water, sewer, and we built our home on top of the mountain with a huge front yard. We planted it all in small wood lot trees. I can look out my living room window and see lots of wild animals such as deer, turkeys, pheasants, quail, rabbits, red tailed hawks and even once saw a cow elk walking across my front yard one morning. I watch the yellow school bus meandering up Rice Creek to pick up the kids.
One day we heard a tap tap tap noise and looked out to see a man driving surveying stakes on our property all the way across our big yard. We told him to leave and he said he didn't have to, they had eminent domain. We have been fighting them ever since.

The proposed 100' swath with a 36" pressured pipe will come up our road and go across our front yard where our children, grandkids and great grandkids have picnics, graduation parties, birthdays and much more. They also have their swing set, trampoline; have a power wheel track where they ride their power wheels and bikes. We love to relax in the yard and watch the birds by day and star gaze by night. They also propose 2 big staging areas to be used while they are working.

We picked this property to build our home because of the high ridge and we can see the beautiful surrounding mountains. We were told our property was chosen because they like to stay on the ridges when they can. We have been told that after our property is torn up to put in the pipeline, they will put it back like it was.

How would you like your sweet babies to share their yard with a monster? I refer to the pipeline as a monster and I love my family far too much than to take the chance.

I propose to stop the use of my property via eminent domain for its use on the pipeline. IND84-1

Ervin and Mitzi Sulffridge
800 Honey Run Lane
Winston, OR 97496

IND84 Ervin and Mitzi Sulffridge, Winston, OR

IND84-1 Comment noted.

20141230-0036 FERC PDF (Unofficial) 12/30/2014

ORIGINAL

IND85

December 22, 2014

1025 Wildwood Way
Ashland OR 97520

FILED
SECRETARY OF THE
COMMISSION

2014 DEC 30 A 11:07

FEDERAL ENERGY
REGULATORY COMMISSION

Kimberly Bose, Secretary
FERC
888 First Street NE
Room 1A
Washington D.C. 20426

SUBJECT: Docket Numbers CP13-483 and CP13-492
Jordan Cove LNG Project

I am deeply concerned about the proposal to liquefy natural gas derived from fracking and to export it to Asia for many reasons, some of which are:

- Impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay
- Impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG terminal on over 300 Oregon landowners facing eminent domain, and on 42 miles of old-growth forest including endangered wildlife. (The project will clearcut a 100-foot wide swath of land.)
- Increased fracking (as stated in the company's Purpose and Need for this project) and the negative cumulative effects of fracking on the environment, as well as the fact that a percentage of methane (natural gas) leaks unburned into the atmosphere when drilling and processing LNG.

IND85 Kay Kendall, Ashland, OR

20141230-0036 FERC PDF (Unofficial) 12/30/2014 -2-

IND85-1 This project is dangerous and requires a great deal more research and consideration. Therefore, FERC should extend the comment period by at least 30 days to allow those who will be most affected to weigh in after studying the DEIS.

Thank you for your consideration.

Yours truly,
Kay Kendall

IND85 Continued, page 2 of 2

IND85-1 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20141230-5001 FERC PDF (Unofficial) 12/30/2014 12:26:10 AM

IND86

Ryan Navickas, Prospect, OR.
It is unreasonable that citizens of Oregon should accept the liability of having a gas pipeline running essentially through our backyards, crossing our waterways, farm, and forest lands without compensation. The proponents of this project say that it would create jobs. This is essentially a benefit to those who are temporarily employed in constructing the pipeline, and those who live in Coos Bay working at the terminal. The vast majority of Oregonians would see negligible benefit from this project but would live with the specter of insecurity at the threat of catastrophic leaks and explosions. While millions of dollars of worth of gas would flow through our state fueling industry in Asia and lining the pocketbooks of gas companies, Oregonians would suffer depreciated property values and daily fear for the safety of our children, our waterways, and fisheries. This project must not be allowed to proceed without just compensation to every resident of the state whose resources would be put at risk, that is to say each and every resident of the state. A reasonable, though modest, suggestion would be awarding free gas to every Oregon home and business forever. This would begin to compensate citizens for the inconvenience on their lives imposed by the gas companies. As we all know, gas supplies will not last forever. Why should domestic supplies be shipped overseas for private profiteers robbing future generations of accessible energy for life and livelihood? Compensation would allow families to begin to plan for the future, by investing in renewable energy sources like solar panels, while the government and energy industry neglect to do so. If this gas is to pass through Oregon we need guarantees that our energy future is secure. To allow this energy to pass away without securing renewable energy for our future would be irresponsible, like squandering the summer's harvest on lavish feasts while neglecting to consider winter's approach. Oregonians would not even get the feast, out of state companies would. The value of the imposition this pipeline places on Oregonians has been grossly underestimated. We the people must approve this use of our shared resource wholeheartedly with near consensus or it must not move forward. The offer before the citizens at this point is pathetic: no public good, all for private gain. IND86-1

IND86 Ryan Navickas, Prospect, OR

IND86-1 Comment noted.

20141230-5062 FERC PDF (Unofficial) 12/30/2014 10:54:50 AM

IND87

john stadter, Eugene, OR.
I am a business owner, employing more than 1300 people throughout Douglas, Coos and Lane counties. Moreover, I am a lifelong Oregonian with a keen interest in the welfare of the State.

I oppose the pipeline and do not believe you have taken into proper account the long term impact of the pipeline nor the full environmental and safety impacts of this project. IND87-1

Specifically I am steadfastly opposed to exporting precious fossil fuels out of the country for relatively short term economic gain by a few. To do so sacrifices our energy independence and the future of our children and grandchildren. It is just wrong.

Combine the above with the potential environmental/safety risks for a project that is really not necessary, or necessary only for profit, makes this project objectionable, in my opinion. I fear that FERC is more interested in supporting large energy companies than what is good for Oregon and the long term US economy.

IND87 John Stadter, Eugene, OR

IND87-1 Comment noted.

20141230-5079 FERC PDF (Unofficial) 12/30/2014 11:29:42 AM

IND88

Paul Ancell, Shady Cove, OR.
Good morning,
I am concerned about the Jordan Cove/Pacific Connector gas pipeline proposed to go through Oregon. This is a private, for profit project that should not be able to use eminent domain to transit private lands. If this project is so important and valuable to the builders, let them place the pipeline along existing roadways and other utility rights of way. It may cost more than the more direct proposed route, but would then avoid eminent domain, limit damage to some of the most pristine forest and wildlands left in the Pacific Northwest, and reduce the threat of leaks or environmental damage to some high priority, fish/wildlife habitat in the numerous streams and rivers along the route. IND88-1
Thanks.

IND88 Paul Ancell, Shady Cove, OR

IND88-1 Refer to section 3.4.1 for a discussion of the all highway alternative route.

20141231-5001 FERC PDF (Unofficial) 12/30/2014 5:33:11 PM

IND89

janet ievins, Talent, OR.
I was at the Medford hearing on the LNG pipeline to Jordan Cove project. Altho I did get a chance to speak, I would like to add these comments under 'what I should have said'.

I do believe that Oregon needs good jobs. I hear Williams Company is promising good jobs. But we know from the safety record of Williams--3 recent explosions on their existing pipelines and facilities--and from looking at other gas pipelines that such promises are always more than the company can or intends to deliver. Most jobs use labor imported from other states. The lasting jobs for Oregonians are few.

However, the lasting damages are permanent. After a forest is clear-cut for the pipeline, it does not regenerate. Grass will cover the scars, but the forest is gone. Our clear, cold streams depend on trees to shade the water. When the trees are gone, the water warms above what salmon need.

FERC has not addressed the whole picture. The gas to be delivered by pipeline comes from fracking in other states. FERC cannot say that fracking is beyond the scope of this environmental impact statement when Williams' stated purpose is to be able to expand fracking. Overall we must decrease our dependence on fossil fuels, not increase the rate at which we mine, dig and drill. So the whole picture must include climate change considerations. IND89-1

FERC has also failed to consider the impacts of the LNG terminal being built in an earthquake zone and a tsunami area. These are huge environmental issues and must be recognized and addressed. IND89-2

FERC has not considered safety standards for the pipeline itself. It has allowed lower safety standards for rural areas, threatening lives and property. People's lives are not to be a bargaining chip for corporate profits. IND89-3

FERC has not looked at the geology of the area. The plan is to place pipe under many bodies of water, but there are places where that won't be possible, due to the rock composition and formation. So the back-up plan will be to lay pipe under a river 1/2 at a time. This would cause great sediment issues. If huge machines are used to stir up the waters, this effect must be addressed by FERC. IND89-4

Additionally, since this project is only now coming to the attention of the public, the comment period--which includes a huge holiday--is insufficient. This large and complicated project would have significant import, not only for Oregonians but for our lands and waters, our climate and U.S. gas supplies. please extend the comment period from 90 days to at least 120. IND89-5

Thank you.

IND89 Janet Ievins, Talent, OR

IND89-1 See the response to IND1-3.

IND89-2 See the response to IND1-4.

IND89-3 See the response to IND1-7.

IND89-4 Special pipeline construction techniques are discussed in section 2.4.2.2 of the EIS. The rock composition and formation was a consideration in selecting the type of crossing technique.

IND89-5 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20150102-5005 FERC PDF (Unofficial) 1/1/2015 11:23:45 AM

IND90

J Kreuzer, Ashland, OR.
This pipeline is not a supported project. Do not send resources out of the country, do not build the pipeline across or under our lands, rivers, streams, and trails. Do not subject the people to the lack of foresight in the name of a quick fix to a larger problem. No Pipeline. No fossil fuel infrastructure- no more. IND90-1

IND90 J. Kreuzer, Ashland, OR

IND90-1 Comment noted.

20150102-5006 FERC PDF (Unofficial) 1/1/2015 12:58:17 PM

IND91

John & Arlene Stiff, Medford, OR.
Thursday, January 01, 2015

We are totally against the proposed LNG Pipeline here in Oregon. Just like the other proposed pipeline project, we will be providing two foreign companies with gas and oil that will only benefit them. The short time jobs that both projects will provide do not make up for the environmental disasters that could result from building huge pipelines across our country. IND91-1

We are endangering our environment, our wildlife, our natural resources and our enjoyment of our country wildernesses and/or farm lands, to satisfy the needs of foreign companies. Canada refused to build a pipeline of it's own across Canada to ports of its own to sell crude oil because of environmental concerns. Why are we refusing to do the same? Much as I love our neighbors to the North, we do not exist for their private companies benefits.

It is time that a US government agency do as it was mandated, protect American's best interests, instead of bowing down to short term job benefits. Long term environmental concerns are very serious issues, not to be put aside w/promises that private companies will protect us from long term damages. I don't trust private companies to do anything but put profits before everything else.

IND91 John & Arlene Stiff, Medford, OR

IND91-1 Comment noted.

20150102-5008 FERC PDF (Unofficial) 1/1/2015 2:24:04 PM

IND92

Gerald Notch, Central Point, OR.
I am writing to strongly oppose the proposed Jordan Cove LNG terminal and Pacific connector pipeline project now under consideration for a number of reasons. IND92-1
At a time when the catastrophic effects of increased burning of fossil fuels are in evidence everywhere around the globe, we should not be allowing projects that would only encourage more. We should instead vigorously regulate the price of burning carbon to more realistically reflect the true consequences of its use.
This is not a project that should be deemed as being "in the public good". This will benefit a select group of the wealthy, who are in the business of extracting the earth's resources for their own gain. Any short term increase in jobs would be grossly offset by the deleterious effects on our air and water quality and the permanent destruction of wilderness and rare species habitat. For this reason alone Eminent Domain should be off the table as a means to obtain access to constructing a pipeline.
The proponents of this project have to show how, in the light of overwhelming evidence of the negative effects of using fossil fuels for energy generation, this will be a benefit to the citizens of Southern Oregon, the United States and the World. IND92-2
I urge you in strongest way, to reject this proposal.
Thank you, Gerald Notch

IND92 Gerald Notch, Central Point, OR

IND92-1 Comment noted.

IND92-2 Comment noted.

20150102-5010 FERC PDF (Unofficial) 1/1/2015 6:35:14 PM

IND93

Mary S Neuendorf, Salem, OR.
FERC did not consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. As an eample, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. The result could be disastrous. IND93-1
The LNG tankers, cooling facility, power plant and holding tanks would be located in a tsunami inundation zone that also happens to be on a sand spit extremely susceptible to liquefaction and subsidence. Any accidents place a large part of North Bend at great risk.
Construction of the pipeline would have substantial impacts to water quality at stream crossings through trenches in the stream, sediment from the cleared pipeline route, and the removal of important stream-side forests. Clean cold water is critical for the salmon that define our region, and the direct pipeline impacts as well as a warming climate accelerated by gas exports threaten would threaten that legacy.
Pipeline construction and the 230-mile linear clearcut would have major impacts to public forests managed by the US Forest Service and the Bureau of Land Management, and the species that depend on them.
Thhe town of North Bend would be squarely in the risk zone from LNG storage at the terminal. In 2014 alone, Williams Company (the one that would build and maintain the Pacific Connector pipeline) has had 3 gas facilities or pipelines explode causing severe damage to property and great risk to human lives. What could happen in North Bend?
Because the Pacific Connector Pipeline would primarily travel through rural areas, safety standards for the 36" pipeline are downgraded. The would threaten private property, public lands and many lives along the way.
Landowners would face the use of eminent domain. Private property for the benefit of a foreign energy company is not a proper use of eminent domain.
article).
This project will clearcut a 95' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND93-2
FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND93-3

IND93 Mary S. Neuendorf, Salem, OR

IND93-1 See the response to IND1-4.

IND93-2 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND93-3 See the response to IND1-7.

20150105-5007 FERC PDF (Unofficial) 1/3/2015 2:35:45 PM

IND94

Frances Rominski, Portland, OR.
I am deeply concerned with the project listed in the above docket numbers. I have been a long time supporter of environmental causes, of Oregon's commitment to the environment and of a democratic process for determining what projects are worthy of government approval and of requisite lowest possible impact on the environment. I fear that FERC has overlooked a number of very important points.

In particular, the proposed pipe line will pass through land owned by the Oregon Women's Land Trust and OWL Farm. I was one of the first supporters of this land and have continued to be so for all of its existence. The purpose of the land is to protect the land, trees and wildlife and provided refuge and education for women. The proposed pipeline flies directly in the face of these goals. IND94-1

FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. FERC failed to consider impacts to the Oregon Women's Land Trust land and over 300 other Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. In fact, there is substantial, credible public opposition against this project. IND94-2

Furthermore, FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND94-3

This project will clearcut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests as well as forests protected on private land such as Oregon Women's Land Trust. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND94-4

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000 page DEIS. This project is too big to give so little time for public input. IND94-5

_____

IND94 Frances Rominski, Portland, OR

IND94-1 Comment noted. See section 3.4.2.7 for a discussion of alternatives for crossing the Oregon Women's Land Trust.

IND94-2 For eminent domain see the response to IND1-5. See section 3.4.2.7 for a discussion of alternatives for crossing the Oregon Women's Land Trust.

IND94-3 See the response to IND1-7.

IND94-4 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND94-5 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20150105-5008 FERC PDF (Unofficial) 1/3/2015 3:43:06 PM

IND95

Gail Roudebush, Portland, OR.
I am deeply concerned with the project listed in the above docket numbers. I have been a longtime supporter of environmental causes, of Oregon's commitment to the environment and of a democratic process for determining what projects are worthy of government approval and of requisite lowest possible impact on the environment. I fear that FERC has overlooked a number of very important points.

In particular, the proposed pipe line will pass through land owned by the Oregon Women's Land Trust and OWL Farm. I a supporter of this land and am deeply committed to its mission. The purpose of the land is to protect the land, trees and wildlife and provided refuge and education for women. The proposed pipeline flies directly in the face of these goals. IND95-1

FERC failed to consider the impacts of the 230-mile long pipeline needed to feed the Coos Bay LNG Terminal. FERC failed to consider impacts to the Oregon Women's Land Trust land and over 300 other Oregon landowners who are facing eminent domain. FERC erroneously claims there is such a big "public interest" from this project, FERC will give the right to a foreign company to condemn Oregon land for their pipeline. In fact, there is substantial, credible public opposition against this project. IND95-2

Furthermore, FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND95-3

This project will clear cut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests as well as forests protected on private land such as Oregon Women's Land Trust. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND95-4

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000 page DEIS. This project is too big to give so little time for public input. IND95-5

IND95 Gail Roudenbush, Portland, OR

IND95-1 Comment noted. See section 3.4.2.7 for a discussion of alternatives for crossing the Oregon Women's Land Trust.

IND95-2 For eminent domain see the response to IND1-5. See section 3.4.2.7 for a discussion of alternatives for crossing the Oregon Women's Land Trust.

IND95-3 See the response to IND1-7.

IND95-4 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND95-5 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20150106-5005 FERC PDF (Unofficial) 1/5/2015 8:32:49 PM

IND96

John Dailey, Medford, OR.
John Dailey
2673 Oak View Circle
Medford OR 97504
January 5, 2015

Federal Energy Regulatory Commission
888 First Street, NE
Washington DC 20426
Via eComment

RE: Jordan Cove Liquefaction and Pacific Connector Pipeline Projects
(Docket Nos. CP13-483-000 and CP13-492-000)

Commissioners:

There is a lot of noisy opposition to the Jordan Cove and Pacific Connector projects. Most of the arguments I have seen are factually or logically challenged or both. I am writing because I suspect most people do or would support these projects if considered on their merits.

I support both projects for a number of reasons. Southern Oregon is a lovely place to live. It has a pleasant climate, open space and friendly people. One thing it does not have, however, is a local source of fossil fuels. Having a large natural gas pipeline in the neighborhood with local access adds measurably to living securely in the Rogue Valley. IND96-1

All of the counties affected by these projects have been on the federal government dole since timber harvests and associated county revenues ended. The jobs and ad valorem taxes generated by these projects will help stabilize and restore the finances of these counties.

One argument frequently made by the opposition is that we should not export "our" natural gas because those foreigners will (a) just burn it and cause global warming or (b) drive up the cost of domestic natural gas. Resources available to an economy get consumed in quantities that tend to equalize the marginal benefit and the marginal cost. In plain language this means if natural gas is $2.00 per MCF, it will be consumed in any use that will produce $2.00 benefit to the user. If we politically limit the distribution of natural gas, more of it will be consumed in less valuable applications. Don't forget we owe the Chinese trillions, natural gas is a way to pay them off.

Finally, some of those schemin' and connivin' Canadians behind this project are in-laws, so lighten up, eh.

I know your consideration of these projects will be thoughtful, deliberate and objective. Thank you for your service.

Sincerely,
John Dailey

IND96 John Dailey, Medford, OR

IND96-1 Comment noted.

20150106-5005 FERC PDF (Unofficial) 1/5/2015 8:32:49 PM

IND96 Continued, page 2 of 2

Cc:
Senator Ron Wyden
221 Dirksen Senate Office Bldg
Washington DC 20510

Senator Jeff Merkley
313 Hart Senate Office Bldg
Washington DC 20510

Representative Greg Walden
2185 Rayburn House Office Bldg
Washington DC 20515

Representative Peter DeFazio
2134 Rayburn House Office Bldg
Washington DC 20515

20150106-5119 FERC PDF (Unofficial) 1/6/2015 2:54:40 PM

IND97

Terry Brown, Talent, OR.
I am adamantly opposed to the construction of the Jordan Cove LNP pipeline through southern Oregon for the following reasons: IND97-1

1)It is insane to consider sacrificing the beauty of our environment and the inherent hazards of such a pipeline that is to benefit a foreign entity. THE PROJECT DOES NOT BENEFIT OREGONIAN"S BEST INTEREST!!!

2) It is claimed that jobs will be created. Labor statistics indicated that that is greatly exaggerated and that the jobs are only short term. Most of the laborers will be Canadians? IND97-2

3)This pipeline is for a Canadian Company that will utilize eminent domain to secure its objective. WHAT AN OUTRAGE!!

4)The entire project will be situated in a tenuous area of with the potential of severe earthquake damage from the Cascadia subduction plate and the resultant tsunami threatening the proposed plant in Coos Bay.

5) How can we risk Oregon's magnificent natural beauty to enrich a foreign corporation who currently have several current pending lawsuits due to failures of previous projects, i.e. explosions and leaking pipelines?

6) At a time when CO2 emissions and pollution on the planet needs to be drastically curtail this project would only increase the emissions problem exponentially.

7) This LNP is to be transported to Asia for their use in manufacturing, etc. which threatens any continued economic recovery here in the U.S.

STOP THE INSANITY OF THIS PROPOSAL!!! DO NOT APPROVE THE APPLICATION FOR THE JORDAN COVE PIPELINE

Thank you,

Terry Brown

IND97 Terry Brown, Talent, OR

IND97-1 Comment noted.

IND97-2 The effects of the Project on jobs, including temporary jobs, is addressed in section 4.9.

20150107-5015 FERC PDF (Unofficial) 1/7/2015 1:01:44 AM

IND98

Tim Ryan, Days Creek, OR.
The final EIS should include a provision requiring the pipeline owners, before construction starts, to provide specialized equipment and training to all rural fire departments along the pipeline route so the first responders would be prepared to deal with any emergency that might arise during construction, commissioning and operation of the pipeline. I understand these departments should receive additional tax money once the pipeline is built and in operation but there is no money for training and equipment during construction, commissioning and the first years of operation. It would be a disaster if something should happen in regards to the pipeline before the first responders are adequately equipped and trained to deal with the problem. This could turn a small problem into a disaster. IND98-1
I reviewed the safety record of pipelines in the United States and, though good, it is by no means excellent when you consider there was at least 26 major problems with pipelines in the U S in 2014 alone.

IND98 Tim Ryan, Days Creek, OR

IND98-1 The DEIS addresses impacts the Pacific Connector pipeline may have on local fire departments in section 4.9.2.6. That section indicated that Pacific Connector has produced an Emergency Response Plan, a Fire Prevention and Suppression Plan, and a Safety and Security Plan. In addition, DOT safety regulations require the pipeline company to coordinate with local responders. Pacific Connector would provide appropriate training to local emergency service providers before putting the pipeline into service. Safety measures that would minimize risks of fires in forested lands are discussed in section 4.13.9.1 of the DEIS. Off-highway vehicle (OHV) controls are discussed in section 4.8.1.2 of the DEIS. Furthermore, FERC is not proposing this Project, the applicants are; FERC is a federal regulator of the Project and the lead NEPA agency.

20150107-0009 FERC PDF (Unofficial) 01/07/2015

IND99

ORIGINAL

CP13-492
CP13-483

FILED
SECRETARY OF THE
COMMISSION

2015 JAN -7 A 11: 33

FEDERAL ENERGY
REGULATORY COMMISSION

872 Hillview Drive
Ashland OR 97520
January 1,2015

KIMBERLY D BOSE
SECRETARY FEDERAL ENERGY REGULATORY COMMISSION
888 FIRST ST NE ROOM 1A
WASHINGTON DC 20426

RE: LNG PIPE LINE

Please do not allow the LNG Pipeline to be laid between Canada and Coos Bay, Oregon. The pipeline is a very bad idea because of the possibility of explosions, the ruining of the forests, the displacement of wild animals, the contamination of the rivers and lakes and the taking of peoples lands. All of this so that the Big Oil Companies can continue to make billions of dollars. They will never admit that any damage will be done, nor will they clean up the contamination when it does happen. IND99-1

This project will NOT produce steady jobs for any American. The profits will be going into the already over paid CEO's of big companies.

The pipeline is not going to increase the gasoline and oil necessary for Americans but is schedules to be sent over seas.

If Canada is producing this oil on the Eastern seaboard why is the oil not being shipped from the Eastern Seaboard of Canada instead of being shipped or piped to Oregon to be shipped out of the country. IND99-2

PLEASE STOP THIS PIPELINE NOW.

Darlene Steffani

Darlene Steffani

IND99 Darlene Steffani, Ashland, OR

IND99-1 Comment noted.

IND99-2 The FERC cannot speculate as to the motives of a foreign government and has no authority over foreign governments. FERC's role in this process is to evaluate the application submitted to the FERC by the project's proponent.

20150107-0014 FERC PDF (Unofficial) 01/07/2015

IND100

12.29.14

REFERENCE: DOCKET # CP13-483
DOCKET # CP13-492

ORIGINAL

JERE C. ROSEMEYER
1350 HUGHES ST.
EUGENE, OR 97402

DEAR MS. BOSE –

I AM OPPOSED TO THE CONSTRUCTION OF THE LNG FACILITY AT JORDAN COVE FOR THE FOLLOWING REASONS:

1) EARTHQUAKE & TSUNAMI DANGER – THIS FACILITY IS TO BE BUILT ON A SAND BASE. THIS IS COMPLETELY UNSUITABLE GIVEN THE NEAR INEVITABILITY OF A MAJOR EARTHQUAKE AND TSUNAMI IN THE CASCADIA SUBDUCTION ZONE DURING ITS LIFETIME. IF THE PLANT WERE TO TEAR OR EXPLODE (LIKE THE ONE IN PLYMOUTH, WASHINGTON) IT COULD IMPEDE THE ONLY NORTHBOUND HIGHWAY EXIT FROM THE COOS BAY/NORTHBEND AREA. IND100-1 IND100-2

2) PIPELINE LEAKS – THE PIPELINE FROM MALIN TO COOS BAY CROSSES MANY SENSITIVE AREAS. EVERY DAY THE SCIENTIFIC REPORTS HIGHLIGHT GREATER METHANE LEAKING FROM LNG PIPES AND RELATED EQUIPMENT.

3) GLOBAL CLIMATE WARMING – THE SCIENTIFIC CONSENSUS IS CLEAR THAT ALL NATIONS MUST BE MOVING SWIFTLY TO CAP FOSSIL FUEL EMISSIONS AND THEN REDUCE THEM. THIS ENTIRE PROJECT, EVEN IF IT FUNCTIONS FLAWLESSLY, WILL RESULT IN THE INCREASED EMISSION OF GREENHOUSE GASES. THE UNITED STATES MUST USE ITS RESOURCES TO HELP LESS DEVELOPED COUNTRIES REDUCE THEIR DEPENDENCE ON FOSSIL FUELS, NOT INCREASE IT. IND100-3

SINCERELY –

Jere C. Rosemeyer

FILED
SECRETARY OF THE
COMMISSION
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FEDERAL ENERGY
REGULATORY COMMISSION

IND100 Jere C. Rosemeyer, Eugene, OR

IND100-1 See the response to IND73-16.

IND100-2 See the response to IND1-2.

IND100-3 See the response to IND1-1.

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IND102

Emmalyn Garrett, Bandon, OR.
How deeply ironic that this project is requesting a 'certificate of public convenience and necessity authorizing the construction and operation of the Pacific Connector Gas Pipeline'. Both this pipeline and the export facility are highly dangerous and inconvenient to local residents, local watershed and wildlife health, and the health of the climate at large. This project has massive and potentially deadly impact on human and non-human lives.

It is irresponsible and dangerous for FERC to fail to consider the impacts of building a LNG terminal in the subduction and tsunami zone, fail to consider the impacts of a 230 mile pipeline on 300 Oregon landowners facing eminent domain, and fail to hold rural lives at the same value as urban ones by allowing lower safety standards in rural sections of the pipeline. The danger and inconvenience of this pipeline on local residents far out weighs the benefits to a foreign corporation in export of fracked natural gas. IND102-1

It is irresponsible and dangerous in an era of climate change to fail to consider the impacts of this pipeline on the climate from the original fracking used to obtain the gas, to the energy costs to transport and export, to the potential of leaking gas and methane, to the final greenhouse gas effects of the burned natural gas. IND102-2

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000 page DEIS. IND102-3

IND102 Emmalyn Garrett, Bandon, OR

IND102-1 See the response to IND1-4.

IND102-2 See the response to IND1-1.

IND102-3 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

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IND103

Mary Curtis, Ashland, OR.
Comments in opposition to Jordan LNG Pipeline
The proposed pipeline from Klamath Falls to Coos Bay, Oregon is a project that does not benefit the wider community as a whole, and that is its greatest fault. The greatest, long-term beneficiaries of the pipeline project are the Canadian company who owns it, and secondarily the less than 200 local residents who may or may not be hired for jobs with the transfer port. The pattern of other large-scale energy production projects is to hire the most qualified employees, and that pattern supports an influx of people who are not currently local residents. The idea that the US government (through FERC) would enact eminent domain to the benefit of a foreign-owned company is completely ludicrous! Eminent domain is only defensible if it benefits the general widespread community - to supply power or transportation conduits for example. To offer landowners a pittance in compensation for land worth exponentially more both economically and environmentally is inconceivable. Those one-time payments are insulting in the face of the billions that the foreign owners of the pipeline would receive over the life of the project. IND103-1

I am also concerned that the need for this pipeline is being inflated - the Draft Environmental Impact Statement states that the pipeline will not impact fossil fuel extraction in the future because increased extraction is not "reasonably forseeable" consequence of the project, yet the Department of Energy granted export permits to the foreign owners of the proposed pipeline (Jordan Cove) because of the project's ability to lead to increased natural gas extraction from shale formations! Even I can see the contradiction in these two opinions! And surely, such contradictions will make this project an easy target for lawsuits. IND103-2

Finally, I don't believe that FERC or Jordan Cove have taken seriously the adverse environmental impact of both the construction project and damage from potential breaches in the pipeline in the future. The proposed pipeline will cross (not go around, but CROSS) over 400 rivers and streams in southern Oregon. Several of those rivers are home to protected fish and aquatic species of value to communities that extend far beyond the pipeline's route. Some rivers the pipeline will go over, but some, as at the Rogue River in Trail, are proposed to be built underground. In what universe did someone think this would have negligible impact? Has anyone mapped natural spring input into the river at the proposed tunneling spot? What impact will this tunneling have on long term survival of endangered salmon? That area of the Rogue is part of the uppermost reach of spawning grounds for wild salmon! It is also a popular recreation area for fishermen and rafters. Has anyone calculated the economic loss to the local recreation industry during the pipeline construction? In addition, the pipeline is planned to cross through miles of stands of old growth forest - very few of which still exist in the west. Old growth. That means it doesn't regenerate in a short period of time. And the pipeline will create corridors through which many species will no longer be able or willing to cross. That will result in further fragmentation of habitat, and the possible loss of some ecologically important species. I won't even go into the long term detrimental impact IND103-3 IND103-4

of extracting natural gas from shale formations (fracking, groundwater contamination, excessive carbon emissions, ecological devastation, etc).

I believe this pipeline is a bad deal for landowners, a bad deal for the environment, and a bad deal for the citizens of Southern Oregon.

IND103 Mary Curtis, Ashland, OR

IND103-1 The Commission would make its finding of public benefit in its decision-document Project Order. The U.S. Congress decided to convey the power of eminent domain to private companies that receive a Certificate from the FERC when it passed section 7(h) of the NGA in 1947.

IND103-2 Comments about production from oil sands to produce natural gas are not related to the environmental impacts associated with this Project. It is the Department of Energy, not the FERC, that has regulates the U.S. Energy policy. See response to IND6-1 and IND1-3.

IND103-3 An assessment was completed for each proposed HDD crossing; based on these assessments, some HDD crossings were eliminated from consideration. These are presented in an appendix to resource report 3, which is available on FERC's e-library.

IND103-4 Impact to recreation are addressed in section 4.8.1 of the EIS, impact to socioeconomic conditions are addressed in section 4.9, while impacts to salmon are addressed in section 4.6.

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IND104

Karol Strane, Rogue River, OR.
Dear Federal Energy Regulatory Commission,

I am writing to ask for an extension for the case to build a 230 mile long LNG pipeline through Southern Oregon. The docket number is CP13-483-000 and it is called the Jordan Cove pipeline. IND104-1
Presently the date to stop collecting public comments is February 13, 2015. I ask this date be extended until at least June 13, 2015 because the Environmental Impact Statement is 5000 pages in length.
I have been poking around on the FERC website and you have your hands full with pipeline regulations. An extension on CP13-483-000 should be welcomed. Your annual budget of $315.6 million this year is spread out across regulatory agencies and filing fees. As a tax payer, I gladly incur any expense to the extension.
It looks like R-15-9, which is about "cost recovery for natural gas facilities modernization", of interstate natural gas pipelines, may have devastating effects on the state of Oregon, if it applies to foreign investors, and a pipe line that is for export only. My research continues, which only supports my request for the extension mentioned above.

Thank you,
Karol Strane

IND104 Karol Strane, Rogue River, OR

IND104-1 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

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IND105

Tom Hall, Medford, OR.
I fully support the construction and operation of this pipeline and facility. Please look past the individual and make the decision supporting this once great country of ours. Imagine if we went through this process to build the railroad and freeway system in our country. They would never have been built. It is best for ALL of us so please allow the pipeline and LNG facility to move forward. An added benefit - it is what's best for our earth from an environmental view point. Thanks. IND105-1

IND105 Tom Hall, Medford, OR

IND105-1 Comment noted.

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IND106

Tim Latendresse, Jacksonville, OR.
The Jordan Cove Energy Project (export terminal, power plant and 234 mile pipeline) will provide critically needed construction jobs (3300 plus at full buildup)for a period of nearly 4 years, as well as 150 plus permanent jobs, and creation of about 1000 indirect jobs. This will provide benefit the economically depressed area of Oregon's South Coast, as well as the state of Oregon, the Pacific Northwest, and nation in general. Additionally, a huge benefit will be created in the expansion and modernization of the Oregon International Port of Coos Bay, and other infrastructure improvements and expansions that will poise Coos Bay as an international energy center, and cause the port to be seen in a positive manner for future location and expansion of maritime facilities (such as creation of an intermodal container terminal in the future).

Please allow this incredible value-creating project to move forward. IND106-1

Thank you for the opportunity to voice my opinion in this matter....Tim.

IND106 Tim Latendresse, Jacksonville, OR

IND106-1 Comment noted.

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IND107

Submitted by

Jerry Havens
Distinguished Professor of Chemical Engineering
University of Arkansas

James Venart
Professor Emeritus of Mechanical Engineering
University of New Brunswick

Regarding the
Jordan Cove Export Terminal
Draft Environmental Impact Statement
Docket No. CP13-483

January 14, 2015

UNITED STATES LNG TERMINAL SAFE-SITING POLICY IS FAULTY

We have commented repeatedly to the Federal Energy Regulatory Commission (FERC) and the Department of Transportation (DOT) that we believe FERC is approving variances to the requirements of 49 CFR 193, Liquefied Natural Gas Facilities: Federal Safety Standards, that have not been subjected to adequate science based review and appear to provide inadequate fire and explosion exclusion zones to protect the public. IND107-1

This submission focuses on the Draft Environmental Impact Statement (DEIS) for the Jordan Cove Export (JCE) Terminal Project. We believe the JCE DEIS fails to provide for protection of the public from credible fire and explosion hazards. The conversion of the Jordan Cove facility for export, including provision of gas treatment technology utilizing mixed hydrocarbon refrigerants for liquefaction and removal of heavy hydrocarbons from the natural gas feed to the plant, presents hazards to the project more serious (on a unit weight basis) than with LNG. We believe these additional hazards have been discounted without sufficient scientific justification in spite of multiple international reports during the last decade of catastrophic accidents involving unconfined (hydrocarbon) vapor cloud explosions. It is clear that the increased hazards due to the presence of significant amounts of heavier-than-methane hydrocarbons, for which there is considerably more extensive research and accident experience than for LNG-ONLY projects, and which are "game-changing" in importance, have been seriously under-estimated in this DEIS. We believe the hazards attending the proposed operations at the Jordan Cove export facility could have the potential to rise, as a result of cascading events, to catastrophic levels that could cause the near-total and possibly total loss of the facility, including any LNG ship berthed there. Such an event could present serious hazards to the public well beyond the facility boundaries. IND107-2

We also believe there remains significant potential for cascading fire and explosion events attending "LNG only" storage and handling that have not been sufficiently addressed, particularly regarding the worst-possible case events that should be considered on the shore side storage tanks and marine side (ship related), either by accident or terrorist activity. Instead of considering the findings of extensive LNG Safety research conducted at the direction of Congress during the last decade that might influence the judgment of the acceptability (to the public) of the worst case IND107-3

1

IND107 Jerry Havens (University of Arkansas) and James Venart (University of New Brunswick)

IND107-1 Comment noted.

IND107-2 Section 4.13.2.1 discusses the loss of containment, vapor dispersion characteristics, flammability, and the ability to produce damaging overpressures associated with the pretreatment, the fractionation, and liquefaction at the proposed facility. In the hazard analyses, Jordan Cove used modeling softwares (PHAST 6.7 and FLACS 9.1) approved by the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) in October 2011. Section 4.13.5 discusses the results of the overpressure hazards pertaining to the pretreatment, the fractionation, and liquefaction at the proposed facility.

IND107-3 Staff analyzed the potential cascading events by reviewing equipment that may allow pressure buildup and subsequently be damaged due to potential fires and explosions. The discussion of cascading events can be found in Section 4.13.2.1 and 4.13.5.6. The discussion of LNG safety research at the direction of Congress is included in Sections 4.13.6.2 and 4.13.6.3.

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events that should be considered for this proposed terminal, the present JCE DEIS appears to largely ignore those findings. IND107-3 Cont'd

The JCE DEIS focuses principally on arguments directed to meeting the "letter" of the federal regulations governing a single index of public safety - mathematical modeled exclusion zones (safe separation distances) intended to keep the public out of harm's way. But this DEIS relies, for prediction of exclusion zone distances, on the use of mathematical models which have not been subjected to adequate (open for public inspection) validation requirements either by comparison with experimental data or independent scientific peer review. Furthermore, the calculations of the exclusion distances for vapor dispersion and vapor-cloud-explosion hazards do not provide any evidence of applicability in near calm conditions coupled with reliance on impermeable (concrete) vapor fences designed to retard vapor cloud travel. Until there is produced by the applicant meaningful evidence of the accuracy and applicability-for-purpose of these modeling techniques, and that information is made available for public evaluation and oversight, it must be considered that the potential hazards of storage, handling, and shipping of such massive quantities of energy as are involved in this project could have been seriously underestimated. IND107-4 IND107-5

The Jordan Cove Export Terminal DEIS Section 4 (Environmental Analysis), which contains the section on Reliability and Safety, comes to nearly twelve hundred pages, much of which is technically complex and therefore unlikely to be very helpful to the public. In view of shortcomings in the DEIS that we will identify, we believe it is particularly timely to summarize the hazards that require careful address for the proposed export terminal, as well as provide DOT and FERC with our independent assessment of the current state of scientific knowledge, including limitations thereof, upon which proper quantification of the risks and consequences of credible accidental or intentional events should be based.

We believe the present methodology of regulating LNG Terminal (import and export) hazards-to-the-public are overdue for careful review and assessment. During the brief (six-decade) history of LNG trans-ocean transport, LNG Storage and Handling Facilities have increased in size by an order of magnitude (factor 10). At the same time, it appears that the regulatory guidelines have not been continually reviewed and updated in consideration of extensive research programs required by Congress to better provide for public safety from LNG import terminals or the ships that service them. Most importantly, the regulations that are being applied to the proposed JCE Terminal appear to give only cursory attention to the additional hazards that will be involved by the proposed expansion of the terminal for export service. For this reason alone, we believe it is important for the public to consider "how we got here". We have prepared a short history of the development of the current LNG Facility Siting-for-Safety regulations which we believe would be helpful for all involved (public and regulators alike) to consider. However, in order to focus on the concerns that we believe require immediate address in the JCE Terminal DEIS, we have placed that historical appendix at the end of our comments. We recommend it to the reader. IND107-6

There is a rich history of experience with the hazards of hydrocarbon fuels and chemicals heavier than methane (the principal component of LNG). That history describes numerous catastrophic accidents involving complete destruction of plant facilities due to fire and explosion. In the present JCE DEIS, FERC appears to have accepted extensions of arguments previously prepared for the application to build the facility as an import terminal. However, as our history (appendix) shows, the regulations regarding approval of import terminals have in the past been guided by the premise that LNG, as methane, poses significantly lesser hazards than heavier hydrocarbons routinely handled in the petroleum industry. We do not disagree with this characterization. What we find disconcerting is the extent to which the "safety" characteristics of

2

IND107 Continued, page 2 of 27

IND107-4 FLACS and PHAST have been scientifically assessed, verified, and validated for modeling LNG vapor dispersion for siting purposes. The discussion of the models and approvals can be found in Section 4.13.5.3.

IND107-5 Section 4.13.5.3 discusses the vapor fences at the proposed facility. Jordan Cove used FLACS to predict the distance to the 1/2 LFL for the LNG and mixed refrigerant releases. Jordan Cove performed a wind speed sensitivity study to determine the longest downwind distance the vapor cloud could travel. FLACS is a 3-D CFD modeling software that allows the input of structures such as storage tanks, vessels, pipe racks, and vapor fences. Also, see response to IND107-4.

IND107-6 We recognize the new hazards associated with the liquefaction facilities and discussed them in Section 4.13.2.1. This section discusses the loss of containment of equipment that stores and handles refrigerants, vapor dispersion of toxic and flammable components, cascading events, and overpressures from confined and unconfined refrigerant vapor clouds. The discussion of LNG safety research at the direction of Congress is included in Sections 4.13.6.2 and 4.13.6.3.

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methane have been misunderstood (and misrepresented) as the industry has expanded; today involving extremely large volumes of LNG (energy) concentrated in storage and handling facilities. After all, methane is the prize fuel that it is in that it ignites easily and burns hotly and cleanly, and those attributes entail hazards that multiply with the amounts of fuel involved. Therefore, we believe that insufficient attention has been given to the potential magnitude of the hazards that accompany the large scale storage-and-handling LNG-ONLY operations now operating and planned. But, we want to make it clear that our more serious concerns relating to the JCE Terminal result from the combined storage and handling, in gaseous and liquid forms, of methane and heavier hydrocarbons including ethylene, propane, pentane, and amines in such large amounts. IND107-7

We believe the proposed JCE Terminal DEIS is a signal example of the (unwarranted) extent to which regulations designed for LNG-only handling facilities are being used as the basis for regulating large-scale projects involving heavier-than-methane hydrocarbon chemicals and fuels in volumes, particularly in combination, that involve significantly greater hazard potential than do import-only LNG terminals. With the current concerns for terrorist activity, and in view of the recent international experience of catastrophic accidental unconfined vapor cloud explosions of hydrocarbon fuels, it is time for a careful review. IND107-8

Volume of Hazardous Hydrocarbons Stored at the Proposed JCE Terminal

- Hazardous Materials Tank (s) Storage Volumes, gallons
  - LNG (2) – 89,662,000
  - Ethylene (1) – 14,000
  - Propane (1) – 15,670
  - Isopentane (1) – 31,030
  - Amine (1) – 17,205
- Hazardous Materials Design Spill Volumes and Spill Impoundment Volumes, gallons
  - LNG (2) – 89,662,000 – 112,338,200 (outer tank concrete wall)
  - 36-inch Ship Load Header (at dock) – 784,600 – 785,170 (concrete sump)
  - 36-inch Ship Load Header (at tanks) – 827,740 – 833,400 (concrete sump, shared)
  - 24-inch LNG Rundown Line – 71,980 – 833,400 (concrete sump, shared)
  - 6-inch Mixed Refrigerant Line – 61,060 – 833,400 (concrete sump, shared)
  - Ethylene Storage Tank – 14,000 – 43,935 (concrete sump, shared)
  - Propane Storage Tank – 15,670 – 43,935 (concrete sump, shared)
  - Isopentane Storage Tank – 31,030 – 43,395 (concrete sump, shared)
  - Amine Makeup Tank – 17,205 – 17,245 (concrete sump)

We focus on these large hazardous materials inventories, the "design" spills that are considered, and the estimation of potential consequences which determine the safety exclusion distances for fire and explosion hazards - to provide our summary assessment of the JCE DEIS.

FAILURE TO ADEQUATELY PROVIDE FOR PUBLIC SAFETY

The JCE Terminal DEIS issued by FERC concludes that the principal regulatory requirements of 49 CFR 193: *Liquefied Natural Gas Facilities: Federal Safety Standards* providing exclusion zones to protect the public from liquid pool fire, vapor cloud dispersion, and vapor cloud explosion hazards have been met satisfactorily (with FERC-stated actions required) by the applicant's submitted mathematical-model calculated exclusion distances.

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IND107 Continued, 3 of 27

IND107-7 The hazards associated with storage and handling of methane, heavier hydrocarbons including ethylene, propane, pentane, and amines are discussed in Sections 4.13.2.1 and 4.13.5.

IND107-8 The hazards associated with storage and handling of methane and other hazardous fluids are discussed in Sections 4.13.2.1 and 4.13.5.

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In our opinion, the DEIS-proposed approval of the JCE Terminal, in the absence of careful address of the concerns we describe below, will not provide for sufficient separation distances (exclusion zones) to protect the public from credible events, whether by accident or intentional act. However, our principal intent is not to engage in argument regarding the details of the methodology or the accuracy of the predictions submitted by Jordan Cove to calculate the exclusion distances (we do believe there are deficiencies in that regard because sufficient evidence of the accuracy and applicability of the mathematical models and model-inputs thereto has not been presented). Most importantly, we believe that the JCE DEIS has developed too rapidly, we suspect partly due to its evolvement from the DEIS previously submitted for approval as an import (only) terminal at the Coos Bay site, and as a result has become mired in the details of exclusion zone determination using theoretical models without proper recognition of the overall potential for catastrophic hazards that must be considered for operation as an export terminal. IND107-9 IND107-10

Our primary purpose in these comments is to state the following serious concerns which we believe require science-based adjudication prior to approval of this application-for-siting:

1. The current consequence-driven regulatory process (see appendix on history), which decides the acceptability of an LNG siting process by ensuring that the consequences of accidents will not extend offsite to affect the public), has developed similarly to that which forms the basis for nuclear plant siting approval – reliance on determination of so-called credible "design accidents" (here called "design spills") to determine the required exclusion distances (from the accident (spill) location) to the applicant's property line. The determination of these design accidents is a complex process which has developed *ad hoc*. Initially the design accident (release) was taken as the catastrophic release of the entire contents of the largest storage vessel on the site. It later was changed to the "guillotine" severance of the largest transfer line in the facility, with the release duration assumed to be ten minutes, or a shorter time if the applicant could demonstrate the ability to limit the spill duration (such as by incorporation of emergency shutdown procedures). There followed the adoption of a provision by which an alternative release rate and total amount (termed an "accidental leakage rate (ACR) spill") can be submitted by the applicant for approval. Such ACR spills are typically spills from smaller lines (such as branch or instrument lines) rather than the largest lines carrying the hazardous material. The regulation provisions now allow consideration of even smaller releases from "holes" in the selected lines. In our opinion these developments can only be understood as resulting from pressures on the applicants to seek approval of smaller and smaller required exclusion distance determinations. But the requirements placed on the applicant to demonstrate the probability or lack thereof of the different kinds of releases assumed for designation as an ACR are not sufficiently quantified – the process appears to be largely a "good-faith" decision reached jointly by the applicant and the DOT/FERC staffs. In our judgment this is not good science or engineering; it is indicative of regulation that facilitates facility approval – potentially at the expense of public safety. IND107-11
2. Further compromising the effectiveness of the current regulations for public safety, the system has become dependent upon modeling methods using IND107-12

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IND107 Continued, page 4 of 27

IND107-9 Staff reviewed the design proposed by Jordan Cove for adequate layers of protection and safeguards to reduce the risk of a potentially hazardous scenario from developing into an event that could impact the off-site public. These layers of protection include: control systems; safety-instrumented prevention systems; physical protection systems; site security measures; and on-site and off-site emergency response. In the event that these various layers of protection fail to prevent a release scenario from expanding, Jordan Cove performed hazard analyses that included vapor dispersions of flammable and toxic substances, thermal radiation from pool fires, and overpressures due to confined and unconfined vapor cloud explosions. Staff reviewed these hazard analyses and concluded they would not have a significant impact on public safety. In addition, see responses to IND107-11 through IND107-15.

IND107-10 The schedule and scope of the EIS analysis complies with all NEPA requirements and regulations.

IND107-11 Table 4.13.5.3-1 in the EIS shows the release hole sizes range from 2-inch to 36-inch for LNG scenarios. Table 4.13.5.3-2 shows the release hole sizes range from 2-inch to 5-inch for other hazardous fluids. Jordan Cove performed sensitivity analyses for hole sizes at each release location to determine the longest vapor dispersion distance. The methodolgies chosen by Jordan Cove for the design spills were reviewed by PHMSA staff and deemed to be appropriate for the specific design of the proposed facility.

IND107-12 See response to IND107-4.

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complex mathematical calculations (computer programs) that are not available to the public for independent evaluation of their applicability-for-purpose; we believe this prevents a basic public right-to-know. IND107-12 Cont'd

3. The calculations supporting the exclusion zone distance for the LNG "tanktop" fire chosen by the applicant as the controlling "design spill" fire do not consider potential cascading failure hazards to the public that could follow such a fire. We believe such failures have the potential to lead to structural failures of the LNG tank(s) which could lead to catastrophe. IND107-13

4. There are numerous potential hazards from fires and explosions that could result in cascading events involving the liquefaction trains at the facility as well as LNG ships berthed at the facility. We realize the ship is not FERC's responsibility; however, the worst-case hazard potential for the marine side of the proposed terminal should be considered before approval in view of the public concerns recently addressed in research required by Congress. IND107-14

5. The methods used to determine vapor-cloud exclusion zones, particularly the use of "mitigation" methods such as gas-impervious concrete fences to prevent advance of vapor clouds beyond the applicant's property lines, could increase the potential for serious, even catastrophic, vapor cloud explosions. The JCE Terminal DEIS appears to ignore international experiences of catastrophic unconfined vapor cloud explosions (UVCE), at least four of which occurred in the last decade, destroying the facilities involved as a result of cascading events. IND107-15

- **Design Spill Accident Selection**

The design spill specified for the ship's cargo unloading line for the Jordan Cove Export facility has been designated as a guillotine break of a 36 inch line with a ten minute duration spill of 827,740 gallons. Havens' 2009 review[1] of eleven LNG import terminal environmental impact statements indicates approvals for ship unloading line design spills ranging from 28,900 gallons (Keyspan, not approved) to 812,000 gallons (Trunkline, approved). FERC provided no quantitative justification for approving such large variations for these eleven spills, which resulted in large variations in the extent of vapor cloud exclusion zones. Since the vapor cloud zone determinations are directly related to the amount of LNG spilled, this lack of consistency in the design spills selected for analysis by the various applicants has the appearance of simply determining the size of the spill that the applicant's property line distance will allow. None of these widely varying approvals appear to have been supported by quantitative science-based analysis. IND107-16

The Jordan Cove Export (JCE) DEIS illustrates the potential for misunderstanding in the current design-spill-selection process. The JCE DEIS specifies a ship unloading line (SUL) spill of more than 827,000 gallons into a concrete impoundment basin. To our knowledge this JCE SUL spill is the largest specified by any terminal applicant to date. To the reader uninitiated in the complexities of this process, this choice of design spill might be viewed as conservative (assuming a worst case spill of nearly a million gallons of LNG). However, current scientific knowledge concerning such events ensures that the applicant would have no hope of guaranteeing that the vapor cloud from such a large spill could be maintained within their property boundary *without incorporating extreme*

[1]Havens, J., Consequence Analyses for Credible LNG Hazards, Second Annual AICHE/CSCHE Topical Conference, Montreal, Quebec, August 2009

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IND107 Continued, page 5 of 27

IND107-13 A recommendation has been included in Section 4.13.3 related to this issue.

IND107-14 See response to IND107-3.

IND107-15 While an unconfined heavy hydrocarbon vapor cloud may explode, overpressures from vapor cloud explosion are strongly dependent on the degree of congestion within the flammable cloud region. Jordan Cove assumed the ignition point would be in the most congested area. This assumption resulted in the longest distance to the 1/2-psig overpressure. The discussion of overpressures due to ignition of flammable vapor clouds and cascading effects can be found in Section 4.13.5.4.

IND107-16 The methodology to determine design spills are described in Section 4.13.5.2. In addition, the ship unloading/loading flow rates depend on the size and capacity of each facility.

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measures. The extreme measures proposed to contain the cloud on the JCE's property are vapor-impervious concrete fences, some forty feet tall, which prevent the advance of a vapor cloud in selected directions. We believe this provision could result in defeating the purpose of the exclusion zones for ensuring public safety - by introducing additional severe hazards of vapor cloud explosion.

There are other serious problems with the design spill quantities and vapor dispersion (vapor cloud formation) predictions. The vapor dispersion model predictions presented assume maximum wind speeds (presumably at 10 meters elevation) of 1-2 m/s. Near the ground (one to five meters elevation) the wind direction fluctuation (as well as the speed) is very uncertain in near-calm wind conditions. There are proven scientific reasons to expect that low-wind speed (near-calm) conditions combined with the high density stratification of the cold LNG vapor cloud near the spill can increase the potential for damaging vapor cloud explosions. In such conditions the advance of the LNG vapor cloud is determined primarily by gravity forces on the cloud; typical cloud advance speeds would be around one (or even a fraction of one) meter per second. As a consequence, mixing of LNG vapor with air would be exceptionally "slow", and some degree of partial "containment of the cloud" would result due to the vapor fences' holdup effect. Finally, we expect that since the fences do not surround the property (there are gaps where the gas could get through) it is likely that simulations of the vapor dispersion, even with the presently specified fences, might not predict containment of the flammable gas cloud boundaries at higher wind speeds. IND107-16 Cont'd

- **Vapor Dispersion Models are Proprietary and are not Available for Public Vetting**

The vapor dispersion models (also used for the damaging explosion-overpressure predictions) are not available for independent inspection or evaluation. While the models are presumably available to anyone requesting such services, the cost would probably be prohibitive to the public. This is a very significant development in government regulation policy; previously such models (DEGADIS and FEM3A) were available to the public at no cost. We believe this situation should be reviewed; it has the potential to undermine confidence in the entire process.

At least two new vapor dispersion models have been approved, for a total of four; DEGADIS, FEM3A, and two new ones, PHAST and FLACS. In contrast to DEGADIS and FEM3A, the development of which were paid for with public funds and which were (and still are) freely available for use and independent evaluation, the new models are privately held (proprietary), prohibitively expensive to the public, and they are not freely available for evaluation of applicability and accuracy. To our knowledge PHAST and FLACS are the only models which have been used since they were approved, and they are the only (vapor dispersion) models used for the preparation of the JCE Terminal DEIS. IND107-17

- **The Fire Radiation Design Spill Ignores the Potential for Severe Cascading Effects**

The controlling fire radiation exclusion zone distance calculated using LNGFIRE3 and presented in the JCE DEIS barely falls within the applicant's property boundaries. We believe that the application of the LNGFIRE3 model to such a tank-top scenario requires assumptions which are erroneous to describe the wind speed and flow patterns at the top of the tank and that these deficiencies could result in non-conservative predictions of exclusion zones. However, as we want to prioritize our concerns regarding hazards with severe (catastrophe) potential, we focus here on our concern that such a fire (tank-top), if it were to occur in a nearly full LNG tank, could burn for a protracted time period, perhaps twenty to thirty hours, and there would be no practicable way to extinguish it. IND107-18

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IND107-17 See response to IND107-04. Approval of alternative models is subject to the PHMSA.

IND107-18 See response to IND107-19 for validation of LNGFIRE3 and use for tank top fires. See response to IND107-13 for discussion of cascading failures.

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Professor Venart's study of this fire scenario raises serious questions regarding the possibility of massive failure of a full-containment LNG tank due to severe, long-term, fire heat exposure to the tank with such a fire atop it. We believe that if this Design Spill Fire is to be used to determine the fire-radiation exclusion zone, there must also be considered the potential for such a fire to cause catastrophic failure of the tank (or tanks), resulting in the rapid release (spill) of perhaps half a million gallons of burning LNG. Should that occur, the fire radiation distances from the earthen-berm tertiary containment provided would surely extend the estimated fire radiation exclusion zone requirements to provide for public safety well beyond the facility property lines, to say nothing of the potential for catastrophic damage to the entire facility. We present below excerpts from Venart's presentation to DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA)[2] that illustrate our concerns for cascading failures following such a tank-top-fire-scenario. IND107-18 Cont'd

Description of full-containment LNG tanks

- Very large – 80 > 90 meters diameter, 40 > 50 meters tall
- Post tensioned reinforced concrete, walls 0.7 m thick, roof 0.5 m thick
- Post tension; steel, vertical and circumferential through buttresses and tendons
- Concrete shell outer layer, inner layers, vapor barrier (steel), insulation (perlite) Nickel-steel LNG containment
- Plumbing, in and out, through the tank top

Typical Tank(s)

[2] Venart, J., LNG Tank-top Fires: Radiation Exclusion Zones, Presented to DOT PHMSA, Washington, DC, May 30, 2013.

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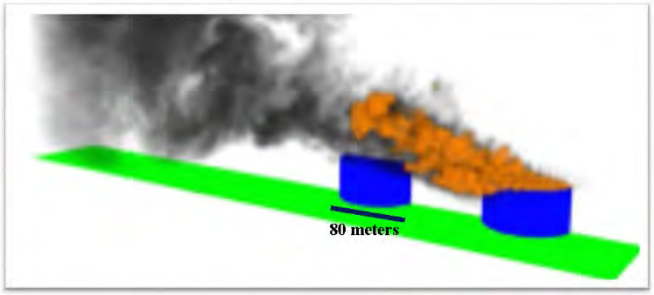
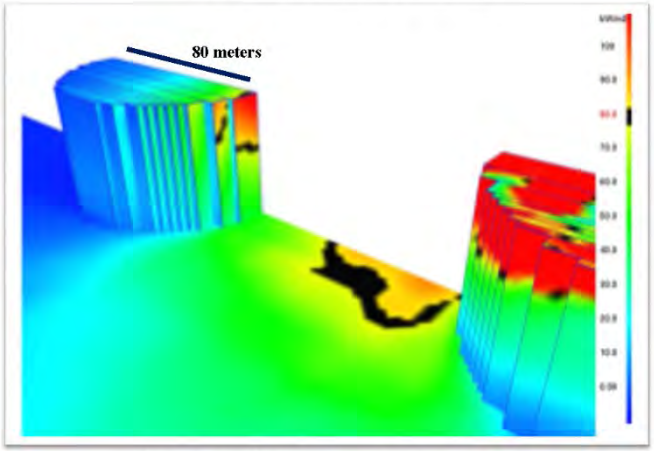
LNG tank-top fire (high wind speed) FDS model results by Venart



Smoke and Fire Development for Two Tanks



Down-wind tank being exposed to an up-wind tank-top fire
Boundary heat flux for two tanks at 1 minute after fire initiation.
Incident heat flux exposures to both tanks in excess of 80 kW/m^2, wind 7.5 m/s.

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Conclusions regarding tank-top fire and cascading failure scenario

- LNGFIRE3 has NOT been validated for the size of LNG fires anticipated for tank-top fires. Its use to establish conservative thermal exclusion zones is suspect. IND107-19
- If not extinguished such a tank-top fire could possibly burn for 20-30 hours.
- NIST FDS CFD and experimental studies establish that the wind flowing around the sides of the tank tends to drag the flame down over the edge of the tank towards the ground. This exposes the concrete containment to high temperatures, radiant fluxes greater-than-design and thus thermal stresses with a potential for spalling, cracking, and other failure modes, thus loss of support to the interior mild steel moisture barrier and the insulating perlite.
- Thermal stresses to this complex system over the many hours of fire exposure could possibly cause collapse of the downwind edges of the Nickel steel primary containment and loss of LNG into the Perlite, a situation perhaps sufficient to result in total collapse of the containment system due to thermal stress. Under such conditions escalation of the event would be inevitable.
- The extent of the pool fire could now increase to the edges of any berm-impoundment surrounding the tank area, if provided, and a very much larger pool fire could result (of shorter duration).
- With two tanks, if one tank did not collapse, its adjacent neighbor would be exposed to heat fluxes greater than 80 kW/m^2 should the prevailing wind result in its flame exposure. Due to the increased fire size, plant processing areas could be adversely affected and the public radiation exclusion zone substantially increased.

- **Potential for Cascading Events Increases with Heavier-than-Methane Hydrocarbons**

The JCE DEIS pays little attention to the potential for boiling liquid expanding vapor explosions (BLEVEs) and UVCEs involving the liquefaction facilities. There appears to be a lack of coordination between the federal agencies (FERC and EPA[3] in this instance) in consideration of hydrocarbon explosion potential. We suspect that this is due to past emphasis of the regulations on LNG-only facilities. We quote from the Executive Summary of EPA 744-R-94-002: IND107-20

This report assesses the potential consequences of accidents involving flammable chemicals to support the evaluation of whether such chemicals may warrant addition to the list of extremely hazardous substances (EHSs) under section 302 of Title III of the Superfund Amendments and Reauthorization Act (SARA). EPA's analysis included identification and evaluation of existing listing and classification systems, along with any applicable criteria; review of existing regulations and codes dealing with flammable materials; analysis of histories of accidents involving flammable substances; and modeling potential consequences of fires and explosions of flammable substances. …

A review of accident history indicates that flammable substances have been involved in many accidents, and, in many cases, fires and explosions of flammable

[3] Flammable Gases And Liquids And Their Hazards, United States Environmental Protection Agency, EPA 744-R-94-002, February 1994

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IND107-19 LNGFIRE3 has been scientifically assessed, verified, and validated for modeling LNG pool fires. Specifically, LNGFIRE3 uses a the solid flame model approach, which is currently the most commonly used methodology to model thermal radiation hazards for large open hydrocarbon fires. The solid flame approach approximates the geometric shape of a fire as a tilted cylinder, parallelepiped, or other simple geometry with characteristics based on experimentally derived values and correlations for mass burning rate, flame height, flame tilt, and flame drag. Corresponding geometric view factors for the simplified geometric shape and correlations for the surface emissive power (SEP) and atmospheric transmissivity are then multiplied together to estimate thermal radiation intensity at a specified distance. FERC staff conducted a detailed study, "Recommended Parameters for Solid Flame Models for Land Based Liquefied Natural Gas Spills," Issued January 23, 2013 in Docket AD13-4-000 (eLibrary Accession Number: 20130123-4002), evaluating the commentor's concerns, including the effect of higher elevations on wind speed and flame drag, the potential for higher surface emissive powers, and a sensitivity analysis for various other parameters. FERC staff concluded while LNGFIRE3 under-predicts the mass burning rate, flame length, and the mean surface emissive power for large scale LNG fire tests, predicted distances to radiant heat levels are still close in agreement with the measured values from the experiments. This is primarily due to the over-prediction of the view factor inherent in the solid flame model representation of the flame as a cylinder. FERC staff concludes that LNGFIRE3, as currently prescribed by 49 CFR Part 193, is appropriate for modeling thermal radiation from LNG pool fires on land, including tank-top fires, and is suitable for use in siting on-shore LNG facilities.

IND107-20 Potential for cascading events, including BLEVEs, and overpressures due to vapor cloud explosions are discussed in Sections 4.13.5.4 and 4.13.5.6. EPA is a cooperating agency for the EIS.

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substances have caused deaths and injuries. Accidents involving flammable substances may lead to vapor cloud explosions, vapor cloud fires, boiling liquid expanding vapor explosions (BLEVEs), pool fires, and jet fires, depending on the type of substance involved and the circumstances of the accident.

Vapor cloud explosions produce blast waves that can potentially cause offsite damage and kill or injure people. EPA reviewed the effects of blast wave overpressures to determine the level that has the potential to cause death or injury. High overpressure levels can cause death or injury as a direct result of an explosion; such effects generally occur close to the site of an explosion. EPA's analysis of the literature indicates that people also could be killed or injured because of indirect effects of the blast (e.g., collapse of buildings, flying glass or debris); these effects could occur farther from the site of the blast. A vapor cloud may burn without exploding; the effects of such a vapor cloud fire are limited primarily to the area covered by the burning cloud. The primary hazard of BLEVEs, pool fires and jet fires is thermal radiation; the potential effects of thermal radiation generally do not extend for as great a distance as those of blast waves. In addition, the effects of thermal radiation are related to duration of exposure; people exposed at some distance from a fire would likely be able to escape. BLEVEs, which generally involve rupture of a container, can cause container fragments to be thrown substantial distances; such fragments have the potential to cause damage and injury. Fragments and debris may also be thrown out as a result of the blast from a vapor cloud explosion.

The probability of occurrence of vapor cloud explosions appears to be rather low, based on analysis of the literature. EPA reviewed factors that may affect the probability of occurrence of a vapor cloud explosion, including the quantity of flammable vapor in a cloud, the presence of obstacles or partial confinement, and the type of ignition source. *Analysis of accidents indicates that vapor cloud explosions are less likely when the quantity in the cloud is less than 10,000 pounds.* *(emphasis added)* It is generally thought that some type of obstruction or confinement enhances the probability that a vapor cloud explosion, rather than a vapor cloud fire, will occur. A high energy ignition source also contributes to the probability of occurrence of a vapor cloud explosion. …

Based on modeling and analysis of the literature, flammable gases and volatile flammable liquids appear to be the flammable substances of most concern, because they may readily form vapor clouds, with the potential for damaging vapor cloud explosions. EPA identified a number of such substances of concern. The analysis carried out by EPA for this report was intended to provide a general background on the hazards of flammable gases and liquids. The modeling results and accident data illustrate and compare the consequences of vapor cloud explosions, vapor cloud fires, BLEVEs, and pool fires. …

There have been a large number of devastating hydrocarbon explosions, particularly BLEVEs, since 1994. Finally, we note that the design spills considered in the JCE DEIS exceed the 10,000 | IND107-21

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IND109-21 As discussed in Section 4.13.4, OSHA and EPA regulations are not applicable to facilities regulated under 49 CFR 193. The design spills under 49 CFR 193 are discussed in Section 4.13.5.2 and the resultant vapor cloud explosions are discussed in Section 4.13.5.2.

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pound figure suggested by EPA as demarcating the size below which UVCEs are "improbable" (see emphasis added text in the EPA report quoted above) by at least a factor of 10, and in the case of LNG spills, by a factor of perhaps 300. IND107-21 Con'td

- **The Vapor Clouds Formed from the Design Spills Pose Severe Explosion Hazards**

The vapor dispersion distances calculated using PHAST and FLACS, while extending in some cases slightly past the applicant's property boundaries, obviously could not have been determined by the (dispersion) models used without the applicant's provision of gas-impermeable vapor fences to retain the flammable cloud boundaries within the property boundary. The Figure below indicates the position of the proposed vapor fences; gas-impermeable concrete fences as tall as forty feet. IND107-22

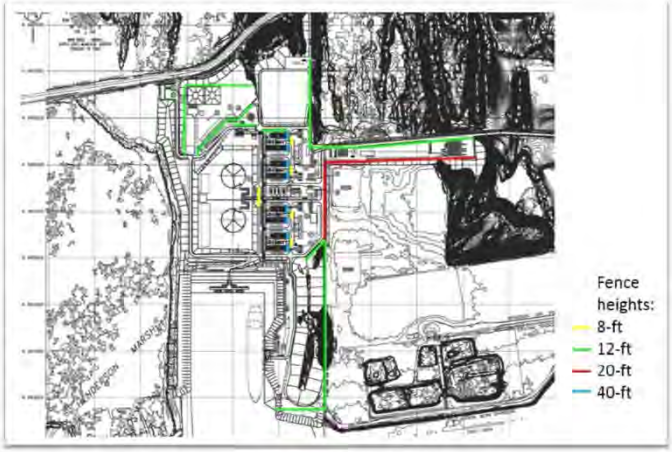

Figure 4.13-1 from DEIS
Vapor Fences at Jordan Cove Facility

Vapor Cloud Explosion hazards of LNG

The Jordan Cove Export DEIS FERC summarily dismisses the potential for methane vapor cloud explosions with the following statement: IND107-23

The potential for unconfined LNG vapor cloud detonations was investigated by the Coast Guard in the late 1970s at the Naval Weapons Center at China Lake, California. Using methane, the primary component of natural gas, several experiments were conducted to determine if unconfined vapor clouds would

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IND107-22 See response to IND107-05. FLACS allows the input of geographical elevations and structures such as storage tanks, vessels, pipe racks, and vapor fences. The physical characteristics of the vapor fences were inputted into FLACS to represent the vapor fences to be installed at the property. The results of the FLACS modeling, with the vapor fences included, showed the vapor dispersion exclusion zones and overpressure distances do not extend beyond property under Jordan Cove's legal control.

IND107-23 Discussion of the potential for unconfined LNG vapor cloud can be found in 4.13.2.1.

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> *detonate. Unconfined methane vapor clouds ignited with low-energy ignition sources (13.5 joules), produced flame speeds ranging from 12 to 20 mph. These flame speeds are much lower than the flame speeds associated with a deflagration with damaging overpressures or a detonation.*

In consideration of the potential for mixtures of methane with heavier hydrocarbons that could be present at the terminal, the DEIS continues the statement immediately above with the following:

> *To examine the potential for detonation of an unconfined natural gas cloud containing heavier hydrocarbons that are more reactive, such as ethane and propane, the Coast Guard conducted further tests on ambient-temperature fuel mixtures of methane-ethane and methane-propane. The tests indicated that the addition of heavier hydrocarbons influenced the tendency of an unconfined natural gas vapor cloud to detonate. Less processed natural gas with greater amounts of heavier hydrocarbons would be more sensitive to detonation. ... Although it has been possible to produce damaging overpressures and detonations of unconfined LNG vapor clouds, the Jordan Cove Project would be designed to receive feed gas with methane concentrations as low as 94 percent, which are not in the range shown to exhibit overpressures and flame speeds associated with high-order explosions and detonations.*

IND107-23 Cont'd

However there is an important scientific paper describing the Coast Guard sponsored tests at China Lake[4] which contains the following (page 13):

> *The second group of tests was designed to test a postulated accident scenario in which the vapor formed during a LNG spill is mixed with air to form a flammable mixture and then diffuses into a culvert system. The mixture in the culvert ignites and the combustion wave accelerates and transitions to a detonation. This detonation wave then exits the culvert and detonates the remaining unconfined vapor cloud. ... a 6 m long culvert, 2.4 m in diameter, was buried vertically in the ground in the center of the polyethylene hemisphere. A stoichiometric mixture of methane/propane and air was introduced into the hemisphere and a detonation was initiated at the bottom of the culvert using a 3.2 mm thick layer of datasheet explosive (13 kg). In tests 1 and 3 (reported to be 85% methane and 94% methane), a strong shock wave was felt at the bunker and also in the town of Ridgecrest, 22 km from the test site. ... Based on the test data, it appears that in tests 1 and 3 a detonation was produced within the unconfined cloud (emphasis added).*

The Coast Guard Test No. 3 described immediately above was 94% methane, the lower limit methane concentration that Jordan Coves plans to accept as input feed to the terminal. While we acknowledge the use of a high-energy ignition source in CG Test No. 3, that is not sufficient reason to dismiss this test result as being meaningful for the Jordan Cove Export Terminal hazard assessment. The possibility of intentional use of high-explosives to ignite a vapor cloud must be considered - such methods are used routinely in the military to ignite the vapor/aerosol

[4] Parnarouskis, M., et.al., "Vapor Cloud Explosion Study", Sixth International Congress on Liquefied Natural Gas, 1980.

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hydrocarbon/air clouds formed in the use of fuel-air (FAE) weapons. There are additional factors which can add to the potential for accidental occurrence of a "boosted" ignition source in the vapor clouds that could be formed following the spills being considered at the JCE facility. IND107-23 Cont'd

Perhaps most importantly, as vapor fences at the Jordan Cove Facility could (in addition to the spill-guidance trenches and impoundments themselves) provide a degree of partial confinement to the cloud, there is additional potential for run up to detonation, especially if the cloud contains more than a few percent ethane/propane or equivalent heavy components.

All of the figures presented in the DEIS of flammable vapor cloud travel distance for the LNG design spills illustrate simply that the vapor fences prevent travel (except in minor cases which FERC has provided exceptions for) beyond the applicant's property boundary. We believe these results entirely miss the point of the intention of the regulations – to provide for public safety. These figures appear to indicate that the authors of the application (Jordan Cove and their Consultants) believe that the hazard extent of these spills ends at the calculated lower flammable limit concentration reached by the cloud (the cloud boundaries depicted represent concentration LFL/2, as required by the regulation). However, this assumption was historically based on the fact that a reasonable limit on the fire damage from a vapor cloud fire, which would be of short duration, would not extend significantly beyond the flammable vapor concentration boundary. The parties that prepared the JCE DEIS must surely be aware of the serious potential for an unconfined vapor cloud explosion to extend well beyond the limits of the flammable cloud boundary. In the text above describing the Coast Guard's explosion tests at China Lake, we provided evidence of the potential for LNG clouds that contain small amounts of heavier-than-methane hydrocarbons to develop damaging overpressures. We focus on two of the figures presented in the JCE DEIS, both for the design spills from the LNG ship unloading line. The points we wish to emphasize are specified immediately following the figures. IND107-24

Figure 4.13.5 from DEIS
LNG Spill from a Guillotine Rupture of the Ship Loading Header

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IND107-24 PHMSA has promulgated the safety regulations for LNG facilities including siting. As indicated in the October7, 2011 final decision on the approval of FLACS vapor gas dispersion model, FLACS was approved by PHMSA to predict maximum arc-wise concentrations for releases that disperse over obstructions, such as vapor fences. The discussion of the overpressure from an unconfined vapor cloud explosion can be found in Section 4.13.2.1.

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The area covered by the cloud in Figure 4.13.5 is estimated to be approximately 320 meters wide and 480 meters long (top to bottom in the figure). We estimate this gas cloud would be between 2 and 4 meters deep. The cloud envelops a large portion of the liquefaction trains; these trains are dense packed equipment structures which are known to accelerate flames in such a gas cloud sufficiently to cause damaging overpressures. The cloud essentially surrounds the LNG storage tanks. IND107-25

Figure 4.13-7 from DEIS
LNG Jetting and Flashing Scenario from a Rupture of the Ship Loading Header

The area covered by the cloud in Figure 4.13.7 is estimated to be approximately 400 meters wide and 720 meters long (top to bottom in the figure). We estimate this gas cloud would be between 2 and 5 meters deep. The cloud envelops the LNG shipping berth, indicating that a ship at the berth would be completely surrounded by the flammable cloud. While the dense packing of equipment seen in the previous figure associated with the liquefaction trains is not inside the cloud, there are containment factors associated with the space between the sea wall and the carrier that could cause damaging flame accelerations leading to explosions. We wonder what an LNG ship's Master would say if she were informed that a flammable cloud of hydrocarbons was about to surround her ship. IND107-26

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IND107-25 We have included a recommendation for Jordan Cove to address the possibility of a flammable vapor cloud dispersing under the LNG storage tanks.

IND107-26 Jordan Cove would be required to develop an Emergency Response Plan to include coordination between the terminal and the LNG vessel in the event there is an emergency at the proposed facility.

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Vapor Cloud Explosion hazards of mixed refrigerant liquids (hydrocarbons C2-C5)

For brevity, we focus on only one of the figures presented in the JCE DEIS for mixed refrigerant liquids; the design spill from the rupture of the inter-stage refrigerant pump discharge piping. The points we want to emphasize are specified immediately below the figure.

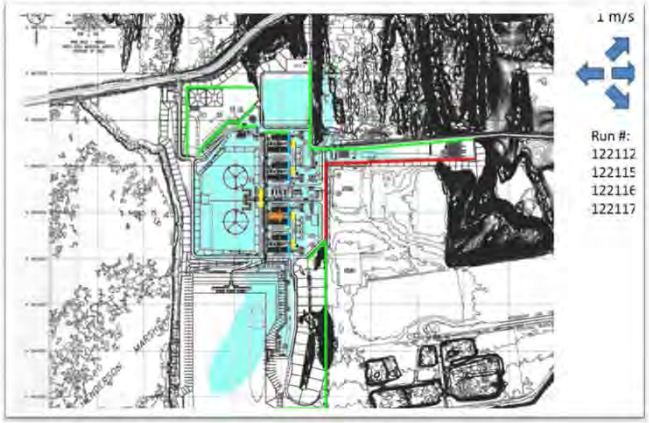

Figure 4.13-10 from DEIS
Mixed Refrigerant Release from Rupture of the Inter-stage Refrigerant Pump Discharge Piping

The area covered by the cloud in Figure 4.13.10 is estimated to be approximately 400 meters wide and 720 meters long (top to bottom in the figure). We estimate this gas cloud would be between 2 and 4 meters deep. The cloud envelops large portions of the liquefaction trains as well as at least half of the LNG shipping berth, including the space between the ship and the sea wall. We believe that an unignited MRL vapor cloud as indicated here could have the potential to cause a catastrophic UVCE that would result in severe cascading effects endangering the entire terminal. IND107-27

Vapor Cloud Explosion hazards of ethylene

The DEIS presents a single vapor cloud prediction for the 14,000 gallon ethylene design spill. The wind speed is specified as 1 m/s (essentially calm). The area covered by the cloud in Figure 4.13-13 is estimated to be approximately 320 meters wide and 400 meters long (top to bottom in the figure). We estimate this gas cloud to be between 2 and 4 meters deep as well. The cloud envelops large portions of the liquefaction trains as well as all of one of the LNG tanks and about ¼ of the other one. The DEIS states that the ethylene release scenario at the refrigerant trucking area would remain within Jordan Cove's property or extend over a navigable body of water, so it would not have a significant impact on public safety with respect to flammable vapor dispersion.

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IND107-27 See the responses to IND107--24, -25, and -26.

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Figure 4.13-13. Ethylene Release from Rupture of the Ethylene Trucking Hose

Overpressure Analyses

The DEIS at page 4-963 states the following. "… the propensity of a vapor cloud to detonate or produce damaging overpressures is influenced by the reactivity of the material, the level of confinement and congestion surrounding and within the vapor cloud, and the flame travel distance." We add that the potential flame travel distance is the distance that can be traversed by the flame in gas/air concentrations lying within the flammable region, i.e., between the LFL and UFL. This travel distance is in turn determined by the amount of flammable gas that is mixed with air in the cloud, and thus by the amount released into the atmosphere. The implications are clear; if a very large vapor cloud can form with large distances that can be traversed by a flame burning in the flammable region, the potential for flame acceleration increases. IND107-28

While the DEIS presents explosion overpressure predictions for the mixed refrigerant gases, it dismisses the (UVCE) explosion hazards for LNG. We believe this cannot be justified for the following reasons: IND107-29

- The Coast Guard Tests show that with a strong igniter (high explosive), methane with about 6% propane added detonated. The DEIS states that Jordan Cove "will limit the heavier than methane hydrocarbon content in the LNG streams to 6%". This leaves no margin for safety, even if they could be certain of maintaining those levels.

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IND107-28 For the overpressure analyses, the ignition locations within the flammable cloud were selected in order to maximize the path available for flame propagation (and acceleration) within the congested area. The release locations were picked to be in the most-congested area of each liquefaction train. With choosing the most congested area of the liquefaction trains and the maximum distance between the release and ignition locations, we believe Jordan Cove modeled the worst-case scenarios possible for overpressure analyses at the proposed facility.

IND107-29 As discussed in Section 4.13.5 of the EIS, damaging overpressure from ignition of a LNG vapor cloud is highly unlikely. Also, see the response to IND107-23 and IND107-25.

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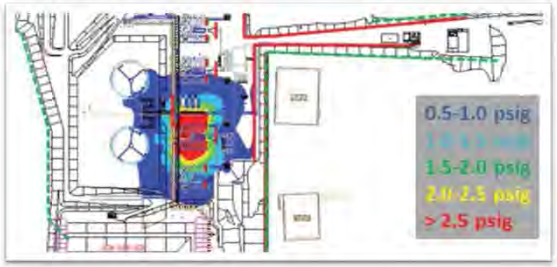
- The LNG spills are huge, and the vapor clouds formed have linear dimensions of hundreds of meters, with a corresponding potential for excessive flame acceleration.
- Secondary explosions that could boost the explosion processes cannot be discounted.

Nor do the overpressure calculations for the mixed refrigerant spills offer any consolation:

- The calculations of overpressure presented indicate very large areas of flammable gas envelopment of process equipment as well as the LNG tanks
- There are regions with linear dimensions of approximately 100 meters where the calculated pressures exceed 2.5 psig, but there is no specification of the maximum pressures reached. (See Figure 4.15-13 from the DEIS below.) IND107-29 Cont'd



- If there exists evidence of agreement of the calculation methods used in the DEIS with large scale experiments and/or accidents that provide some confirmation of these predictions, including statements of the uncertainty which must be assumed in the overpressure predictions, such evidence should be made available for assessment, otherwise the calculations have little value, particularly in the face of recent accident experience we present below.

The DEIS acknowledges the potential for ethylene vapor clouds to detonate, but there are no overpressure calculations presented to accompany the ethylene dispersion calculations presented earlier. The mixed refrigerant spill overpressure calculations indicated approximately 2.3 psig overpressure at the LNG storage tanks. This statement is followed by "Jordan Cove stated that the LNG storage tanks would be designed to withstand an overpressure of 2.3 psig"… and that "We (presumably FERC) conclude that the siting of the proposed Project would not have a significant impact on public safety". In our opinion that statement does not indicate good engineering judgment, as it assumes a precision and accuracy of the model predictions that no scientist or engineer we know would endorse. IND107-30

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IND107-30 We have added a discussion as well as a recommendation for Jordan Cove to demonstrate the LNG storage tanks can withstand overpressures from ignition of design spills.

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Potential for Catastrophic Unconfined Vapor Cloud Explosions (UVCEs)

Recent accident experience demonstrates that conditions are best for large vapor clouds to form if there is a mechanism for rapid evaporation of the spilled liquid and if there are near calm conditions which prevent rapid dispersion. The design spills considered for the Jordan Cove Export Terminal fit both criteria; the conditions considered are low-wind, near calm, and the materials are highly volatile; most volatile in the order of decreasing carbon content: methane, ethylene, propane, and pentane. The simple fact is that while the vapor clouds considered in this DEIS are prevented by physical barriers (vapor fences) from posing a vapor cloud hazard extending much beyond the property line, the holdup of very large quantities of flammable hydrocarbons by the vapor fences causes the gases to accumulate, with spreading largely driven by gravity spreading, so as to completely fill the affected areas to depths of a few meters, with large portions of those gas clouds having concentrations between the flammable limits. With these hazard-worsening conditions and the presence of densely packed processing equipment and the vapor fences which become enveloped in the cloud, one could hardly design the releases to better maximize the potential for catastrophic explosion hazard. IND107-31

Catastrophic UVCEs are Becoming More Frequent

Confirmed scientific knowledge of the causes of UVCEs indicates that their frequency would increase with the potential for release of large quantities of hydrocarbons, especially highly volatile ones. As we have stated earlier, the sizes of flammable hydrocarbon vapor clouds described in the JCE DEIS have lateral dimensions of up to 720 meters (~2,400 feet). To our knowledge, there have been no UVCEs in the continental United States involving flammable clouds that large. The largest vapor cloud considered at JCE, which would follow a spill of ~3/4 million gallons of LNG, involves the most volatile of the hydrocarbons, methane (CH_4), which is lowest on the explosion sensitivity scale; but the mixed refrigerant liquid (MRL) spills are very large, and they approach the range of maximum sensitivity to explosion.

It appears that the relative rarity of large UVCEs (until recently) is very likely due to the fact that most of the very large spills that have occurred did not evaporate rapidly enough, and/or were dispersed readily by the action of wind, to allow formation of a large flammable cloud . But, now there have been at least four instances within the last ten years of devastating UVCEs following very large releases of gasoline class hydrocarbons where the evaporation of the fuels was rapid enough, and the wind speed essentially non-existent, to allow the formation of flammable vapor clouds with lateral dimensions of several hundred meters. In all four cases these clouds were ignited (presumably accidentally) and the explosions resulted in cascading events leading to catastrophic damages to the facilities (refineries/tank-farms) and injury/and/or deaths in the public sector. The first occurred in December, 2005, at Buncefield in the United Kingdom. There followed three more: Jaipur, India, 2009; San Juan, Puerto Rico, 2009; and Amuay, Venezuela, 2012. The following facts are a matter of record for all four:

- The events occurred in very low wind (near calm or calm) weather conditions.
- The maximum linear extents of the flammable clouds were at least 250 meters, ranging to at least 650 meters at Amuay.
- UCVEs occurred in every case that registered above 2.0 on the Richter Scale.
- The initiating explosions resulted in cascading events leading to total loss of the facilities.

We provide below photographs of these accidents (depicting the cascading fire and explosion effects) indicating the catastrophic damages that resulted. In our view, these four events, which have similar descriptions of the weather conditions and physical factors that could cause extremely

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large flammable vapor clouds to form, and with which the vapor cloud scenarios considered in the JCE DEIS are clearly similar, should be a clear warning to parties planning facilities with similar potential for catastrophe.

Buncefield, United Kingdom

Jaipur, India

Amuay, Venezuela

San Juan, Puerto Rico

Scientific Conclusions re the Buncefield Event are Directly Relevant to the JCE DEIS

To our knowledge, detailed reports of the explosions in India, Venezuela, and Puerto Rico have not been completed. However, during the decade 2005-2015 since the Buncefield explosion occurred there have been published extensive reports of analyses thereof. The Buncefield explosion, which has been definitely established to be a UVCE, is thought to be the largest explosion that has occurred in peacetime Europe; damages now exceed two billion dollars.

In 2012, there appeared a paper in the Philosophical Transactions of The Royal Society (Great Britain) by D. Bradley, G.A. Chamberlain and D.D. Drysdale[5] entitled "Large vapour cloud explosions, with particular reference to that at Buncefield". As this paper appears to be the most

[5] Phil. Trans. R. Soc, A 2012 370, doi: 10 1098/rsta.2011.0419, published 2 January 2012

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recent to summarize the present understanding of the increasing potential hazards of unconfined vapor cloud explosions (UVCE) of hydrocarbon-air mixtures, we quote directly from the Conclusions section thereof:

> **A number of mechanisms for the propagation of combustion have been discussed, without reaching any definite conclusions as to what precisely happened at Buncefield. Of particular importance was the acceleration of turbulent flames along the line of trees and hedgerows. There was no unequivocal evidence that a principal mode of reaction was a fully developed detonation sweeping across the site. There was, however, evidence that the observed damage and various camera records could be explained in terms of high-speed deflagrations and quasi-detonations. The former could generate localized flamefront over-pressures of 400 kPa and, with sufficient confinement, shock pressures of 1 MPa. Quasi-detonations, the details of which are complex, can create constant volume combustion over-pressures of about 0.7-0.8 MPa, while a detonation would give a pressure spike of 1.75 MPa.**
>
> **…**
>
> **Other areas for further study emerge, some of which are included in the Buncefield Explosion Mechanism Phase 2 programme. The most significant should include the following.**
>
> **i. Analysis of the complexities of multi-component gasoline spillage, involving droplet break-up, air entrainment and vapour production, followed by dispersion in still air over uneven terrain. Dispersion under almost still conditions provides significant modelling challenges.**
>
> **ii. The mathematical modelling of explosions through densely packed, small-scale, flexible obstacles and the question of whether reactant temperatures and pressures can become high enough for a DDT. The modelling of transitions to detonation and the conditions for their continuing propagation are particularly challenging, in terms of both the underlying science and the required computing power.**
>
> **iii. A related experimental investigation of flame acceleration, with and without "bang-box" initiation, along hedgerows and lines of trees to ascertain the probability of a DDT and its continuing propagation into an uncongested cloud. Further investigations are also needed of direct jet flame "bang-box" ignition of external vapour clouds, to define the conditions that can lead to detonation of the cloud.**
>
> **iv. The generation of necessary fundamental experimental and theoretical data on autoignition delay times, laminar burning velocities, and the effects of flame stretch on high turbulent burning velocities, including extinctions, all over the relevant ranges of temperature and pressure. The combinations of (ii), (iii), and (iv) could provide retrospective guidance on the relative contributions of high-speed deflagrations, quasi-detonations and detonations to the damage at Buncefield.**

In closing with these selected conclusions of this scientific paper summarizing the research that experts consider necessary in order to develop a methodology applicable to the determination of the potential for unconfined vapor cloud explosions of hydrocarbon-air

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mixtures, we hope to send a clear message to the Federal Energy Regulatory Commission as well at the regulatory authority (DOT) that the methodologies depended on to ensure Public Safety in the Jordan Cove Export DEIS require careful, scientific, adjudication of the concerns we have raised – all of which we believe are supported by the extensive research regarding UVCE potential hazards post-Buncefield. IND107-32

Appendix - A Brief History of LNG Regulation for Public Safety

LNG trans-ocean shipping, enabling import and export projects, has a relatively short history. The first cargo of LNG (27,400 m^3) shipped trans-ocean was delivered in 1964 from Lake Charles, Louisiana to Canvey Island (near London) in the United Kingdom[6]. The number of LNG carriers has now increased to more than 370, while ship capacities have increased by a factor of ten, with the largest ships today each carrying 266,000 cubic meters (70,264,000+ gallons) of LNG. As the development of this industry has been decidedly fast-track, yet involves truly huge concentrations of energy-posing hazards in storage on land and in the ships, it is important to review the history of the development of methodology currently used by the United States Government to identify and regulate the hazards to the public that attend the operation of such facilities, onshore and off.

The Federal regulation 49 CFR 193: *Liquefied Natural Gas Facilities: Federal Safety Standards* was promulgated in 1980. 49 CFR 193, addressing the safety requirements regulated by DOT, is applicable on the land portion of the terminal(s) only. For our purposes in these comments, DOT's regulatory authority can be assumed to end at the point where the connections are made from the storage tanks on land to the loading lines on the ship. Beyond the shore-to-ship connection point, the principal authority granting approval for and regulating the operations is the Coast Guard. Both DOT and the Coast Guard have conducted extensive research, including field scale experiments, to define and quantify the hazards of fire radiation (heat damage) that could occur from vapor cloud and liquid pool fires, as well as the potential for explosion (generation of damaging overpressures) should a vapor cloud explode, to determine the appropriate measures which must be taken to provide for public safety.

Historically, the hazards of LNG are regulated based on the assumption that LNG is (primarily) liquefied methane (CH_4). In contrast, heavier-than-methane hydrocarbons, including the so-called Liquefied Petroleum Gases (LPG) which are necessarily present in large quantity in an LNG export terminal, are mixtures of hydrocarbon gases with molecular weights heavier than methane, such as ethane (C_2H_6), propane (C_3H_8), butane (C_4H_{10}), and pentane (C_5H_{12}). According to the JCE DEIS the heaviest hydrocarbons handled in significant quantities at this terminal will be C_5H_{12}. This is a vitally important point for the present discussion, because while it may be reasonable to identify, even limit, LNG hazards at import terminals assuming the LNG properties are similar to those of pure methane, LNG export terminals are another matter. Export terminals thus must receive gas (normally by pipeline) for liquefaction and shipping that contain significant amounts of heavier (than methane) hydrocarbons. Because shipped LNG must be sufficiently pure methane in order to be burned efficiently in typical natural gas burning equipment, the heavier hydrocarbons present in the gas feed stream must be removed in a natural-gas-liquefaction facility before shipping. Significant amounts of heavier-than-methane hydrocarbons must be temporarily stored at the export terminal site and ultimately become part of the products that are shipped out of the

[6] http://www.eia.gov/todayinenergy/detail.cfm?id=16771

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IND107-32 As discussed in Section 4.13.8, based on our analysis and recommended mitigation, we believe that the facility design proposed by Jordan Cove includes acceptable layers of protection or safeguards which would reduce the risk of a potentially hazardous scenario from developing into an event that could impact the off-site public.

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export terminal by various means. The result is that export terminals involve storage, handling, and usage of significant amounts of these heavy hydrocarbons which constitute hazards different from, and often more-severe-than, methane (the principal component of LNG).

The first author began research on LNG safety in 1976 (before the advent of 49 CFR 193) while on leave from the University of Arkansas serving as a technical advisor to the Office of Merchant Marine Safety of Coast Guard Headquarters in Washington, D.C. Havens' initial assignment was to review a collection of six mathematical (computer) model predictions of the maximum distance that could be reached by a flammable cloud of methane and air formed by spillage on water of the contents of a single tank of LNG from a typical LNG carrier of that day. The contents of a single tank on such a ship (typically containing five such tanks) was 25,000 cubic meters, or about 6 million gallons.

The problem the Coast Guard faced in 1976 was that the predictions of maximum flammable-gas-cloud extent from such a spill by six independent expert-preparers ranged from ¼ mile to 75 miles! In 1977 near the end of his off-campus-leave period Havens completed an analysis of the collection of predictions and prepared a report[7] for the Coast Guard which concluded that the lowest and highest estimates of distance were not credible and suggested that the range of distances would be much more likely to be between 3 and 10 miles. This was some progress, but the Coast Guard wanted a higher-confidence answer. Havens returned to the University of Arkansas with a contract to develop a personal-computer (PC) model capable of predicting hazardous vapor cloud dispersion distances for specified amounts of LNG spilled on water. The result was the DEGADIS model adopted by DOT and incorporated in 49 CFR 193 as the dispersion model used for LNG facility regulation to determine vapor dispersion exclusion zone (safe separation) distances.

Havens' 1977 report, in addition to enabling continuation of research on LNG vapor dispersion upon return to the University of Arkansas, had another very important effect on Havens, one which was brought back vividly while studying the Jordan Cove Export Project DEIS in preparation of these comments. Havens, at the suggestion of the Coast Guard, had sent his draft report to the authors of the predictions, requesting they provide reply-comments to the (Coast Guard) report. The authors of the predictions were informed that their replies would be published as part of the report. While all of the model-prediction-preparers provided written comments which were published in the report, and all were helpful, one preparer's reply still profoundly affects Havens' conclusions about the effectiveness of the United States regulatory program to provide for the public safety. Dr. James Fay, Professor of Mechanical Engineering at MIT, replied to Havens' request beginning with the paragraph quoted below.

> *"The discussion in the introduction (pp. 15-17) of the probability of various accident scenarios, which is clearly not an aspect of the scientific review of the various dispersion theories but more nearly a policy statement regarding risk, unfortunately tends to denigrate the value of this analysis. The reader may wonder whether the assessment is to be taken seriously, or has been carefully made, given the asserted unlikelyhood of the process being discussed. But if one ignores the casuistry of this portion of the introduction, the subsequent analysis is scientifically useful and more than worth the effort to have performed it."*

Fay's statement had focused on a very important failing of the report - the fact that Havens

[7] Havens, Jerry, "Predictability of LNG Vapor Dispersion From Catastrophic Spills Onto Water: AN ASSESSMENT", USCG-M-09-77, April 1977, http://www.dtic.mil/dtic/tr/fulltext/u2/a040525.pdf

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appeared to have felt a responsibility to give the report's readers an excuse to discount the hazards being discussed on the basis that they were very unlikely (low probability). But the report had provided absolutely no information supporting any estimate of such events' probability of occurrence; the inclusion of the statements about "likelihood" therefore had no valid purpose. Havens continues today to acknowledge that failure; Professor Fay was entirely correct. We leave it to the readers of the Jordan Cove Export Terminal DEIS to determine the validity/justification of the suggestions therein regarding the probability of the events under discussion. Of course, our concern is that any such analysis which includes discussion of the probability of occurrence of specific realizations of the hazards must be scientifically quantified to be useful. Without careful quantitative justification such assertions are likely to encourage wishful thinking that is dangerous given the potential severity of the consequences being considered.

There were five major SAFETY HAZARDS identified that determine the regulation of safe-siting (separation) distances from the terminal to protect the public. Those five hazards are still applicable to the Jordan Cove Export (JCE) Export Terminal (we are not addressing potential environmental hazards):

- Toxicity
- Cryogenic Exposure
- Liquid Pool Fires
- Vapor Cloud Fires
- Vapor Cloud Explosions

As this submission focuses on safety hazards to the public offsite, we agree that toxicity and cryogenic exposure hazards are not nearly as likely (compared to the remaining three) to pose serious threats to the public.

The United States Government has conducted major research programs to define and quantify the hazards that attend the siting on land of LNG import terminals and the marine operations associated with LNG ship carriage. We will not attempt to describe the research efforts conducted by industry; our discussion focuses on government sponsored research designed to quantify, for regulatory purposes to provide for public safety, the three hazards identified above: liquid pool fires, vapor cloud fires, and vapor cloud explosions.

The interest in LNG importation in the United States has been highly cyclic. During the period ~1970-1985, the first four import terminals were constructed in the continental U.S., all on the East and Gulf Coasts: Everett, MA; Cove Point, MD; Elba Island, GA; and Lake Charles, LA. There were several import terminals proposed onshore and offshore California, but none were ever constructed. Extensive LNG research was performed during this period to develop the Government's knowledge base supporting public safety-regulation. Then, after a decade or more lull in interest in LNG terminals, another rush to construct import terminals developed at the turn of the century with more than fifty import terminals proposed in short order. The attack on the World Trade Towers on 9-11-2001 heightened concerns about LNG safety, partly because of the presence of the import terminal in Boston Harbor (Everett, MA). The Government's responses to the multiple terrorist attacks on 911 included preventing a scheduled LNG ship from entering the Everett, MA, terminal, holding it offshore for several days before directing it to proceed to Elba Island, GA to unload. This was due to concerns that LNG facilities in highly populated areas might be considered attractive targets for terrorist attack; this concern is still with us. Research directed to LNG safety following 911 was primarily directed to hazards to the public of the shipping side of import projects then operating. There developed as a result another period of

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LNG safety research, primarily directed at marine (shipping) operations, which has continued to the present.

The First Research Period: ~1970-1985

At about the same time that Havens was digesting Professor Fay's review of the Coast Guard Report, Congress appropriated substantial sums (~$40,000,000) for the Lawrence Livermore Laboratory (LLNL) and several other Contractors, including the China Lake Naval Weapons Center, to research outstanding questions about LNG liquid pool fires, vapor cloud dispersion, and vapor cloud explosion hazards. LLNL built a purpose-designed spill test facility at the Nevada Test Site on the old (Frenchman Flat) nuclear weapons test site to conduct LNG spill research. A principal product of this work was the complex mathematical model for LNG vapor dispersion called FEM3 (acronym for Finite Element Model 3 dimensional). The model was designed to address the need for prediction of vapor dispersion in the presence of terrain effects and obstacles such as buildings and plant structures. Extensive reports of this work are available. The University of Arkansas was subsequently contracted by the then Gas Research Institute to develop a PC version of FEM3, and the University carried out some validation experiments using a purpose-built ultra-low-speed wind tunnel (the largest ultra-low-speed wind tunnel in the world at that time). That PC version became known as FEM3A, and it was adopted by DOT as an alternative (to DEGADIS) model that could be used by LNG facility applicants to consider the effects on dispersion distances that would result from the presence of obstacles or terrain features.

Meanwhile, the China Lake Naval Weapons Test Station conducted (for the Coast Guard) a series of liquid methane and propane spills to investigate the potential for fire radiation damage extending from fires of different sizes and also conducted an extensive series of tests of unconfined gas clouds of methane and propane mixtures of uniform concentration (contained in balloons) to determine the potential for such clouds to cause damaging overpressures (explosions). Extensive reports of this work are available.

The pool fire test data from China Lake was used to develop the LNGFIRE model series, which is still used to determine the regulation-required separation distances to prevent radiative (fire) fluxes that can cause serious burns to the public. The principal results of the unconfined gas cloud explosion work, here intentionally simplified for brevity, were:

- Pure methane (unconfined) did not burn with damaging overpressures (explode) unless a sufficiently energetic "starting" explosion ignited the cloud.
- The presence of sufficient amounts (say >10-15%) heavier components such as propane mixed with methane resulted in damaging overpressures.

Since that early work there have been numerous severely-damaging accidental explosions of unconfined mixtures of propane (and heavier hydrocarbon gases) with air.

The research conducted by the Government described above occurred in the same decade in which the Atomic Energy Commission was abolished in favor of the Energy Research and Development Agency, later succeeded by the present Department of Energy. At first there was a move to design the regulatory framework for LNG management (LNG had been promoted to the class of Major Hazards by the British Health and Safety Agency by that time) based on probabilistic risk assessment procedures, as was being suggested as the favored method to regulate the safety aspects of nuclear electric power plants. However, DOE and DOT (the latter by that time the agency responsible for natural gas pipeline safety) took on the responsibility of developing regulations governing the siting of LNG terminals. The responsibility for the shipping side went to the Coast Guard.

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DOT incorporated a purely consequence-based approach (with no consideration of quantitative measures of risk, meaning the probability with which an event might occur) which is still in use. Initially, regulations required the terminal applicant to determine safe separation distances, separately, for (unignited) vapor cloud travel and pool-fire radiation hazards. The applicant was required to use regulatory approved mathematical (computer) models to determine the maximum hazard distance for "worst case" vapor cloud releases and liquid pool fires. Up to ~2000, such calculations were required to be completed using DEGADIS (and later FEM3A) for vapor dispersion, and LNGFIRE for pool fires). The starting assumption (the event required to be modeled) was typically complete failure, resulting in rapid release, of the largest contained volume of LNG at the site, with no regard to the probability (or in many minds, the impossibility) of such an occurrence.

But, just as had occurred during this time period in the Nuclear Industry, there was soon adopted a practice of selecting so-called "Design" accidents which set lower requirements for the amounts of LNG to be released. The LNG regulations adopted specification of "Design" Spills to place limits upon the amount of material released and the rate at which it could be released. That is where we are today, which leads the authors to believe that an "inevitable" result has occurred - when the calculated distances required to separate the public from the hazard became "unmanageable" the release magnitudes (the so called "SOURCE" terms) were decreased. While we realize that the realities of economy as well as other factors can sometimes indicate, if not require, such changes, and that this pattern is established more or less world-wide today by major hazards industries in siting practice to protect the public, we believe it is a classic example of a process involving a seriously slippery slope. We believe that we have already reached the condition in LNG safety regulation where the determination of the design spill is effectively inseparable from the determination of the amount of land that the facility operator can purchase to insure that the public cannot intrude on. And, most importantly, the methodology for determining the "maximum" design spills that must be planned for appear to have evolved based on far-less-than-scientific reasoning processes. Although this issue is far too big to "take on" here, we want to state clearly our belief that the "agreements" on the sufficiency of the materials submitted to FERC by the applicants for the Jordan Cove Export Project have resulted far too much from "helpful cooperation" with the regulatory authority, with the result that the design spills (read spill quantity and rate of release as well as usage of vapor cloud travel "mitigation" methods) now effectively limit the hazard distances to a level considered "manageable" by the applicant.

The Second Research Period (2000-present)

As of October of 2014 seven more import terminals (beyond the original four) are in operation: Offshore Boston, Massachusetts (Excelerate Energy); Freeport, Texas; Sabine, Louisiana; Hackberry, Louisiana; Offshore Boston, Massachusetts (GDF-SUEZ); Sabine Pass, Texas; and Pascagoula, Mississippi. Three more import terminals have been approved, but are not yet under construction: Gulf of Mexico (Main Pass MeMoRan Exp.); Offshore Florida; and Gulf of Mexico (TORP Technology– Benville LNG). Finally, (as of October, 2014), one export terminal has been approved and is under construction: Sabine, Louisiana. Three other export terminals have been approved but are not yet under construction: Hackberry, Louisiana; Freeport, Texas; Cove Point, Maryland. All of these import and export terminals have been approved by FERC based (with respect to safety and reliability requirements) on meeting the requirements of DOT Regulation 49 CFR 193 and Coast Guard Letters of Recommendation.

Following 911 (2001), new concerns arose that LNG ships, already plying the waters in heavily populated areas such as Boston, could pose unacceptably severe hazards to the public, either

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resulting from accidents or terrorist attacks. In response, Congress appropriated substantial additional sums for research to better quantify the severity of hazards that could be realized, with emphasis on LNG ship movements to and from, and berthed at, operating LNG facilities. This research was conducted principally by the Sandia National Laboratory and focused principally on two questions about the hazard distances that could extend from LNG ships which suffered accidental (or intentional) releases of LNG onto water; by vapor cloud travel (if the spill was not immediately ignited upon release), or by fire radiation (heat damage) from the liquid pool-on-water fires that would result if the release was ignited at the spill site. By this time, the "maximum credible" release (from a ship onto water) had been pared down by a factor of two, from 25,000 m^3, still considered the typical single-tank volume, to half that size, 12,500 m^3. This reduction was considered reasonable based on the fact that the principles of physics dictated that since about half of the LNG in a tank was below the water level exterior to the ship it was extremely unlikely that the entire tank could be spilled rapidly (which was the condition originally assumed).

For our purposes (in these comments), it is possible to briefly summarize the Sandia Research Results (published in 2004[8]) of the pool fire and vapor cloud hazard distances (to a concentration of ½ the lower flammable limit of methane, or 2.5%) as follows:

- Pool fire radiation distances - assuming rapid release onto water of ½ tank with immediate ignition, the maximum distance to heat flux levels that could cause second degree burns to unprotected human skin was estimated to be about one mile.
- Vapor cloud dispersion - maximum distances, assuming the cloud is not ignited, extending beyond 1600 meters. For the JCE facility, this suggests that an unignited cloud from a large ship spill could reach well beyond the property boundaries.

Then, in 2007, the Government Accountability Office, as requested by Congress, delivered their report entitled "MARITIME SECURITY: Public Safety Consequences of a Terrorist Attack on a Tanker Carrying Liquefied Natural Gas Need Clarification." This report detailed the findings of an expert panel (seventeen members, one of whom was the first author of these comments) who were individually questioned to provide their opinions on major LNG safety issues that remained controversial. The section of the report entitled "Results in Brief" is repeated verbatim below[9]:

> *The six unclassified studies we reviewed all examined the heat impact of an LNG pool fire but produced varying results; some studies also examined other potential hazards of a large LNG spill and reached consistent conclusions on explosions. Specifically, the studies' conclusions about the distance at which 30 seconds of exposure to the heat could burn people ranged from about three quarters of a mile to 2,000 meters (about 1-1/4 miles). The Sandia National laboratories' study concluded that the most likely distance for a burn is about 1,600 meters (1 mile). These variations occurred because researchers had to make numerous modeling assumptions to scale-up the existing experimental data for large LNG spills since there are no large spill data from actual events. These assumptions involved the size of the hole in the tanker, the number of tanks that fail, the volume*

[8] Hightower, Mike, et. al., Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water, Sandia Report SAND2004-6258, December 2004.

[9] Maritime Security: Public Safety Consequences of a Terrorist Attack on a Tanker Carrying Liquefied Natural Gas Need Clarification, GAO-07-316, February 2007.

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of LNG spilled, key LNG fire properties, and environmental conditions, such as wind and waves. Three of the studies also examined other potential hazard of an LNG spill, including LNG vapor explosions, asphyxiation, and cascading failure. All three studies considered LNG vapor explosions unlikely unless the LNG vapors were in a confined space. Only the Sandia National Laboratories' study examined the potential for cascading failure of LNG tanks and concluded that only three of the five tanks would be involved in such an event and this number of tanks would increase the duration of the LNG fire.

Our panel of 19 experts generally agreed on the public safety impact of an LNG spill, disagreed with a few conclusions reached by the Sandia National Laboratories' study, and suggested priorities for research to clarify the impact of heat and cascading tank failures. Experts agreed that (1) the most likely public safety impact of an LNG spill is the heat impact of a fire; (2) explosions are not likely to occur in the wake of an LNG spill, unless the LNG vapors are in confined spaces, and (3) some hazards, such as freeze burns and asphyxiation, do not pose a hazard to the public. Experts disagreed with the heat impact and cascading tank failure conclusions reached by the Sandia National Laboratories; study, which the Coast Guard uses to prepare WSAs. Specifically, all experts did not agree with the heat impact distance of 1,600 meters. Seven of 15 experts thought Sandia's distance was "about right," and the remaining eight experts were evenly split as to whether the distance was "too conservative" or "not conservative enough" (the other 4 experts did not answer this question).

As a result of the GAO report, Congress directed further research to be conducted by the Sandia National Laboratory. That research (thus far) concludes that the radiant heat fluxes from large LNG fires on water, which burn without much smoke, can exceed 300 kW/m^2, and that there are potential failure modes regarding LNG carriers that could lead to a ship being at risk of sinking. The ship-safety-research continues.

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ORIGINAL

IND108

Dear Ms. Bose

RE: Project Document CP13-483-000
Jordan Cove LNG - Oregon

In a word: "NO" IND108-1

If there are any advantages for Oregon, the long term risks and environmental intrusions far outweigh any benefits that the developers, politicians and job advocates can conjure up.

Thanks.

V.N. Syverson
530 Hogan Ave
Medford, OR 97504

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FEDERAL ENERGY REGULATORY COMMISSION

IND108 V.N. Syverson, Medford, OR

IND108-1 Comment noted.

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IND109

ORIGINAL

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SECRETARY OF THE
COMMISSION
2015 JAN 12 A 11: 40
FEDERAL ENERGY
REGULATORY COMMISSION

January 4, 2015

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St., N.E. Room 1A
Washington, D.C. 20426

Re: Project Document CP13-483-000;

Dear Secretary Bose:

I am writing to you because of my concern about a project underway to build a pipeline to ship liquid gas from Northern California across Southern Oregon to Coos Bay, and export most of that resource.

I have lived and worked in Jackson County, Oregon for almost 25 years, and value its natural resources, while I fully appreciate the challenges this region faces with unemployment. At first glance this pipeline project appeared to be a good boost to the local economies. Many people have voiced support, stating anything that provides a job is a good thing. I disagree.

The number of long term jobs is limited, and in most of those cases the jobs will not necessarily solve the ills of our local economies. Meanwhile the cost to vital environmental resources is immense: local property owners seeing their land usurped, all in the interest of sending a finite resource, our country's liquid gas, overseas, and at great expense. IND109-1

Please rethink this project. I hope there is more coordinated efforts to look at cleaner sources of energy and employment. This pipeline seems to have "DISASTER" written all over it, with very little return for our region and our country as a whole. I have asked folks across Jackson County what they think, and to a person they have grave concerns.

Thank you for your time and consideration in this matter.

Sincerely,

James S. Hutchinson, MA
Ashland, OR

IND109 James S. Hutchinson, Ashland, OR

IND109-1 Comment noted.

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IND110

Cynthia D. Lord
710 North Mountain Avenue
Ashland, Oregon 97520

ORIGINAL

To WHOM IT MAY CONCERN:
IN REFERENCE TO THE JORDAN COVE AND THE PACIFIC CONNECTOR GAS PIPELINE (REFERENCE # CP13-483-000), I AM TOTALLY OPPOSED TO THIS PIPELINE. IND110-1

Cynthia D. Lord

FILED
SECRETARY OF THE COMMISSION
2015 JAN 12 A 11:52
FEDERAL ENERGY REGULATORY COMMISSION

IND110 Cynthia D. Lord, Ashland, OR

IND110-1 Comment noted.

IND111 Gary Woodring, Jackson County, OR

20150115-0013 FERC PDF (Unofficial) 01/15/2015

IND111

FERC ORIGINAL

FILED
SECRETARY OF THE
COMMISSION

2015 JAN 15 A 10: 52

FEDERAL ENERGY
REGULATORY COMMISSION

Attn: Bose

888 1st Street

Washington, DC 20426

Re: Docket # CP-13-483

FERC Testimony given @ 12/11/14, Medford, OR Hearing on EIS (Docket # CP13-483) for Jordon Cove Coos Bay, OR –Malin, OR Project.

My name is Gary Woodring, I am citizen of Jackson County, OR & not a monetary symbol.

Question: Who does this Commission (FERC) represent? Would it be "for the people and by the people?

"The Earth is not a commodity!"

"The Earth is not a commodity!"

We all like stories about this statement…however we often continually discount or deny our awareness of this and especially, when we are on powerful commission like FERC.

If you look at our current political divide of our nation you might see that overt action's and their conquests are a paramount factor. There are countless overt actions taken over time in this nation without considering the consequents'.

It is my hope that FERC will take this in to consideration with this EIS and project.

20150115-0013 FERC PDF (Unofficial) 01/15/2015

Eminent Domain by private corporations to condemn and acquire private property finds the genies of Eminent Domain rooted in the "public interest." IND111-1

This project, I submit, is not in the "public interest" of Jackson County and its prize river, the Rogue River, and environs which could be impacted severely by this proposed project.

Amendment since Testimony was given 12/11/14

1) **The name of the 500 acre site on which natural gas liquefaction plant is proposed for construction is not "Jordan Cove" which is the name of a small water cove near the site.** IND111-2
2) **The name of the land site is "Henderson Marsh" not a name the LNG proponents want the EIS to mention or public to know.**
3) **The City of Coos Bay is not going down economically; it is going up according to the Coos Bay Information Center visited recently.** IND111-3
4) **The local hospital and casino are the 1 & 2 highest employers; it is interesting that the Old Mill Casino is on a former lumber mills site. The community has adapted to new ways of helping the economy.**
5) **The EIS primarily identifies mitigations for the harm to Oregon from this LNG project. One would think that this is a comprehensive environmental report. IT IS NOT & SHOULD NOT BE REPRESENTED AS SUCH!** IND111-4
6) **FERC and all Environmental reviews should take this previous statement and should amend the EIS and insist on a comprehensive Environmental Report!**

IND111 Continued, page 2 of 2

IND111-1 Comment noted. Whether the Project is in the public interest has not yet been determined. The Commission will determine this based on the FEIS and other analyses.

IND111-2 Jordan Cove is the name of the proposed terminal and of the company that has applied to construct and operate the terminal. The USGS map we reviewed list the name of the cove as Jordan Cove, which is directly west of Jordan Point.

IND111-3 Comment noted.

IND111-4 See the response to IND1-9.

20150115-5005 FERC PDF (Unofficial) 1/14/2015 11:59:38 PM

IND112

Tim Ryan, Days Creek, OR.
The policy to use eminent domain to acquire private property for the good of a foreign company to ship their product overseas is not real popular with most Americans. To make matters worse, the method of determining the true value of the property is not presumed to be fair. The final EIS should address this problem. I would suggest that an independent arbitrator agreed upon by both parties and paid for by the pipeline company to meet individually with each landowner whose property is affected by the pipeline along with a rep from the pipeline company to determine fair and just compensation for the property. IND112-1

IND112 Tim Ryan, Days Creek, OR

IND112-1 If the landowner and the company can't agree on the easement terms the value is determined by the court. See section 4.9.2.3.

20150116-0018 FERC PDF (Unofficial) 01/14/2015

IND113

CP13-492
CP13-483

Repelle
P.O.B 57
Selma OR
97538

FILED
SECRETARY OF THE
COMMISSION
2015 JAN-14
2015 JAN 14 A 11:08
FEDERAL ENERGY
REGULATORY COMMISSION

Thursday 8th January 2015.

Dear Kimberly,
I just read the article in the Mail Tribune about the pipeline.
It is not worth it! We have something rare and precious here - something getting lost in so many other states: A beautiful wilderness, old trees, a wildlife that given a chance, can still survive here. That's too rare and too important to jeopardize for a pipeline (under the Rogue?) I am therefore completely against this project, and I will add that for the people that could lose so much because of eminent domain, we all need to say "absolutely not!" IND113-1

Sincerely,

Repelle.

PS: We also do not need more accessible wilderness areas to hunters and poachers. That pipeline would offer a new habitat to these people to devastate, and a wildlife taken by surprise and totally vulnerable, therefore...

IND113 Unreadable, Selma, OR

IND113-1 Comment noted.

20150116-0019 FERC PDF (Unofficial) 01/16/2015

IND114

CP 13-483

1-9-15

FERC

FILED
SECRETARY OF THE
COMMISSION
2015 JAN-16

Please!

2015 JAN 16 A 9:10
FEDERAL ENERGY
REGULATORY COMMISSION

Absolutely

No! No! No!

on the LNG

pipeline in Oregon

IND114-1

Ms Janet Ryall
1352 E First Ave Apt 8
Sutherlin, OR 97479-9683

Janet Ryall

ORIGINAL

IND114 Janet Ryall, Sutherlin, OR

IND114-1 Comment noted.

20150120-5201 FERC PDF (Unofficial) 1/19/2015 1:36:57 PM

IND115

FERC,

As a second generation landowner and farmer, and one directly affected by the current proposed pipeline route between MP 11.1R and 21.8, I am here with questions about the recently published Draft of the Environmental Impact Statement. I have reviewed the EIS and am curious about the following:

*In the Draft EIS, several landowner's perspectives are accounted for in the argument against the Blue Ridge Route, but landowners' perspectives against the current proposed pipeline route that crosses from one end of my property to the other were withheld. IND115-1

*The Draft EIS discusses the impact to wildlife in arguments against the Blue Ridge Route, but fails to mention the impact/threat to human lives along the proposed route, including that of my family and my neighbors. IND115-2

*The Draft EIS addresses the 8 water bodies that would be crossed in the Blue Ridge route, but fails to mention the proposed route crosses 65 water bodies, including a major crossing at Catching Slough. The pipeline will bore through the end of my property and through a major berm of Catching Slough Rd, weakening the county road structure on top. IND115-3

*I want to know how FERC plans to address the county road that would potentially be on top of the proposed pipeline route, and how traffic will be limited due to weight restrictions. I am concerned, as many parts of our road cave in from standard use yearly. IND115-4

*Liquefaction is not addressed in the Draft EIS, and I am wondering how FERC and Williams propose to mitigate the situation when the pipeline already buried in unstable ground, rises to the surface in an earthquake. IND115-5

*The threat to my community and my livelihood is not addressed in the Draft EIS, and I am wondering how FERC plans to mitigate the potential loss of human life, and the threat to my children. IND115-6

*FERC fails to mention the disruption of farming activities that would occur if the pipeline crosses 75% of my property, and how my livelihood will disappear. IND115-7

It is for these reasons, and others that I am in favor of the Blue Ridge Route, and urge FERC and others to join me in support.

Curtis and Melissa Pallin

62225 Catching Slough Rd.

Coos Bay, OR 97420

IND115 Curtis and Melissa Pallin, Coos Bay, OR

IND115-1 Comment noted.

IND115-2 Pipeline safety is addressed in section 4.13, Risks due to seismic and geologic hazards are discussed in section 4.2.2.

IND115-3 The DEIS lists 12 waterbodies crossed for the Proposed Route and 9 for the Modified Blue Ridge Alternative. These numbers are based on hydrography data (see table 3.4.2.2-1). As noted in footnote d of that table, field surveys identified 41 perennial streams and 24 intermittent streams along the Proposed Route. Field surveys have not been completed for Blue Ridge route but they would most likely identify many additional small streams.

IND115-4 If the pipeline parallels a public roadway, the pipeline would not be placed directly beneath the road surface. In this situation the pipeline would be offset from the roadway or road easement such that operation and maintenance of the roadway and the pipeline would not interfere. Where the pipeline would make a perpendicular crossing of a public roadway, the pipeline crossing must be permitted by the appropriate authority (e.g. state DOT or county public works department). Typically, these regulating authorities require a perpendicular crossing of a public roadway to be designed to account for existing and expected future traffic loads and roadway maintenance, and no restrictions on future traffic would be required.

IND115-5 Liquefaction is addressed for the terminal in section 4.2.1.3 and for the pipeline in section 4.2.2.1.

IND115-6 Safety is addressed in section 4.13.9. As noted in that section, there are over 300,000 miles of gas transmission pipelines. Most serious incidents involve older pipelines. As noted on table 4.13.9.3-2, 2 out of 123,706 accidental deaths were due to pipeline accidents. Deaths due to motor vehicle accidents are more than 20,000 times as great, deaths due to fires more than 1,500 times as great.

IND115-7 Effects on farming are disclosed in section 4.1.2.2. As noted in that section, approximately 1,047 acres of agricultural land would be affected. Pacific Connector would negotiate with landowners and provide compensation of crop losses during construction. The topsoil would be saved and replaced after construction and any damages to irrigation, fences, or other facilities would be repaired. Shallow-rooted crops can be grown inside the50-foot right-or-way. There would be no restrictions on deep-rooted crops on rest of the property would not be affected.

20150120-5091 FERC PDF (Unofficial) 1/19/2015 5:36:39 PM

IND116

Alice Goodman, Burien, WA.
As a WA State resident who enjoys the camping in the State of Oregon, I find this entire pipeline to be ill-thought out and only bringing us closer to climate destruction.

The Jordan Cove LNG Terminal and Pipeline environmental impact study failed to consider this projects contribution to our climate change problems. The Intergovernmental Panel on Climate Change (IPCC, 11-1-14 report) determined that by 2050 we must have reduced our reliance on fossil fuels by over 80%. The Jordan Cove terminal will have decades of life left by 2050. FERC failed to consider if this massive fossil fuel project would fit into that reduction, or if it could tip us over into unlivable climate change. IND116-1

Natural gas is methane. A percentage of methane leaks unburned into the atmosphere when drilling, transporting, and processing into LNG. This methane is 86 times more potent greenhouse gas than burning coal. FERC failed to consider these climate impacts of LNG. IND116-2

The company's stated Purpose and Need for this project (in "Resource Report One") is to be able to continue and expand fracking. Since this project will facilitate increased fracking, FERC should have considered the cumulative impacts of fracking on our environment. IND116-3

FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND116-4

Over 300 Oregon landowners are facing the threat of eminent domain from the 230-mile long pipeline needed to feed the LNG terminal. Veresen, a Canadian company is asking FERC to consider their enhanced profits from exporting LNG as a "public benefit", so they can condemn the land needed for the pipeline. Tell FERC not to give the right to a foreign company to condemn Oregonians land. IND116-5

FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. While the standards are set by the Department of Transportation, FERC should have considered the impacts of lower safety standards in the rough mountains of rural Oregon. Veresen will save money by using thinner pipes, less welds, and a host of other cost-saving measures. If the pipeline blows up, fewer people die in rural areas. FERC should have considered if people lives are an acceptable trade for saving corporate profits. IND116-6

This project will clearcut a 100' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, 80% of which had been reserved for imperiled wildlife. Over 400 waterways will have their stream-side vegetation permanently cleared. FERC failed to fully consider IND116-7

IND116 Alice Goodman, Burien, WA

IND116-1 See the response to IND1-1.

IND116-2 See the response to IND1-2.

IND116-3 See the response to IND1-3.

IND116-4 See the response to IND1-4.

IND116-5 Impacts on landowners whose property would be crossed by the pipeline route, including effects on property values as well as the possibility of eminent domain, are discussed in section 4.9.2.3 of the DEIS.

IND116-6 See the response to IND1-7.

IND116-7 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

20150120-5091 FERC PDF (Unofficial) 1/19/2015 5:36:39 PM

the impacts to our endangered wildlife that depend on these forests and streams, like the spotted owl, marbled murrelet, and coho salmon.

FERC should extend the comment period by at least 30 days to give everyone time to weigh in, and to be able to read the 5,000+ page DEIS. This project is too big to give so little time for public input. IND116-8

IND116 Continued, page 2 of 2

IND116-8 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20150120-5090 FERC PDF (Unofficial) 1/19/2015 4:49:28 PM

IND117

Craig Stillwell, Medford, OR.
I want to go on record as opposed to the Jordan Cove LNG project because of its potential to damage the environment, especially the Rogue River. IND117-1

IND117 Craig Stillwell, Medford, OR

IND117-1 Comment noted.

20150120-5062 FERC PDF (Unofficial) 1/19/2015 12:33:43 AM

IND118

Cindy Boersma, Ashland, OR.
I urge you to deny all permits or certifications for the proposed Jordan Cove LNG export project and associated 230-mile pipeline (NWP-2012-441) due to excessive harm to our state's waterways.

Salmon are an iconic part of the Pacific Northwest, and an important part of our regional economy. The proposed 5.8 million cubic yards of fill into 400 waterways for Jordan Cove LNG would harm the habitat these fish depend on. The threatened watersheds, including the Klamath, Rogue, Umpqua, Coquille and Coos Rivers are known for their salmon and steelhead fishing. Salmon depend on clean, cold water, and many areas of southwest Oregon are already facing problems with warming waters and sediment. In fact, substantial money is spent by state, federal and private entities to restore clean water and improve salmon habitat throughout the region. IND118-1

The extraction, transport and eventual burning of fracked gas cannot be considered a bridge fuel. The gas in question - methane - is 86 times more powerful a greenhouse gas than carbon dioxide, and recent studies from Stanford to NASA point to the lifecycle of gas being as bad for the climate as coal. Once the Boardman coal plant shuts down in 2020 the Jordan Cove project would be the single largest greenhouse gas source in the state of Oregon, if we allow it. Exporting gas to new markets would accelerate fracking in the Rockies and would damage the State's efforts to halt climate change, protect our salmon, steelhead, agriculture, and local economies. IND118-2

Finally, the U.S. Energy Information Administration tells us that exporting gas and bringing American consumers into competition with the world market for this gas would raise rates in Oregon and throughout the U.S. Higher gas prices would harm ratepayers and domestic manufacturing, shipping more jobs overseas. IND118-3

These projects would harm Oregon's clean water and the people and species that depend on it. They are clearly not in the public interest, and I urge you to protect the people and watersheds of Oregon from exploitation by denying all permits and certifications that your agencies are evaluating for LNG export.

IND118 Cindy Boersma, Ashland, OR

IND118-1 General effects on fish and other aquatic resources are discussed in section 4.6.2. Effects on listed species, including salmon, are presented in section 4.7.1.3.

IND118-2 See the response to IND1-1.

IND118-3 The DOE, not the FERC, regulates the export of LNG. Also, see response to IND1-3.

20150120-5014 FERC PDF (Unofficial) 1/17/2015 2:33:31 PM

IND119

Dee Perez, Medford, OR.
I am writing to urge FERC to rule against this pipeline and forbid the project from continuing. As a citizens of Oregon, I'm appalled that a foreign company could force eminent domain on Oregon land owners. I'm more upset about the environment destruction and dangers this pipeline would inflict on pristine wild areas and the wildlife that depend on them for life. I do not want this pipeline to continue because I believe it's bad for the environment, bad for Oregonians, and bad for legal precedent. IND119-1

Please DO NOT allow the LNG pipeline to go forward.

IND119 Dee Perez, Medford, OR

IND119-1 Comment noted.

20150121-5097 FERC PDF (Unofficial) 1/21/2015 12:08:12 PM

IND120

Debbie Kappel, Days Creek, OR.
I moved to SW Oregon to get away from the Poison water in Sauk Village IL. due to a vinyl chloride leak of 4.06 in our wells. It was considered poisoI received notices from the EPA and the city that it was Undrinkable, Not to wash Anything, brush teeth, breath steam which killed my washing and showering. I wasn't supposed to even wash my hands with this water from my tap. Water is a Natural resource you need to consider as valuable. ANY Fracking and to have this pipeline go thru the forests and thru 400 rivers and streams in SW Oregon is just plain STUPID!
We need to protect our water and land; try to use Other Cleaner ways of getting our power. The pipeline will only create negative climate change and be EXPORTED to make more money for a FORIEGN company that doesnt care about us.
The proposal of a 36" pipeline Thru SW Oregon is a huge danger due to Rough Terrain, land slides, and to consider a terminal on a sand dune outside of an airport is INSANE! I have several Land slide movements a month on my 64 acres. My land is less than 2 miles from this proposed atrocity. Its hard to tell exactly where this pipeline goes as the map suppled doesnt really show it clearly. It looks as if it goes directly across the river from my land. That will be a sick front yard. What a disappointment as I try to start a new life.. I also see that the pipeline is not even as strongly designed due to the lower population of my area even tho its in an area that is a tinderbox and on unstable land. In 2014 alone, Williams Company (the one that would build and maintain the Pacific Connector pipeline) has had 3 gas facilities or pipelines explode causing severe damage to property and great risk to human lives. What Morons think this this would be good for us??

The Jordan Cove LNG Terminal and Pipeline analysis failed to consider the true dangers of this project to increase climate change problems. The Intergovernmental Panel on Climate Change (IPCC, 11-1-14 report) determined that by 2050 we must have reduced our reliance on fossil fuels by over 80%. The Jordan Cove terminal will have decades of life left by 2050. FERC failed to consider if this massive fossil fuel project would fit into that reduction. If not, this LNG project could tip us over into unlivable climate change. IND120-1

The company's stated Purpose and Need for this project (in "Resource Report One") is to be able to continue fracking and to expand fracking. Since the Jordan Cove LNG export project will facilitate increased fracking, FERC should have considered the cumulative impacts of fracking on our environment. IND120-2

FERC failed to consider the impacts of the LNG terminal being built in the earthquake subduction zone and tsunami area of Coos Bay. For instance, FERC failed to describe what could happen to the two 80-million-gallon tanks of liquefied natural gas if the power plant stopped working and the back-up power also failed, as did in Fukushima Japan. The LNG would immediately start to warm and expand. What then? IND120-3
The proposed pipeline would export American gas overseas. Exporting gas undermines American energy independence while raising gas prices for American businesses and consumers.
If this pipeline and export terminal are completed, the demand for fracking in the interior west and Canada would increase dramatically.

IND120 Debbie Kappel, Days Creek, OR

IND120-1 See the response to IND1-1.

IND120-2 See the response to IND1-3.

IND120-3 See the response to IND1-4.

20150121-5097 FERC PDF (Unofficial) 1/21/2015 12:08:12 PM

Fracking has dangerous impacts to groundwater and leaks significant amounts of methane, a powerful greenhouse gas, during extraction and transport. Not counting leaks, Jordan Cove would result in 40 million tons of CO2e per year, a significant contribution to driving global climate change.
Pipeline construction would have substantial impacts to water quality at stream crossings through trenches in the stream, sediment from the cleared pipeline route, and the removal of important stream-side forests. Clean cold water is critical for the salmon that define our region, and the direct pipeline impacts as well as a warming climate accelerated by gas exports threaten would threaten that legacy.
Pipeline construction and the 230-mile linear clearcut would have major impacts to public forests managed by the US Forest Service and the Bureau of Land Management, and the species that depend on them.

Because the Pacific Connector Pipeline would primarily travel through rural areas, safety standards for the 36" pipeline are downgraded therefore threatening private property, public lands and many lives along the way. In addition to safety, landowners would face the use of eminent domain. Private property for the benefit of a foreign energy company is not a proper use of eminent domain. IND120-4
The LNG tankers, cooling facility, power plant and holding tanks would be located in a tsunami inundation zone that also happens to be on a sand spit extremely susceptible to liquefaction and subsidence. Any accidents place a large part of North Bend at great risk (more on this story in this Oregonian article).
This project will clearcut a 95' wide swath through wildlife habitat along 75 miles of public forests in southern Oregon, including 42 miles in old-growth forests. FERC failed to fully consider the impacts to our endangered wildlife that depend on these forests, like the spotted owl, marbled murrelet, and coho salmon. IND120-5
FERC failed to consider an alternative that requires the pipeline through southern Oregon to be built to the same safety standards for the entire 230-miles. Instead, FERC is allowing lower safety standards for rural Oregonians. This is because, if the pipeline blows up, fewer people die in rural areas. FERC should not have considered people lives an acceptable trade for saving corporate profits. IND120-6
The current 90 day comment period is not enough time for the public to provide meaningful comments on such a large and complicated project with significant implications for Oregonians, Americans, our lands and waters, our climate and U.S. gas supplies. The public should be given at least 120 days to digest and comment on this huge 5,000-page document. IND120-7

IND120 Continued, page 2 of 2

IND120-4 Comment noted.

IND120-5 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND120-6 See the response to IND1-7.

IND120-7 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

20150122-0031 FERC PDF (Unofficial) 01/22/2015

IND121

ORIGINAL

FILED
SECRETARY OF THE
COMMISSION

2015 JAN 22 A 11: 19

FEDERAL ENERGY
REGULATORY COMMISSION

K. Mallams
2855 Heritage Rd
Central Point, OR 97502
January 12, 2015

To: Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
Re: Jordan Cove Energy Project, Docket No. CP13-483-000
Pacific Connector Gas Pipeline, L.P., Docket No. CP13-492-000

For the following reasons, FERC should NOT approve these projects:

1) It is not in the public interest, and will not benefit the American public. Our natural gas resources should be conserved, and made to last as long as possible, for our energy independence and thus national security. Not for profit for foreign companies.

2) Far more jobs will be ultimately lost than gained by exporting natural gas. Demand from Asia will increase the price, resulting in reduced competitiveness for American manufacturers who rely on natural gas, when their sales and profits decline, jobs - estimated 1.2 million, could be lost.

3) NEPA requires the Federal government to use all practical means so the Nation will "fulfill the responsibilities of each generation as trustee of the environment for succeeding generations"
IND121-1 - that means this EIS should analyze and account for the impact of these projects on climate change, the consequence of increased fracking, water and air pollution. As well as long-term economic impact of using up our natural gas.

continued →

IND121 Kat Mallams, Central Point, OR

IND121-1 See the response to IND1-3.

20150122-0031 FERC PDF (Unofficial) 01/22/2015

IND121-2 NEPA also requires Federal projects to "approach the maximum attainable recycling of depletable resources". While we can't recycle natural gas, surely this does not permit shipping it to foreign countries, so depleting it as fast as possible.

IND121-3 NEPA requires all practicable means to "attain the widest range of beneficial uses of the environment WITHOUT degradation, risk to health ~~and~~ or safety, or other undesirable or unintended consequences."

- gas pipelines, including those built & maintained by the Williams Co. have a constant stream of leaks, explosions and other accidents, with great risk to health & safety.
- A 10" pipeline ~~in~~ under the N. Fk. of the Coquille has caused repeated violations in water quality and harmed spawning gravels. I see no proof a 36" pipeline won't do the same.
- building a natural gas terminal in a tsunami and earthquake zone is a risk to health and safety.
- Increase in greenhouse gas emissions, use of millions of gallons of water during historic Western droughts, and increased fracking are all undesirable consequences - and must be included in the analysis, mitigation and comparison to effects of a NO action alternative.

For all these reasons you should reject these two projects outright.

Sincerely,
Kate Mallaus
(Katy)

IND121 Continued, page 2 of 2

IND121-2 The section of the NEPA referenced in this comment also states that Federal Government decisions must also consider and be consistent with other national policy. The EIS has been prepared to meet the guidelines outlined by the Council of Environmental Quality in their regulations implementing the NEPA at Title 40 CFR Parts 1500-1508, and the Commission's regulations at 18 CFR 380.

IND121-3 See section 4.13.9.1 for safety standards, see 4.13.9.2 for pipeline accident data. See 4.13.9.3 for pipeline construction impacts on public safety. See the response to IND1-4 for earthquake risks. See the response to IND1-3 in relation to fracking.

20150123-5190 FERC PDF (Unofficial) 1/23/2015 3:03:46 PM

IND122

Bill Walsh, Eagle Point, OR.
23 Jan 2015 Bill Walsh and Shirley Weathers, 1020 Butte Falls Hwy, Eagle Point OR 97524

We are new to Oregon and new to FERC and ODEQ processes. We have some experience with the gas and oil industry, having lived in Utah's Uintah Basin for almost 20 years during boom and bust periods. We are members of the Nine Mile Canyon Coalition since 1999, a prehistoric and historic preservation group that has dealt with the natural gas industry projects and pipelines pushed through the canyon by industry and BLM.
On the way to the question I want to ask, I want to refer to this List of Pipeline Accidents in the United States in the 21st Century (Wikipedia) that we will leave with you tonight. It shows quite shockingly that there have been, on average, about one accident per week of the year, from 2000 to 2015. Looking through this list, you can see that all sorts of tragic outcomes result from these incidents. Injury and loss of life. In many cases water sources are polluted through pipeline incidents.
The composite impact has been huge. Rather than seeing these as "accidents," it would be more accurate to call them "failures:" failure of equipment, but also, in a high percentage of cases, failure to monitor pipeline operations, failure to report problems, and outright cover-ups of damaging information. Huge fines have been levied on and paid by industry. More staggering is the loss of life, workers as well as nearby residents, injuries and burns and evacuations, also damage to private and public property, pollution of municipal and private water wells, aquafers, lakes, streams and rivers, irrigation systems; leaks and explosions causing fires affecting air, vegetation, streams and rivers, watersheds, fish and wildlife.
Preliminary information about the safety record of pipelines owned, built, and operated by Williams Co. - the same one we're looking at for this project are worrisome. Williams has been cited by PHMSA (Pipeline and Hazardous Materials Safety Administration] for natural gas safety violations resulting in explosions in 2008, 2011, 2012, and 2013.
[As noted, we moved to Oregon from Utah. We have experience with pipelines failing. We're providing the Fire Marshall's report and an article on the Dry Canyon compressor station explosion on Nov. 20, 2012. This is the one we are most familiar with. A 12" pipe failed under a pressure surge, causing a violent explosion and fire that badly burned two workers, destroyed six giant compressors, blew a crater 15' deep by 30' across, which filled with water with a burning sludge on top. The entire compressor complex was destroyed, subsequently rebuilt. Imagine a 36-inch pipe failure.
This pipeline is one of three running through Nine Mile Canyon. We have talked to private property owners who complain bitterly that the pipeline owner disrupts irrigation systems, fouls the creek water, especially when the pipelines must cross streams and runoff areas, and destroys the environment for their corporate profit. They certify that the company, when leaks have occurred, fails to inform local residents and farmers of toxic substances in the water.]
The FERC staff concluded that, across all potential negative impacts, none (or the totality] would end up being significant enough to stop the project due to mitigation. Can you give us some specific examples of IND122-1

IND122 Bill Walsh, Eagle Point, OR

IND122-1 The EIS discloses environmental effects, it is not a decision document. The Commission will determine whether to approve or deny the project. Projects that cannot comply with FERC's requirements, follow FERC's Plans and Procedures, and comply with state and federal laws and regulations, including the requirements of NMFS and the FWS in their Biological Opinions, do not get built.

20150123-5190 FERC PDF (Unofficial) 1/23/2015 3:03:46 PM

IND122 Continued, page 2 of 2

impacts on water quality and environment that would or could result in denial of certification?
Thank you for this opportunity. IND122-1 cont.

20150126-5047 FERC PDF (Unofficial) 1/25/2015 12:38:50 PM

IND123

Julia Sommer, Ashland, OR.

I implore FERC NOT to OK the Jordan Cove/LNG project. At the very least, it would be a very great danger to the many waterways it would cross, including the wild and scenic Rogue River and its tributaries. Why would the health and safety of Oregonians - both human and non-human - be put at risk for the benefit of a private Canadian corporation? Seems insane to me. IND123-1

The project would also contribute greatly to global warming, which is accelerating alarmingly due to projects such as Jordan Cove/LNG. IND123-2

The jobs excuse is a mirage - a few temporary jobs that would jeopardize the livelihood of so many Oregonians employed in the tourism, fishing, and timber industries. The economy of the entire state could/would be impacted by a serious spill/accident, which seem to happen on a pretty regular basis. IND123-3

Please protect Oregonians and our waterways. Thank you.

Julia Sommer
Ashland, OR

IND123 Julia Sommer, Ashland, OR

IND123-1 Comment noted. General effects on fish and other aquatic resources are discussed in section 4.6.2. Effects on listed species, including salmon, are presented in section 4.7.1.3

IND123-2 See the response to IND1-1.

IND123-3 Comment noted. Refer to section 4.9 for a discussion on temporary and permanent jobs associated with the Project.

20150126-5067 FERC PDF (Unofficial) 1/25/2015 10:55:36 PM

IND124

Karol Strane, Rogue River, OR.
Dear FERC,

I request an extension for the comment period on CP-483-000 and CP-492-000. The state of Oregon does not at this time, January 2015, have spill cleanup standards, or methods for any releases from a LNG facility or vessel, of 10,000 gallons or more. The pipeline mentioned above and all its counterparts are included in this amount. IND124-1
FERC should not try to construct and operate these projects when the state of Oregon is not prepared to protect its residents per ORS 468B and OAR 340-141. IND124-2

Thank you.

IND124 Karol Strane, Rogue River, OR

IND124-1 The FERC decided not to extend the 90-day period for comments on the DEIS past February 13, 2015.

IND124-2 Comment noted.

20150126-5069 FERC PDF (Unofficial) 1/26/2015 1:59:10 AM

IND125

Tom Martin, North Bend, OR.
To: FERC
EIS public input
Jordan Cove Energy Project CP13-483

I wish to make a statement in support of the Jordan Cove LNG project in Coos Bay, Oregon. I have gone to several meetings, researched both sides of this proposed terminal & pipeline and though there are both positives and negatives to this project it seems best in the public interest to move forward.

Even though there are not a lot of permanent jobs created it opens the door to our small port becoming a deep water port which will bring much needed economic growth to this community as well as all of Oregon. It is very short sighted to think that this project will only provide the few hundred jobs and overlook the huge amount of tax revenue it will bring to every county the pipe line runs through but especially to our economically depressed county of Coos where the terminal will be built. Obviously there will be support and periphery jobs created & it seems clear that this will mushroom as our port attracts other interests. This is a huge economic stimulus for our entire state. IND125-1

Natural gas does contribute to carbon dioxide emissions like all fossil fuels but is the best of them all. In addition, I don't believe renewable energy sources can provide the energy needs for a society that is finding more and more uses for electricity and other modern conveniences that require energy use in some way. Environmental issues concern us all but only the wealthy can afford the cost of forcing renewable fuels to be the only acceptable source in today's world as now constituted.

I hope we continue to develop alternative sources of energy but for now natural gas is one of the best fuels available and we should help the rest of the world if possible. It is hypocritical to complain about "Global" warming and then complain that this project does not economically benefit our nation or locality enough. There are 3 billion people still using wood or worse to cook & keep warm which is much worse for global warming than natural gas. Let's hope some of the undeveloped world gets some of this gas in the future. Let's be big minded.

Thanks,

Tom Martin

IND125 Tom Martin, North Bend, OR

IND125-1 Comment noted.

20150120-0136 FERC PDF (Unofficial) 01/20/2015

ORIGINAL CP13-483 CP13-492 IND126

January 8, 2015

Secretary,
Federal Energy Regulatory Commission
888 First St., NE
Washington, D.C. 20426

Re: The Pacific Connector pipeline

What the Pacific Connector pipeline boils down to is allowing a foreign corporation to dig a huge ditch through some of the Pacific Northwest's most scenic and most productive land, pushing landowners (taxpayers) off their property or denying them the use of it, so a pipeline can be constructed to move natural gas to a yet-to-be-built port that may or may not provide a few jobs to an unknown few people, in order for the gas to be shipped to a different foreign country, all to make this Canadian Corp. lots of money. A corporation – it must be pointed out – that today has Canadian ownership, but can at any moment be sold to just about anyone.

Coupled with the Keystone Pipeline, America is about to be reduced to a pass-through: just a place you cross to get to somewhere else, and all for, possibly, a few jobs. This country experienced a downturn. It was bad, but we've weathered worse. Why are we running scared? Why are we giving away so much for so little? It's time to stop. Let's show some courage – make our founding fathers proud. Stop giving away what they and so many generations since have fought and died, worked and sacrificed to preserve.

Members of the commission: please be sure you understand the meaning of the terms: right-of-way, granting easement, and eminent domain. Then, just say no to the Pacific Connector pipeline. It does not benefit America; it should not be allowed to diminish her. IND126-1

Evalyn Lemon
Evalyn Lemon
4844 Tiller Trail Hwy
Canyonville, OR 97417

FILED
SECRETARY OF THE
COMMISSION
2015 JAN 20 P 12: 16
FEDERAL ENERGY
REGULATORY COMMISSION

IND126 Evalyn Lemon, Canyonville, OR

IND126-1 Comment noted.

20150120-0140 FERC PDF (Unofficial) 01/20/2015

Richard Turner
Post office Box 991
Roseburg OR 97470

CP13-492

IND127

ORIGINAL

FILED
SECRETARY OF THE
COMMISSION
2015 JAN 20 P 12: 04
FEDERAL ENERGY
REGULATORY COMMISSION

January 9, 2015

Ms. Kimberly Bose
Secretary
Fed. Energy Regulatory Commission
888 First Street N.E.
Room 1A
Washington DC 20426

Dear Ms. Bose:

I oppose construction of the LNG Pipeline from Malin, Oregon to Coos Bay, Oregon ... because a private, foreign company (Veresen) should not use "eminent domain" to take away land from United States citizens. IND127-1

Sincerely yours,
Richard Turner

IND127 Richard Turner, Roseburg, OR

IND127-1 Comment noted.

20150126-0099 FERC PDF (Unofficial) 01/26/2015

IND128

ORIGINAL

To: Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St. N.E., Room 1A
Washington, DC 20426

From: Larry Thompson

Date: 18 January 2015

Subject: CP13-483-000, Jordon Cove Oregon

This project, proposed by a foreign company, was for importing LNG when it began. That would have been an U.S. public benefit. Since then, new methods of extracting natural gas have increased the supply of U.S natural gas. Now the project is for exporting LNG. It is no longer for the public benefit. It is for the benefit of a foreign company. IND128-1

It should not be approved!

FILED
SECRETARY OF THE
COMMISSION
2015 JAN 26 P 12: 14
FEDERAL ENERGY
REGULATORY COMMISSION

IND128 Larry Thompson

IND128-1 Comment noted. The DEIS does not state that the Project would result in the public benefit. The Commission will make that determination.

20150126-0100 FERC PDF (Unofficial) 01/26/2015

CP13-483

Charlotte Hennessy
P O Box 296
170 Church St.
Dillard, OR 97432
541-679-4825

ORIGINAL

JAN 26 2015 IND129

Jan. 20, 2015

Secretary of the Commission
Federal Energy Regulatory Commission
888 First St. NE
Washington, DC 20426

Re: Pacific Connector Pipeline to Jordan Cove

We live close to the area that the pipeline will cross and have serious concerns about it.

1) It promises jobs, but most will be temporary. IND129-1

2) Our hills/mountains are very rocky and steep and the line is planned to follow the ridges. The construction will have to involve a huge road, area to bury a large pipeline, with blasting, etc. This will cause a huge area of damage to the landscape. IND129-2

3) The most dangerous part of this project is that it would allow a foreign company to use the government's right of eminent domain to acquire private land for the line. This is a horrible precedent to set for our nation. IND129-3

4) I have a major objection to exploiting our natural resources to sell overseas. Bad idea if you look toward the future. IND129-4

5) The terminal at Coos Bay would tear up the north spit area of the bay and create a large industrial complex that could pollute the area as well as destroying habitat. IND129-5

6) There is always a concern about leaks in the future. IND129-6

Please deny this project. Not a good idea!!

Sincerely,
Charlotte Hennessy
Charlotte Hennessy

IND129 Charlotte Hennessy, Dillard, OR

IND129-1 Section 4.9.1.4 discloses that most of the jobs would be temporary.

IND129-2 Effects due to roads are discussed in section 4.10. Effects due to blasting in sections 4.2.2 and 4.2.3.

IND129-3 Comment noted.

IND129-4 Comment noted.

IND129-5 Operation of the Jordan Cove LNG terminal-South Dunes Power Plant complex would affect uplands containing 178 acres of current industrial land, 76 acres of forest, and 68 acres of open land.

IND129-6 See the response to IND1-2.

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IND130

Comments on

Jordan Cove Energy and Pacific Connector Gas Pipeline
Draft Environmental Impact Statement

Proposed Route versus Blue Ridge Alternative Route

Submitted by Mark Sheldon

In cooperation with Phil Hall and Owen Schmidt

Mark Sheldon Comments Page 1

IND130 Mark Sheldon, Phil Hall, Owen Schmidt

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Executive Summary

Our comments factually demonstrate that the DEIS conclusion that the Proposed Route is environmentally preferable and that the Blue Ridge Alternative Route has no significant environmental advantage is without basis because:

- DEIS rationale that Blue Ridge Alternative Route would impact critical habitat is in error because no critical habitat exists in the vicinity of the Blue Ridge Alternative Route.
- The amount of LSOG Forest impacted by Blue Ridge Alternative Route would be an inconsequential 0.00014 of total LSOG on Coos Bay District BLM.
- Blue Ridge Alternative Route would not cross an additional northern spotted owl home range compared to the Proposed Route.
- DEIS assertion that property values would not be affected lacks analysis and is in error.
- Proposed Route would impact a contaminated site with hazardous substances.
- DEIS violates NEPA regulations and requirements in every instance when comparing impacts of Blue Ridge Alternative Route and Proposed Route.
- DEIS comparison of Blue Ridge Alternative Route and Proposed Route contains many substantive factual errors, incomplete information and omission of essential information.
- DEIS comparison of Blue Ridge Alternative Route and Proposed Route has no analysis, discussion or exposition of cataloged environmental effects.
- Proposed Route violates Pacific Connector's criteria to avoid impacts to waterbodies by locating the pipeline on ridgetops such as the Blue Ridge Alternative Route.
- Proposed Route violates Pacific Connector's criteria to avoid geologic hazards where feasible.

Our comments factually demonstrate that the Blue Ridge Alternative Route is environmentally preferable and has significant environmental advantages because:

- Blue Ridge Alternative Route would be located on stable ridgetop and avoid a rapidly moving land slide crossed by the Proposed Route.
- Blue Ridge Alternative Route would cross landslides totaling 4,370 feet while the Proposed Route would cross landslides totaling 8,850 feet
- Blue Ridge Alternative Route would avoid three floodplains which the Proposed Route would cross in violation of Executive Order 11988
- Blue Ridge Alternative Route would cross only 9 waterbodies while the Proposed Route would cross 65 waterbodies.

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- Blue Ridge Alternative Route would not impact any domestic water sources while the Proposed Route would impact two domestic water sources.
- Blue Ridge Alternative Route would cross 23 landowner parcels with 3 homes while the Proposed Route would cross 61 landowner parcels with 33 homes.
- Blue Ridge Alternative Route would have no eminent domain issues while on the Proposed Route 15 landowners have expressed their intention to legally resist right-of-way acquisition by PCGP.
- Blue Ridge Alternative Route would cross less fish bearing streams than the Proposed Route
- Blue Ridge Alternative Route parallel to ridgetop logging roads would have significant less environmental impact than Proposed Route collocated on rugged, broken and difficult terrain of the BPA powerline right-of-way.
- Blue Ridge Alternative Route impact to Late-Successional Reserves would be an inconsequential 0.00005 of total Late-Successional Reserves on Coos Bay District BLM.

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Synopsis: The Blue Ridge Alternative Route has significant environmental advantages over the Proposed Route, according to the analysis we present here. The fastest route to success for building this pipeline — the route of least resistance — we believe, would be the Blue Ridge Alternative Route. We urge the lead agency, the FERC, to switch to the Blue Ridge Alternative Route as the proposed or preferred route for the reasons we present here.

1. Introduction

The Jordan Cove Energy and Pacific Connector Gas Pipeline Draft Environmental Impact Statement (DEIS) analyzed in detail an alternative to the Proposed Route[1] segment between MP 11.R and MP 21.8. This alternative is known as the Blue Ridge Alternative Route[2]. The DEIS acknowledges that the Blue Ridge Alternative Route is constructible and selectable as a practicable route. The DEIS concludes that the Proposed Route from MP 11.1R to MP 21.8 is environmentally preferable to the Blue Ridge Alternative Route and that the Blue Ridge Alternative Route would not offer significant environmental advantages.

The rationale for this conclusion is given as long term and irretrievable impacts on the Blue Ridge Alternative Route to late-successional old growth (LSOG) forest and to critical habitat compared to short term impacts on the Proposed Route to waterbodies and their associated aquatic resources. The detailed comments below factually demonstrate that this conclusion is without basis and in error by revealing substantive errors in the DEIS comparison of the two routes. These errors include false assumptions, the use of incomplete or erroneous information, the omission of essential information, and flawed or missing analysis.

Our detailed comments show that the amount of LSOG impacted by the Blue Ridge Alternative Route to be inconsequential and that there is no critical habitat anywhere in the vicinity of the Blue Ridge Route. We also show that there would be significantly less impacts to waterbodies, fish bearing streams, and domestic water sources on the Blue Ridge Alternative Route compared to the Proposed Route. We establish in the detailed comments that the Proposed Route crosses a Rapidly Moving Landslide and rough, broken terrain while

[1] The DEIS uses the term "proposed route" to refer to the entire length of the pipeline from Coos Bay to Malin, Oregon. In our comments, we are only concerned with the portion of the proposed route between MP 11.1R and 21.8 in Coos County. We capitalize "Proposed Route" when we are referring to this segment of the proposed route which is compared with the Blue Ridge Alternative Route in the DEIS pp. 3-26 – 3-28.

[2] The DEIS refers to the alternative to the Proposed Route analyzed in detail as the Modified Blue Ridge 2013 Alternative Route. In our comments, we refer to this alternative as the Blue Ridge Alternative Route.

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the Blue Ridge Alternative Route would be located on or near a stable ridgetop. We show that the Proposed Route is in violation of an executive order by construction of the pipeline in floodplains for which there is a feasible and practicable alternative. We demonstrate that the impacts to landowners are significantly greater than that which is disclosed and that the analysis of the impacts to property values is fundamentally flawed.

In addition, our detailed comments show the DEIS violates National Environmental Policy Act (NEPA) regulations and requirements in every instance when comparing the impacts of the Proposed Route and Blue Ridge Alternative Route on various individual resources.

The FERC's evaluation criteria for selecting alternatives are set forth in the DEIS:

1.) "Technically and economically feasible, reasonable, and practical;"
2.) "Offer a significant environmental advantage over the proposed action; "
3.) "Have the ability to meet the objectives of the Project".

The DEIS acknowledges that the Blue Ridge Alternative Route is technically and economically feasible and that it meets the objectives of the pipeline project. Our detailed comments authoritatively demonstrate that the Blue Ridge Alternative Route is environmentally preferable to the Proposed Route, and that the Blue Ridge Alternative Route offers significant environmental advantages over the Proposed Route.

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2. Criteria for Selecting Alternatives and Use of Data in DEIS Table 3.4.2.2-1

The DEIS states in the introduction of Chapter 3.0 Alternatives (DEIS pg. 3-1) that: "The FERC's evaluation criteria for selecting alternatives include whether they:

- Are technically and economically feasible, reasonable, and practical;
- Offer a *significant* environmental advantage over the proposed action(*emphasis added*);
- Have the ability to meet the objectives of the Project"

The DEIS cites the second bullet criterion as the rationale in selecting the Proposed Route and rejecting the Blue Ridge Alternative Route: "Therefore, the Modified Blue Ridge 2013 alternative would not offer *significant* environmental advantages over the proposed route." (emphasis added) (DEIS pg. 3-26).

In using "significant environmental advantage" as a criterion for selecting alternatives, the DEIS must adhere to the National Environmental Policy Act definition of significantly.

"*Significantly* as used in NEPA *requires* consideration of both *context and intensity*" (*emphasis added*). (40 CFR 1508.27)

Context means that the significance of an action must be analyzed in several contexts such as society as a whole, the affected region, the affected interests and the locality (40 CFR 1508.27 (a)). IND130-1

Intensity refers to the severity of the impact (40 CFR 1508.27(b)).

Nowhere in the "analysis" comparing the Proposed Route to the Blue Ridge Alternative Route (DEIS pp. 3-26 – 3-28) does the DEIS provide the required context and intensity information needed to support its conclusion regarding significance for any of the impacts which are addressed in the comparison. The analysis is thus substantively flawed and the DEIS conclusions regarding significance and the selection of the Proposed Route over the Blue Ridge Alternative Route are therefore without basis.

The DEIS selection of the Proposed Route over the Blue Ridge Alternative Route is based almost entirely on the comparison of data in DEIS Table 3.4.2.2-1, "Comparison of Pacific Connector's Proposed Route with the Modified Blue Ridge 2013 Alternative" (DEIS pg. 3-28). The table simply displays or sets forth facts. The DEIS provides no exposition or analysis IND130-2

Mark Sheldon Comments Page 7

IND130 Continued, page 7 of 48

IND130-1 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

IND130-2 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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of the data in the table. The National Environmental Policy Act requires that an environmental impact statement: "Rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)). In addition, substantial case law requires that under NEPA the agency must take a "hard Look. A display or setting forth of facts without exposition or analysis is not acceptable under NEPA. "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). IND130-2 cont.

Case by case specific examples of the DEIS failure to provide adequate and required analyses in comparing the Proposed Route and Blue Ridge Alternative Route are provided in the following detailed comments.

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3. Waterbodies, Domestic Water Sources and Contaminated Sites

SUMMARY: The DEIS falsely concludes the Blue Ridge Alternative Route, which crosses only 9 water bodies, does not have significant environmental advantages over the Proposed Route, which crosses 65 water bodies. Because the DEIS does not include a reasonably complete analysis of possible mitigation measures for adverse effects on water supplies and disturbance to hazardous sites, the DEIS is not complete; it does not ensure that environmental consequences have been fairly evaluated.

DEIS Table 3.4.2.2-1 "Comparison of Pacific Connector's Proposed Route with the Modified Blue Ridge 2013 Alternative" provides a comparison of the Proposed Route with the Blue Ridge Alternative Route and is used as the basis for conclusions regarding the two routes in Section 3.4.2.2. (DEIS pp. 3-26 – 3-28). The number of water bodies listed in DEIS Table 3.4.2.2-1 for the Proposed Route is 12 while for the Modified Blue Ridge Variation (Blue Ridge Alternative Route) the number is 9. The comparison of these numbers is substantively and by order of magnitude misleading to the public and decision maker. Footnotes within the table reveal that the actual number of water bodies crossed by the Proposed Route as established by field surveys is 65. The appropriate comparison of waterbodies crossed should consequently be: Proposed Route: 65 vs. Blue Ridge Alternative Route: 9. Therefore the DEIS conclusion that "the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26) based on the comparison in accompanying DEIS Table 3.4.2.2-1 is substantively flawed and in error. This mistake does not constitute a "fly speck" inaccuracy but is a substantive and order of magnitude error. The National Environmental Policy Act (NEPA) requires that: ". . .it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among the options by the decision maker and the public" (40 CFRR 1502.14). By use of the incorrect numbers in DEIS Table 3.4.2.2-1, the DEIS failed to comply with NEPA and reached an incorrect conclusion in selecting the Proposed Route over the Blue Ridge Alternative Route. IND130-3

The DEIS states: "Because of its linear nature, it is not possible to avoid crossing waterbodies and riparian areas. However, the number of stream crossings required for the pipeline was minimized by Pacific Connector's identification of a pipeline route that follows ridgelines and watershed boundaries to ensure the long-term safety, stability and integrity of the pipeline as it crosses the Coast and Cascade mountain ranges." (DEIS pg. 4-381). The DEIS selection of the Proposed Route and rejection of the Blue Ridge Alternative Route conflicts IND130-4

Mark Sheldon Comments Page 9

IND130 Continued, page 9 of 48

IND130-3 As stated in the EIS, the values reported in the table are based on desktop data. Conducting a comparison between field data for the proposed route (i.e., 65) and desktop data for the Blue Ridge Alternative as you suggest, would be misleading and inaccurate (e.g., it would be like comparing apples and oranges). Surveys have not been completed for the Blue Ridge Alternative, so the number of waterbodies crossed by this route is only known based on desktop data, which is why it is compared to the desktop data for the proposed route.

IND130-4 Selection or rejection of an alternative route over the proposed route is not based on a single resource (as implied in this comment), but is a decision based on multiple factors and resource effects. The FEIS contains a new Appendix (i.e., Appendix X), that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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with this statement. The Blue Ridge Alternative Route would cross significantly fewer waterbodies than the Proposed Route (Propose Route: 65, Blue Ridge Alternative Route: 9). The Blue Ridge Alternative Route is a practical, constructible and selectable alternative which is located on ridgelines. By Pacific Connector's criteria, the Blue Ridge Alternative should be selected as the pipeline route. IND130-4 cont

The DEIS in its comparison and analysis of the Proposed Route versus the Blue Ridge Alternative Route fails to describe or discuss any of the water bodies listed in DEIS Table 3.4.2.2-1. A simple display of numbers does not meet the requirements to "rigorously explore" or to take a "hard look." A display or setting forth of facts without exposition or analysis is not acceptable under NEPA. "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). *Oregon Natural Desert Association v. Bureau of Land Management*, 531 F.3d 1114, 1142 (9th Cir. 2008) (EIS not adequate) ("Here, the BLM used *no* method to analyze or plan for the management of such values. We cannot defer to a void."). IND130-5

Additionally, in its comparison and analysis of the Proposed Route versus the Blue Ridge Alternative Route, the DEIS fails to discuss two private domestic water sources along the Proposed Route. The DEIS acknowledges that points of water diversion within 150 feet of the construction work area could be impacted (DEIS pg. 4-377). One domestic water source located at MP 12.07 is from an unnamed stream and is approximately 80 feet from the construction work area. The second domestic water source located at MP 13.8 is from a spring and is within the construction work area. The DEIS states that if it were determined that there is an impact to a water supply, a temporary water supply would be provided and if necessary the impacted water supply would be replaced with a permanent water supply (DEIS pg. 4-377). Such a statement does not relieve the DEIS of its obligation under NEPA (40 CFR 1502.2, 40 CFR 1502.14(a), 40 CFR 1502.14(b)) to address the impacts to affected domestic water sources in its comparison and analysis of the Proposed Route versus the Blue Ridge Alternative Route. IND130-6

A still further omission in the DEIS comparison and analysis of the Proposed Route versus the Blue Ridge Alternative Route is its failure to discuss the Coquille Yard site at MP 18.9 which has been identified by the State to contain hazardous substances. The pipeline would impact nine sites investigated by the Oregon Department of Environmental Quality (ODEQ) for the release of hazardous substances into the site's environment. ODEQ has determined that four of those sites require no further action. Included in the remaining five sites is the Coquille Yard (DEIS pg. 4-327). This site is proposed as a contractor/pipe storage yard. DEIS Table 4.3.2.3-2, "Identified Cleanup Sites Along the Pacific Connector Pipeline" lists IND130-7

IND130 Continued, page 10 of 48

IND130-5 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

IND130-6 The Final EIS includes an appendix comparing the Blue Ridge Alternative to the comparison portion of the Proposed Route. The appendix includes a comparison of water supply points of diversion between the two routes.

IND130-7 The Final EIS has been updated to reflect new information filed by Pacific Connector in February 2015. This filing confirmed that contaminated soil at the Coquille Yard site was removed and treated in 1995. In 1998, the ODEQ recommended No Futher Action for the site. Pacific Connector has identified the yard for staging of pipe, equipment, or other construction supplies and materials and the use would be surface use only. Pacific Connector would consult with ODEQ prior to use of the site to confirm that the intended use is consistent with the protections required for the property. The Final EIS also includes an appendix comparing the Blue Ridge Alternative to the comparison portion of the Proposed Route. The appendix includes a discussion of contaminated soils and indicates that neither route would cross active cleanup sites.

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the hazardous substances and waste types at the Coquille Yard as heavy oils, polychlorinated biphenyl benzene, xylenes, polyaromatic hydrocarbons, and asbestos. The media contaminated is surface water, ground water and soil. The potential impact notes asbestos present in on-site debris piles related to inadequate abatement and characterization, and that it may present an air quality problem if disturbed. (DEIS pg. 4-328)

The DEIS states that prior to the end of the comment period on the DEIS, a plan would be developed detailing how the contaminated sites would be avoided or contaminants would be removed (DEIS pg. 4-327). Without the information of how the site would be avoided or how the contaminants would be removed included in the Draft Environmental Impact Statement, the public and decision maker have no way of assessing the effectiveness of the measures or any associated impacts. The DEIS is unclear as to whether the Coquille Yard site is an integral part of the Proposed Route and therefore should be included in the comparison and analysis of the Proposed Route versus the Blue Ridge Alternative Route. This missing information regarding possible avoidance or cleanup of the site and the site's relationship to the Proposed Route is essential for a reasoned choice among the alternatives. NEPA requires that if incomplete information is essential for a reasoned choice among the alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement (40 CFR 1502.22(a)). The failure to include this information in the DEIS is a violation of NEPA. *Colorado Environmental Coalition v. Dombeck*, 185 F.3d 1162, 1173-74 (10th Cir. 1999) (Such discussion must be "reasonably complete" in order to "properly evaluate the severity of the adverse effects" of a proposed project prior to making a final decision. *Methow Valley*, 490 U.S. at 352, 109 S.Ct. 1835; *see also Holy Cross*, 960 F.2d at 1523. It is not enough to merely list possible mitigation measures. *See Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998)); *Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 473 (9th Cir. 2000) (An EIS is not complete unless it contains "a reasonably complete discussion of possible mitigation measures." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989). That requirement is implicit in NEPA's demand that an EIS must discuss "'any adverse environmental effects which cannot be avoided should the proposal be implemented.'" *Id.* at 351-52, 109 S.Ct. 1835 (quoting NEPA, 42 U.S.C. §4332(C)(ii)); *see also* 40 C.F.R. §1502.16(h) (stating that an EIS must contain "[m]eans to mitigate adverse environmental impacts")); *Westlands Water District v. U.S. Department of the Interior*, 376 F.3d 853, 872-73 (9th Cir. 2004) (An agency must discuss mitigation measures "in sufficient detail to ensure that environmental consequences have been fairly evaluated.... A mere listing ... is insufficient." *Neighbors of Cuddy Mountain v. United States Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir.1998) (internal quotations and citations omitted). Doing so helps to ensure that the agency has taken a "hard look" at the environmental consequences of its proposed action. *Robertson*, 490 U.S. at 352, 109 S.Ct. 1835.).

IND130-7 cont

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The National Environmental Policy Act requires that an environmental impact statement: "Rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)). In addition, substantial case law requires that under NEPA the agency must take a "hard Look" (Western North Carolina Alliance v. North Carolina Dept. of Transportation (4th Circuit 2003)). A simple display of numbers in the DEIS does not meet the requirements to "rigorously explore" or to take a "hard look". A display or setting forth of facts without exposition or analysis such as in the case of the comparison and analysis of the Proposed Route versus the Blue Ridge Route is not acceptable under NEPA. "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). IND130-8

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IND130-8 The DEIS has rigorously explored and objectively evaluated a range of reasonable alternatives and taken a hard look at the impacts.

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4. Late-Successional Old Growth (LSOG) Forest

SUMMARY: The DEIS falsely concludes there will be a greater adverse effect on LSOG forests by the Blue Ridge Alternative Route, whereas we contend the difference is either non-existent or so small as to be inconsequential. Because the DEIS does not reveal whether the affected LSOG areas will in fact be logged in any future scenario under relevant forest planning documents, the real meaning of placement into LSOG forests cannot be understood. We contend the difference between the Proposed Route and the Blue Ridge Alternative Route is either non-existent with respect to LSOG, or at least the DEIS does not show with evidence and analysis what difference there may be, and why the Blue Ridge Alternative Route is comparatively any less advantageous than the Proposed Route.

In support of the selection of the Proposed Route and rejection of the Blue Ridge Alternative Route, the DEIS cites the "crossings of LSOG forest" by the Blue Ridge Alternative Route (DEIS pg. 3-26). Neither the text (DEIS pg. 3-26) or DEIS Table 3.4.2.2-1 (DEIS, pg. 3-28) describe what the actual effect would be to the LSOG forest. In addition, the DEIS does not provide context or intensity information as required by NEPA in the use of "significance" in its conclusion regarding the environmental advantages of Blue Ridge Alternative Route versus the Proposed Route (40 CFR 1508.27). The public and decision maker must speculate as to nature and size of the effects, i.e., whether the effects on LSOG would be minimal or substantial in severity. The DEIS fails to describe the actual specific effects to LSOG forest and why any such affect would be of significance or otherwise important. The DEIS simply catalogs affected acres without providing a discussion and analysis of the impacts as required under NEPA or the required discussion of the context and intensity of the impacts to support a conclusion of significance. IND130-9

The DEIS describes the Blue Ridge Alternative Route as affecting three times more acres of LSOG forest. The use of "three times more" is clearly meant to imply that the difference in affected acres between the two routes is substantive. In fact, DEIS Table 3.4.2.2-1 reveals that the difference between the alternative routes in acres of affected LSOG forest is only eleven acres (Proposed Route -6 acres, Blue Ridge Alternative Route -17 acres). The DEIS fails to discuss or analyze the importance of a difference of eleven acres, or provide context and intensity as required by NEPA. Based on the information in the DEIS, neither the public nor the decision maker know whether the eleven acres represent a very large percent of all LSOG in a given geographic area or a very small percent. Because of this lack of essential information needed for a reasoned choice among the alternative routes, the public and IND130-10

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IND130-9 In response to comments on the DEIS, the FEIS includes appendix Q that provides a comprehensive comparison between the proposed route and the route filed by the applicant for the Blue Ridge Alternative as described in section 3.4.2.2 of the FEIS. Table 3.4.2.2-1 of the FEIS illustrates that there is a difference in the impacts to LSOG habitat between the proposed route (6 acres) and the Blue Ridge Alternative (17 acres). A detailed comparison of cumulative effects in appendix Q provides additional information on foreseeable actions by BLM that could impact LSOG habitat on federal lands. With respect to LSOG habitat, the evidence available to FERC, including the recent identification of additional habitat occupied by MAMU (unmapped LSRs on BLM land) appears to support the FERC determination that the proposed route is more advantageous. In general terms, a discussion of impacts to LSOG habitat is provided in chapter 4.5.1 of the FEIS. A discussion of impacts to LSOG habitat specific to the Blue Ridge Alternative is provided in section 3.1 of appendix Q. This appendix, as summarized in section 3.4.2 of the FEIS describes the nature and size of the effects comparatively between the proposed route and the Blue Ridge Alternative.

IND130-10 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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decision maker are left to speculate regarding these questions and others, such as whether the acres of affected LSOG forest consist of scattered, disconnected parcels or whether they are contiguous; whether the effects are to the edge or to the interior of the LSOG stands, or whether there is the documented use of the affected LSOG acres by species protected by law. IND130-10 cont

Some of the context and intensity of the effects on LSOG forest can begin to be understood by an examination of the Bureau of Land Management's Coos Bay Resource Management Plan and Record of Decision. The Record of Decision (ROD) Table 2 states that there are 114,000 acres of mature and old growth forest (approximately equivalent to LSOG) on the Coos Bay District (ROD pg. 13). This information shows that the affected acres of LSOG discussed in the comparison of the Proposed Route versus the Blue Ridge Alternative Route represents 0.00014 of the overall LSOG on Coos Bay District, and is therefore most likely inconsequential.

Still further essential information that is missing from the comparison and analysis of the Proposed Route and Blue Ridge Alternative Route in regards to LSOG forest is where the affected LSOG forest occurs in terms of land ownership. An on-the-ground review and examination of aerial photographs indicates that there is little or no LSOG forests on private lands in the area of the Proposed or Blue Ridge Alternative routes. Bureau of Land Management maps show that all of the Bureau lands in this area are designated as General Forest Management Area. Except for areas within the General Forest Management Area known as Unmapped Late-Successional Reserves which are protected for the northern spotted owl, marbled murrelet, and certain other species all of the forest lands including LSOG forest located in the General Forest Management Area would be scheduled for harvest under the Bureau's timber program. Neither DEIS Table 3.4.2.2-1 or the text which compares the two routes indicates whether the affected LSOG forest is protected as Unmapped Late-Successional Reserves. If it is thus protected, the comparison of effects is misleading because the effects are listed in two other locations in the table and discussed separately in the text (marbled murrelet stands and Late-Successional Reserves), therefore essentially double counting the effects. If the affected LSOG is not part of an Unmapped Late-Successional Reserve, then the LSOG is part of the General Forest Management Area and would be scheduled for harvest under the Bureau's timber program. As part of the General Forest Management Area, the LSOG would thus eventually be removed regardless of the pipeline location. This information is not included in the DEIS and is essential for the public and decision maker to understand the effects of the Proposed Route versus the Blue Ridge Alternative Route, and for making a reasoned choice among the alternatives. IND130-11

The DEIS highlights the issue of LSOG forest in its rationale for selecting the Proposed Route and rejecting the Blue Ridge Alternative Route. Other forest seral stages are shown in IND130-12

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IND130-11 Additional analysis of the Blue Ridge Alternative and the comparison portion of the proposed route is included in Appendix Q of the FEIS.

IND130-12 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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DEIS Table 3.4.2-1, i.e., regeneration forests (0 to 40 years of age) and mid-seral forests (40-80 years of age), however, these are not mentioned in the text which compares the two routes. No justification is given for this selective analysis. There are no federal or state laws that protect LSOG forest to the exclusion of other forest seral stages. IND130-12 cont.

In its analysis of the effects on LSOG forest associated with the Proposed Route v. Blue Ridge Alternative Route, the DEIS fails to meet the National Environmental Policy Act requirements to "Rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)), "Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits" (40 CFR 1502.14(b), and to take a "hard Look" (Western North Carolina Alliance v. North Carolina Dept. of Transportation (4th Circuit 2003)). A simple display of numbers in the DEIS does not meet the requirements to "rigorously explore" to "devote substantial treatment "or to take a "hard look". "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). Therefore the DEIS conclusion that the Proposed Route is environmentally preferable and that "the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26) in regards to LSOG forest is without basis and in error — in short, it is arbitrary or capricious. IND130-13

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IND130-13 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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5. Northern Spotted Owl

SUMMARY: The DEIS falsely concludes the Proposed Route would cross only one northern spotted owl home range, while the Blue Ridge Alternative Route would cross two, and falsely concludes the Blue Ridge Alternative Route would affect northern spotted owl critical habitat. The DEIS uses a false and discredited method which has been disallowed on BLM managed lands in western Oregon to determine one of the home ranges of the northern spotted owl. We contend that the home range where it is crossed by the Blue Ridge Alternative Route is not spotted owl habitat at all and so there would be no adverse effects on suitable spotted owl habitat. Finally, we contend that in the context of the spotted owl the Blue Ridge Alternative Route is no less advantageous than the Proposed Route, and it is arbitrary and capricious for the DEIS to conclude that the Proposed Route is environmentally preferable.

The DEIS comparison of the effects of the Proposed Route versus the Blue Ridge Alternative Route is substantively flawed in its analysis and conclusions regarding affected home ranges and effects to critical habitat of the northern spotted owl.

DEIS Table 3.4.2.2-1, "Comparison of Pacific Connector's Proposed Route with the Modified Blue Ridge 2013 Alternative", and the text which discusses the effects of the two routes state that the Proposed Route would cross one northern spotted owl home range (42310) while the Blue Ridge Alternative Route would cross two northern spotted owl home ranges (42310, P801G) (DEIS pp. 3-26, 3-28). The DEIS includes P801G as one of the home ranges crossed. The designation P801G indicates that this site was based on a U.S. Fish and Wildlife Service process in which the presence of habitat as indicated by remote sensing or timber inventory data is used to establish presumed occupancy by owls and not based on the actual confirmation of occupancy through on-the-ground surveys according to protocol by trained wildlife biologists. In Swanson Group Mfg. LLC. v. Salazar (District Court D.C. 2013), the Federal court ruled that the protection of such sites on Bureau of Land Management administered lands in western Oregon without valid surveys to confirm the presence of northern spotted owls was disallowed. In compliance with this court ruling, the Bureau of Land Management does not recognize sites with presumed occupancy based on habitat information. (When planning any activity that would disturb suitable habitat, the Bureau does on-the-ground surveys according to protocol to establish the presence of northern spotted owls.) Because of the use of the disallowed presumed site, DEIS Table 3.4.2.2-1 and the IND130-14

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IND130-14 Additional analysis of the Blue Ridge Alternative and the comparison portion of the proposed route is included in Appendix Q of the FEIS.

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accompanying text comparing the Proposed Route versus the Blue Ridge Alternative Route is substantively flawed in regards to the number of northern spotted owl home ranges affected. IND130-14 cont.

In addition, the DEIS merely acknowledges that the Blue Ridge Alternative Route would cross the northern spotted owl home range of 42310. The DEIS does not describe the actual effects to the home range. The National Environmental Policy Act requires that an EIS "Rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)), and requires that an EIS take a "hard Look" (Western North Carolina Alliance v. North Carolina Dept. of Transportation (4th Circuit 2003)). A simple acknowledgement that the Blue Ridge Route would cross home range 42310 does not meet the requirements to "rigorously explore" or to take a "hard look". "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). See also, 40 CFR 1502.24 ("Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."); 40 CFR 1500.1(b) ("NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA."). IND130-15

A more detailed examination of the Blue Ridge Alternative Route in relation to the northern spotted owl home range 42310 indicates that the route would affect approximately 1,000 feet of forested land within the home range by a construction work area approximately 95 feet wide for a total of approximately 2 acres of forest. (See aerial photo on page 22 of these comments.) An on-the-ground review reveals that this particular forested land crossed by the Blue Ridge Alternative Route consists of an even-aged uniform stand approximately 37 years old. The stand contains no remnants from previous stands, no standing snags, no trees with broken tops and no large woody debris on the forest floor. In the recovery plan for the northern spotted owl, the U.S. Fish and Wildlife Service has stated that the main habitat for the northern spotted owl consists of mature and old-growth forests with abundant logs, standing snags and trees with broken tops. Additional foraging or dispersal habitat may include younger stands such as even-aged pole sized stands, however, in order to be used by the spotted owl such stands should contain some roosting structures and foraging habitat or retained structural elements from previous older forests. The recovery plan states that there is no support for either positive or negative direct effects of intermediate-aged forest, i.e., all forest stages between sapling and mature, on either survival or reproduction of spotted owls. (Revised Recovery Plan for the Northern Spotted Owl, June 28, 2011, pp. A-9 – A-12). Based IND130-16

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IND130-15 Impacts to spotted owls due to the project crossing through their home ranges is disclosed in Section 4.6 and 4.7 of the EIS.

IND130-16 Chapter 3 of the Final EIS has been revised to reflect an updated analysis of the Blue Ridge Alternative (as further modified in 2015) compared to the Proposed Route. The updated comparison indicates that both routes cross 1 NSO home range (42310); thus, this point is not a substantive difference in potential effects between the routes.

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on these U.S. Fish and Wildlife Service criteria, the Blue Ridge Alternative Route would not have any substantive effect on habitat used by the northern spotted owl within home range 42310. Furthermore, this particular forest stand is scheduled by the landowner for harvest within about two years from present (Fred Messerle, Pers. Com. 2015). IND130-16 cont

In addition to the number of northern spotted owl habitats crossed, the DEIS bases its conclusion that the Proposed Route is environmentally preferable to the Blue Ridge Alternative Route on "long-term impacts and irretrievable loss of critical habitat that could not be easily mitigated" (DEIS pg. 3-26). In fact, as established by the U.S. Fish and Wildlife Service in its Final Rule for Designation of Revised Critical Habitat for the Northern Spotted Owl (50 CFR 17, 77 FR pp. 71876 – 72068 Dec. 4, 2012), there is no northern spotted owl critical habitat that exists anywhere near the Blue Ridge Alternative Route. IND130-17

In its support for selecting the Proposed Route and rejection of the Blue Ridge Alternative Route, the DEIS states that the additional crossings of northern spotted owl habitat would cause long-term impacts that could not be easily mitigated. As established above, there are no "additional crossings" of northern spotted owl habitat by the Blue Ridge Alternative Route. In addition, the DEIS does not describe what the "long-term impacts" to the habitat would be. As shown above, although both the Proposed Route and Blue Ridge Route cross the northern spotted owl home range (42310), there would be no impacts to suitable northern spotted owl habitat. Finally, as documented above, contrary to the DEIS assertion, there would be no irretrievable loss of critical habitat as none exists in the area. IND130-18

Because every assertion related to the northern spotted owl used in support of the DEIS conclusion that the Proposed Route is environmentally preferable to the Blue Ridge Alternative Route is in error, the conclusion itself is, therefore, substantively flawed and in error.

In addition, because the DEIS comparison of impacts to the northern spotted owl of the Proposed Route versus the Blue Ridge Alternative Route does not include the required consideration of context and intensity (40 CFR 1508.27), the DEIS conclusion regarding significance ("the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26)) is without basis and in error. IND130-19

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IND130-17 Language has been revised in the final EIS.

IND130-18 Language has been revised in the final EIS.

IND130-19 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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6. Marbled Murrelet

SUMMARY: The DEIS falsely states that the Blue Ridge Alternative Route would cause an irretrievable loss of marbled murrelet critical habitat, where in fact no such loss would occur. The Proposed Route would cross fewer stands of marbled murrelet habitat than the Blue Ridge Alternative Route, but the actual significance of this fact was not assessed in the DEIS as to the relevance to the effects on the marbled murrelet. We believe the Blue Ridge Alternative route would have an inconsequential impact because it follows or parallels existing roads and thus occupies at most the very edge of marbled murrelet habitat. At the very least we believe that the DEIS does not offer a reasonable basis to conclude the Proposed Route is environmentally preferable.

The DEIS comparison of the effects to the marbled murrelet of the Proposed Route versus the Blue Ridge Alternative Route is substantively flawed because it merely catalogs the effects and provides no discussion, exposition or analysis of the effects as required by the National Environmental Policy Act, and because it is based on false information.

DEIS Table 3.4.2.2-1, "Comparison of Pacific Connector's Proposed Route with the Modified Blue Ridge 2013 Alternative", and the text which discusses the effects of the two routes state that the Blue Ridge Alternative Route would cross more occupied marbled murrelet stands compared to the Proposed Route (DEIS pp. 3-26 – 3-28). According to DEIS Table 3.4.2.2-1, the number of marbled murrelet stands affected by the Proposed Route would be three presumed occupied stands, and the number affected by the Blue Ridge Alternative Route would be three occupied stands (C 1027, C 1040, and C 1042) and seven presumed occupied stands. In the text comparing the Proposed Route versus the Blue Ridge Alternative Route, only the occupied marbled murrelet stands are referenced.

The DEIS merely acknowledges that the Blue Ridge Alternative Route would cross these stands but does not analyze or describe the actual effects to the stands. The National Environmental Policy Act requires that an EIS "Rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)), and requires that an EIS take a "hard Look" (Western North Carolina Alliance v. North Carolina Dept. of Transportation (4th Circuit 2003)). A simple acknowledgement that the Blue Ridge Route would cross three occupied marbled murrelet stands does not meet the requirements to "rigorously explore" or to take a "hard look". "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. IND130-20

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IND130-20 Impacts to murrelets due to the project crossing through their stands is disclosed in Section 4.6 and 4.7 of the EIS.

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Dombeck (8th Circuit 1999)). In failing to analyze the actual effects to the marbled murrelet stands, the DEIS does not even provide the number of acres of habitat which would be affected. IND130-20 cont

A more detailed examination of the marbled murrelet habitat along the Blue Ridge Alternative Route reveals that the pipeline construction would occupy or parallel existing logging roads located on a ridge top. The marbled murrelet habitat in this area is located on one side, but not both sides of the mountain in relation to the ridge top location of the Blue Ridge Alternative Route. (See aerial photo on page 22 of these comments.) In other words, the Blue Ridge Alternative Route pipeline construction would only affect the edge of the marbled murrelet stands and not fragment the habitat. The Blue Ridge Alternative Route would parallel marbled murrelet habitat in this manner at various locations for a total of approximately 4,000 feet. Because of the ridge top location of the Blue Ridge Route in this area, at least some part of the 95 foot pipeline construction work area would be located in the logging road. A reasonable approximation of the amount of marbled murrelet habitat affected by the Blue Ridge Alternative Route would be about six acres but no more than nine acres. The context of these six to nine acres of affected marbled murrelet habitat is that they occur within the immediate vicinity of approximately 300 acres of habitat and represent only 0.03 of this total, and the effects would occur in a linear fashion of approximately 70 to 95 feet wide along the edge of the habitat. . IND130-21

In addition to the number of marbled murrelet stands crossed, the DEIS bases its conclusion that the Proposed Route is environmentally preferable to the Blue Ridge Alternative Route on "long-term impacts and irretrievable loss of critical habitat that could not be easily mitigated" (DEIS pg. 3-26). In fact, as established by the U.S. Fish and Wildlife Service in its Final Rule for Designation of Revised Critical Habitat for the Marbled Murrelet (50 CFR 17, 76 FR pp. 61599 - 61621, Oct. 5, 2011), there is no marbled murrelet critical habitat that exists anywhere near the Blue Ridge Alternative Route. Errors on the size and nature of environmental consequences are fatal to the adequacy of the DEIS. *Ocean Advocates v. U.S. Army Corps of Engineers*, 361 F.3d 1108, 1127 (9th Cir. 2004) (Corps NEPA document not adequate for issuance and extension of a permit allowing BP to build an addition to its existing oil refinery dock in Cherry Point, Washington) ("The Corps failed to appreciate that the permitted activity would lead to increased tanker traffic, an error about the fundamental nature and severity of the impact that the dock extension would have.). IND130-22

Because the DEIS merely lists the number of marbled murrelet stands crossed without discussion, exposition or analysis as required by the National Environmental Policy Act, the DEIS does not provide a basis for a reasoned choice among the alternatives. In addition, the DEIS erroneously states that there would be a long-term and an irretrievable loss of critical IND130-23

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IND130-21 Additional analysis of the Blue Ridge Alternative and the comparison portion of the proposed route is included in Appendix Q of the FEIS.

IND130-22 Language has been revised in the final EIS.

IND130-23 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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habitat when in fact no critical habitat occurs in the area. Therefore, because of these errors, the conclusion itself that the Proposed Route is environmentally preferable to the Blue Ridge Alternative Route is without basis and in error.

In addition, because the DEIS comparison of impacts to the marbled murrelet of the Proposed Route versus the Blue Ridge Alternative Route does not include the required consideration of context and intensity (40 CFR 1508.27), the DEIS conclusion regarding significance ("the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26) is without basis and in error. IND130-24

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IND130-24 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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Marbled Murrelet Stands and Northern Spotted Owl Home Range

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7. Fish Bearing Streams

SUMMARY: The DEIS falsely states the Proposed Route is environmentally preferable because short term impacts to fish-bearing and/or Coho salmon critical habitat streams along the Proposed Route could be avoided, reduced or mitigated while long term and irretrievable impacts to northern spotted owl and marbled murrelet critical habitat along the Blue Ridge Alternative Route could not be easily mitigated. In fact, we have demonstrated in the preceding comments that there is no northern spotted owl or marbled murrelet critical habitat in the vicinity of the Blue Ridge Alternative Route. The DEIS does not present the factual basis for a conclusion that the Proposed Route is environmentally preferable and that the Blue Ridge Alternative Route would not offer significant environmental advantages. We believe that the comparative analysis of the two routes in this context in the DEIS is superficial and non-scientific and does not measure up to NEPA standards for an EIS.

The DEIS comparison of the effects of the Proposed Route versus the Blue Ridge Alternative Route to fish bearing streams, fisheries critical habitat and aquatic resources consists of only cataloging the number streams crossed in DEIS Table 3.4.2.2-1, "Comparison of Pacific Connector's Proposed Route with the Modified Blue Ridge 2013 Alternative", and a few words (less than a full sentence) in the text which compares the two routes (DEIS pp. 3-26 – 3-28).

The number of stream crossings given in DEIS Table 3.4.2.2-1 is problematic in that the numbers are inconsistent, confusing and beg explanation. The number of fish bearing streams crossed by the Proposed Route is given as six with footnote k that discloses this number was derived from Oregon Department of Fish and Wildlife data, while the number of Coho salmon critical habitat streams crossed is given as nine with footnote l that reveals this number was derived from National Marine Fisheries Service data. Clearly, the total number of fish bearing streams crossed (6) cannot be less than the number of critical habitat streams crossed (9); however, this is what DEIS Table 3.4.2.2-1 indicates. The public and deciding official are left to speculate as to which numbers are valid, if any. One cannot go forward with such substantive inconsistencies in data that are essential for a reasoned choice among the alternatives. These errors are not "fly speck" mistakes since these numbers are used as rationale in the DEIS conclusion that the Proposed Route is environmentally preferable and that the Blue Ridge Alternative Route would not offer significant environmental advantages. IND130-25

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IND130-25 As surveys had not been completed in the Blue Ridge alternative, the EIS was based on existing desktop data. The FEIS contains a new Appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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The only reference to these streams in the text that compares the Proposed Route versus the Blue Ridge Alternative Route is in the supporting statement to the DEIS conclusion that the Proposed Route is environmentally preferable to the Blue Ridge Alternative Route, i.e., "temporary and short-term impacts on waterbodies and their associated aquatic resources crossed by the proposed route could be avoided, reduced or mitigated by certain measures implemented by Pacific Connector" (DEIS pg. 3-26). What comprises the temporary and short-term impacts is not revealed or discussed, how the impacts would be avoided, reduced or mitigated is not revealed or discussed, and what measures would be implemented by the Pacific Connector are not revealed or discussed in the text that compares the Proposed Route versus the Blue Ridge Alternative Route. The reader and deciding official must speculate as to what the specific impacts are and must speculate as to how many and how much of the unknown impacts would be reduced or mitigated; i.e., would the impacts be reduced or mitigated 10%, 50%, or 90%? There are no references, cross-references or footnotes in the comparison of the two routes (DEIS pp. 3-26 – 3-28) referring the reader to other areas of the DEIS where such information might be found. In fact, the information is not contained in the DEIS. IND130-26

The DEIS contains a general environmental analysis of aquatic resources in Chapter 4 (DEIS pp. 4-546 – 4-714) and provides tables of information regarding streams in Appendix O (DEIS pp. O-1 – O-187) These general discussions and these tables contain information that amounts to "factual wallpaper", that is, the information found there while factual is not of use in understanding the specifics of the environmental impacts, the specifics of the possible avoidance of impacts, the specifics of the possible reduction of impacts, or the specifics the possible mitigation relevant to the streams along the Proposed Route versus the Blue Ridge Alternative Route. These specifics are necessary to make a reasonably informed decision regarding the alternatives. The National Environmental Policy Act requires that an EIS "Rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)), and requires that an EIS take a "hard Look" (Western North Carolina Alliance v. North Carolina Dept. of Transportation (4th Circuit 2003)). Merely stating the number of fish bearing streams crossed, and critical habitat streams crossed by the Proposed Route and the Blue Ridge Alternative Route does not meet the requirements to "rigorously explore" or to take a "hard look". "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). *Sierra Club v. Bosworth*, 510 F.3d 1016, 1030 (9th Cir. 2007) (Forest Service NEPA document is not adequate for fuel reduction projects) ("Agency regulations require that public information be of 'high quality' because [a]ccurate scientific analysis, expert agency comments, and *public scrutiny* are essential to implementing NEPA"). IND130-27

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IND130-26 The temporary and short-term impacts on waterbodies and their associated aquatic resources, as well as the measures that would be required to avoided, reduced or mitigated these impacts are addressed in section 4.4 and 4.6 of the EIS.

IND130-27 This comment does not provide any directions or reasons to support the commenter's claim that the analysis is not sufficient. The FERC and cooperating agencies believe that this EIS is sufficient.

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Because of the inconsistencies of the data, and because of the total lack of discussion, exposition or analysis of impacts regarding fish bearing streams, critical habitat and aquatic resources as established above in this comment , the DEIS conclusion that the Proposed route is environmentally preferable to the Blue Ridge Alternative Route is without basis, arbitrary and capricious and in error. . *Western Watersheds Project v. Kraayenbrink*, 620 F.3d 1187, 1206-07 (9th Cir. 2010) (*amended* 632 F.3d 472 (9th Cir. 2011)) (EIS is not adequate) ("*See Earth Island Inst. v. Hogarth*, 494 F.3d 757, 763-64 (9th Cir.2007) (explaining that we generally defer to an agency's expertise in the methodology of the agency's studies but a result that is not rationally connected to the best available scientific evidence receives no such deference).").

In addition, because the DEIS comparison of impacts to the fish bearing streams, critical habitat streams, and aquatic resources of the Proposed Route versus the Blue Ridge Alternative Route does not include the required consideration of context and intensity (40 CFR 1508.27), the DEIS conclusion regarding significance ("the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26) is without basis and in error. *Northern Plains Resource Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1086-87 (9th Cir. 2011) (EIS is not adequate for a 130-mile railroad line in southeastern Montana) ("... the Board relied on stale data during the environment impact analysis process ... and failed to properly update the data with additional studies and surveys. We hold that such faulty reliance does not constitute the 'hard look' required under NEPA"); *National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 733 (9th Cir. 2001) (National Park Service NEPA document for approval of more cruise ships into Glacier Bay NP is not adequate) (""general statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided') (citing *Neighbors of Cuddy Mountain v. United States Forest Serv.*, 137 F.3d 1372, 1380 (9th Cir .1998)) ("The Park Service's statement of reasons does not provide a convincing explanation as to why the requisite information could not be obtained"). IND130-28

Lastly, the DEIS states: "Because of its linear nature, it is not possible to avoid crossing waterbodies and riparian areas. However, the number of stream crossings required for the pipeline was minimized by Pacific Connector's identification of a pipeline route that follows ridgelines and watershed boundaries to ensure the long-term safety, stability and integrity of the pipeline as it crosses the Coast and Cascade mountain ranges." (DEIS pg. 4-381). The DEIS selection of the Proposed Route and rejection of the Blue Ridge Alternative Route conflicts with this statement. The Blue Ridge Alternative Route would cross fewer fish bearing streams than the Proposed Route. The Blue Ridge Alternative Route is a practical, constructible and selectable alternative that is located on ridgelines. By Pacific Connector's criteria, the Blue Ridge Alternative should be selected as the pipeline route. IND130-29

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IND130-28 This comment does not provide any directions or reasons to support the commenter's claim that the analysis is not sufficient. The FERC and cooperating agencies believe that this EIS is sufficient.

IND130-29 Selection or rejection of an alternative route over the proposed route is not based on a single resource (as implied in this comment), but is a decision based on multiple factors and resource effects. The FEIS contains a new Appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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8. BPA Powerline v. Logging Roads

SUMMARY: The DEIS falsely leads to the conclusion that the Proposed Route collocated along the BPA powerline would have comparable environmental impacts to the Blue Ridge Alternative Route located on or parallel to existing logging roads. We contend that the Proposed Route would have substantially greater adverse impacts collocated on the BPA powerline which runs in a straight line across the landscape crossing rough, broken and difficult terrain with steep gradients up to 80 percent while the Blue Ridge Route would utilize existing logging roads on or near stable ridgetops with gradients generally less than 10 percent. The DEIS does not lay down a rational basis to conclude the Proposed Route is environmentally preferable. We therefore believe that the Blue Ridge Alternative Route has significant environmental advantages.

In the discussion of the alternative routes, the DEIS text (DEIS pg. 3-26) and DEIS Table 3.4.2.2-1 "Comparison of Pacific Connector's Proposed Route with the Modified Blue Ridge 2013 Alternative" (DEIS pg. 3-28) compares the amount of the Proposed Route that would be collocated with a BPA powerline right-of-way (7.4 miles, 52 percent) to the amount of the Blue Ridge Alternative Route that would parallel logging roads (8.9 miles, 63 percent)[3]. The public and decision maker are left to assume that the comparison of the miles and percentages is made because the environmental effects of a given mile of collocation with the powerline would be approximately equivalent to paralleling the logging roads, although no discussion, exposition or analysis is presented to support this assumption. In fact, the environmental effects would be dissimilar. IND130-30

The BPA powerline right-of-way and the logging roads are in reality very different. The logging roads in question are subject to the Oregon Forest Practices Act and the BLM Resource Management Plan, which require that logging roads be located on stable ground. An on the ground examination of the Blue Ridge Alternative Route reveals that the logging road gradients which the pipeline would parallel are located on or near a stable ridgetop and generally do not exceed 10 percent. In contrast, an examination of relevant contour maps and an on-the-ground review show that the BPA powerline right-of-way is laid out more or less straight from point to point across a variety of often difficult, rough and broken terrain with gradients exceeding 80

[3] The DEIS text on page 3-26 and comparison data in DEIS Table 3.4.2.2-1 provides the following: Proposed route co-located with BPA powerline: 52%, 7.4 miles; Blue Ridge Alternative Route parallel to logging roads: 63%, 8.9 miles. Footnote "a" of DEIS Table 3.4.2.2-1, however provides: Proposed Route co-located with BPA powerline: 39%, 5.6 miles. Our comment relies on the text and the comparison data in the table.

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IND130-30 The Final EIS includes an appendix comparing the Blue Ridge Alternative to the comparison portion of the Proposed Route. The appendix includes a comparison of the extent to which each route would cross steep slopes. The Chapter 3 summary table that compares miles of right-of-way parallel or adjacent to existing rights-of-way is included as a land use metric, and the more the right-of-way that is parallel or adjacent to existing rights-of-way the better. Thus, for this metric, the Blue Ridge Alternative is shown as a slight improvement compared to the Proposed Route by having 59 percent co-located, versus 52 percent for the comparison portion of the Proposed Route.

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percent. (See photographs on page 28 of these comments.) The DEIS declares that: "Ridgetops are generally considered stable and, therefore, an attempt has been made to route the vast majority of the pipeline along ridgetops." (DEIS pg. 4-269). These most fundamental considerations of the BPA powerline and the logging roads clearly denotes that the effects of pipeline construction would be so different that a comparison based only on the length that would be collocated or paralleled by the pipeline is not a valid basis for making a reasoned choice among the alternatives. In fact, for the reasons put forth above, the impacts of constructing the pipeline parallel to the logging roads on Blue Ridge Alternative Route would be significantly less than collocating the pipeline with the BPA powerline right-of-way. IND130-30 cont.

A simple display of facts such as the DEIS comparison of the miles of colocation on the BPA right-of-way on the Proposed Route with the miles parallel to the logging roads on the Blue Ridge Alternative Route does not meet the requirements to "rigorously explore" all alternatives (40 CFR 1502.14(a)) or to take a "hard look". "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). Therefore the DEIS conclusion that the Proposed Route is environmentally preferable to the Blue Ridge Alternative Route and that "the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26) is substantively flawed and in error. *Bonnichsen v. U.S. Dept. of Army*, 969 F.Supp. 628, 645 (D. Or. 1997) (Corps decision is remanded where relevant factors were not considered) ("Here, the agency clearly failed to consider all of the relevant factors or all aspects of the problem. The agency acted before it had all of the evidence or fully appreciated the scope of the problem. The agency did not fully consider or resolve certain difficult legal questions. The agency assumed facts that proved to be erroneous. The agency failed to articulate a satisfactory explanation for its action."); *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1211 (9th Cir. 1998) (FS EA/FONSI not adequate) ("We have warned that "general statements about "possible" effects and "some risk" do not constitute a "hard look" absent a justification regarding why more definitive information could not be provided." *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998). The Forest Service failed to heed that warning."). IND130-31

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IND130-31 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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Collocation of Proposed Route along BPA powerline right-of-way

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9. Landowners and Property Values

SUMMARY: The DEIS falsely leads the readers to conclude the Blue Ridge Alternative Route has gathered more opposition by neighbors because it does not fully reveal the opposition by neighbors to the Proposed Route. The DEIS does not analyze the effects on properties beyond 50 feet, without giving a rationale for why further analysis cannot, or should not, be completed. The comparative analysis between the Proposed Route and the Blue Ridge Alternative Route of effects on nearby landowners was simply not done. The DEIS reveals no basis in fact or evidence for concluding the proposed route is environmentally preferable and that the Blue Ridge Alternative Route would not offer significant environmental advantages.

The number of landowner parcels crossed by the pipeline would be 61 under the Proposed Route and 23 under the Blue Ridge Alternative Route (DEIS Table 3.4.2.2-1). In its discussion of the Proposed Route versus the Blue Ridge Alternative Route, the DEIS states the following:

> "The Modified Blue Ridge Alternative Route would shift portions of the pipeline from land owned by private individuals and timber companies to federal land managed by the Coos Bay District of the BLM. However, a number of landowners along the Modified Blue Ridge 2013 Alternative Route object to it, believing that the alternative would affect the value of their properties, clear more forest including old growth, and impact wildlife and waterbodies, particularly Daniels Creek.". (DEIS 3-26)

The DEIS to some extent addresses in its comparison of the two routes many of the concerns raised by landowners who object to the Blue Ridge Route i.e., LSOG (late-successional old growth) forests, waterbodies crossed, the northern spotted owl, and the marbled murrelet.

Although the DEIS addresses the concerns which were expressed by the landowners affected by the Blue Ridge Alternative Route (footnote 14, DEIS pg. 3-26 gives their names and references letters filed with the FERC on two separate dates), the DEIS is silent regarding concerns which were expressed by the landowners along the Proposed Route (footnote 13, DEIS pg. 3-26 references letters to the Commission filed on nine separate dates). Although the landowners along the Blue Ridge Alternative Route have expressed a variety of specific concerns in writing, the DEIS merely states that these landowners: "suggested that the FERC consider an alternative route". The DEIS analysis provides very unequal treatment to concerns of those landowners along the Proposed Route. This failure violates NEPA requirement to IND130-32

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IND130-32 All comments provided by the public and agencies have been taken into consideration in the EIS. The commenter's claim that the public's comments regarding the proposed route have not been taken into consideration is baseless, and the commenter does not provide any evidence to support this claim.

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"rigorously explore and objectively evaluate all reasonable alternatives" (40 CFR 1502.14(a)), or in other words to give equal treatment to the analysis and evaluation of all reasonable alternatives to the extent practicable.

The comparison in DEIS Table 3.4.2.2-1 of the Proposed Route v. Blue Ridge Alternative Route provides the number of residences within 50 feet of the construction right-of-way (Proposed Route-1, Blue Ridge Alternative Route-0). The issue of residences within 50 feet of the right-of-way is not discussed in the text which compares the Proposed Route v. Blue Ridge Alternative Route (DEIS pg. 3-26). The DEIS gives a general discussion of residences within 50 feet of construction work areas in Chapter 4.0 Environmental Analysis, (DEIS pg. 4-18 – 4-19). The DEIS provides no rationale or basis for using 50 feet as the threshold for which impacts to residences are considered and mitigated. The DEIS ignores or only addresses in the most cursory manner impacts to residences beyond 50 feet of the construction right-of-way. The use of 50 feet in the analysis is without basis and arbitrary. See, for example, *Western Watersheds Project v. Kraayenbrink*, 620 F.3d 1187, 1207 (9th Cir. 2010) (*amended* 632 F.3d 472 (9th Cir. 2011)) (EIS is not adequate) ("The BLM's rationale falls short of the requirements of NEPA and the APA. The BLM has failed to consider relevant factors, failed to articulate a rational connection between the facts put forth by agency experts and the choices made .... In short, the BLM's Final EIS has not provided a "full and fair discussion" of the environmental impacts of the proposed regulatory changes, 40 C.F.R. §1502.1, impairing both the ability of the BLM to reach a reasoned decision and the ability of the "larger audience" to play an effective role in the decisionmaking process. *See Dep't of Transp.*, 541 U.S. at 768, 124 S.Ct. 2204. Therefore, we conclude that the BLM has failed to take a 'hard look' at the environmental impacts of the 2006 Regulations as required by NEPA, and its conclusion in the Final EIS ....").

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Impacts and the need for site specific mitigation do not suddenly cease at 50 feet, for instance, residences within 60 feet, 100 feet, 1000 feet, etc. would be impacted by noise, dust, hours of operation, traffic flow. DEIS Table 3.4.2.2-1 provides the number of landowner parcels crossed by the Proposed Route as 61 and the Blue Ridge Alternative Route as 23. Essential information necessary to understand and compare the impacts of the two routes to homes and residences is omitted. Local information reveals that the Proposed Route would cross 33 parcels with homes while the Blue Ridge Alternative Route would cross three parcels with homes. Even within the 50 feet zone, the DEIS makes this conclusion; "We have reviewed the site specific residential construction plans and find them acceptable for reducing impacts." (DEIS pg. 4-18). This statement is completely conclusory in nature. Impacts are not reduced to some vague level of acceptability simply because someone says so. The DEIS Appendix I contains only generalized air photos with little information regarding these residential sites. The DEIS does not contain site specific construction plans associated with these residential sites. Facts, evidence, analysis and rationale must be given for such a conclusion. The

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IND130-33 50 feet is a standard FERC measure for residences near pipelines.

IND130-34 The comment is correct, effects do not stop at 50 feet. This distance is only a measurement used for analysis. The landowner can include requirements for mitigating effects to their property as part of the easement negotiation process. There is no requirement that the FERC include site-specific construction plans for every building along the route in the DEIS.

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conclusion violates the requirement that an EIS must articulate "a rational connection between the facts found and the choice made" (Sierra Club V. U.S. Department of Transportation (D. Nev. 2004)).

The issue of property values is addressed in broad and general terms by the DEIS in Chapter 4.0, "Environmental Analysis" (DEIS pp. 4-811 – 4-813). The DEIS states; "The FERC received a number of comments concerned about the potential impact of the pipeline on property values. Pacific Connector asserts that research on this issue does not support a finding that the presence of a pipeline on or near a property would have negative impacts on its value." In support of the assertion that the pipeline would not have negative impacts on property values, the DEIS cites five studies.

The first study cited which was conducted by Interstate Natural Gas Association concluded that having a pipeline on the property did not significantly alter sale prices; neither the size of the pipeline nor the product carried had any significant impact on sale prices.

The second study cited which was conducted by Whatcom County, Washington found that neither the market value of properties nor the length of time necessary for a sale were negatively impacted by the presence of a pipeline within 300 feet.

The third study cited which was conducted by Portland State University concluded that proximity to the pipeline had no statistically or economically significant impact on residential property values. IND130-35

The fourth study cited was conducted by PGP Valuation on behalf of Palomar Gas Transmission concluded that natural gas pipelines had no measurable long term impact on property values and that variations in short term values were either not substantial or non-existent.

The fifth study cited which was conducted by Diskin, et al. did not find a systematic relationship between proximity to a pipeline and sale price or property value.

Following the citation of the above studies, the DEIS goes on to state that; "The impact a pipeline may have on a tract of land depends on many factors including the size of the tract, the values of adjacent properties, the presence of other utilities, the current value of the land, and the current land use. These five factors upon which the impact a pipeline may have on the value of a tract of land are not addressed or even mentioned in the discussion of the cited studies. The studies are clearly not a complete examination of the factors identified as relevant by the DEIS. See, for example, *Humane Soc. of U.S. v. Locke*, 626 F.3d 1040, 1048 (9th Cir. 2010) (decision is arbitrary or capricious) ("Under the APA, the agency must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection

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IND130-35 A local example of how a 36-inch high-pressure natural gas pipeline would affect property values in the Blue Ridge area is not included for the simple reason that there are no 36-inch gas pipelines in the area, or even in the county, to use as a comparison. We used the studies that are available. See section 4.9.1.3 of the DEIS.

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between the facts found and the choice made. *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, 103 S.Ct. 2856, 77 L.Ed.2d 443 (1983) (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168, 83 S.Ct. 239, 9 L.Ed.2d 207 (1962)). The reviewing court should not attempt itself to make up for [an agency's] deficiencies: We may not supply a reasoned basis for the agency's action that the agency itself has not given. *Id.* (quoting *SEC v. Chenery Corp.*, 332 U.S. 194, 196, 67 S.Ct. 1575, 91 L.Ed. 1995 (1947)) (quotation marks deleted).

The issue of property values is addressed in the DEIS again in Chapter 5.0 (DEIS pg. 5-18). Here the DEIS states: "It is possible that the location of a pipeline near a residence *could affect property values* (*emphasis added*). The DEIS goes on to restate that the impact on the value of a tract depends on many factors including the size of the tract, the values of adjacent properties , the presence of other utilities, the current value of the land, and the current land use. A local example of how current land use could be adversely impacted is the restriction against logging or yarding across the pipeline right-of-way. This restriction would likely either physically or economically preclude harvest of certain acres of forest land (Messerle, pers. com. 2015), which in turn would affect property values. A further local example would be that the pipeline right-of-way would restrict the use of lands as an off-site mitigation of salt-water tidal lands on the Sheldon property located along the Proposed Route thus adversely affecting the potential value of the land. IND130-35 cont

The DEIS makes a broad conclusion, based on the studies cited, that property values would not be adversely impacted by the pipeline (although in conflict with this, the DEIS acknowledges that property values could be adversely affected both in its Chapter 4.0 and Chapter 5.0 discussions). If a parallel analytical approach and logic were applied to other resources, such as water, wildlife, vegetation, etc., the DEIS would simply cite studies without doing any examination or analysis of local data or on-the-ground local conditions to reach its conclusions.

The DEIS, in reaching a conclusion that property values would not be negatively impacted, failed to do specific analysis of local properties including assessing the local properties by the pertinent factors cited by the DEIS, i.e., size of tract, values of adjacent properties, presence of other utilities, current value of the land, and current land use. This failure in the DEIS analysis violates the NEPA requirement that impacts shall be discussed in proportion to their significance (40 CFR 1502.2(b)). In order to make an informed and reasoned choice among the alternative routes in regards to impacts on property values, NEPA requires that rigorous analyses take a hard look regarding the affected properties along the Proposed Route and the Blue Ridge Alternative Route. (40 CFR 1502.14(a)); Communities Against Runway Expansion v. Federal Aviation Administration (D.C. Circuit 2004)). Because the DEIS discussion

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consists merely of citing studies with no actual analysis of the particular situation, the DEIS discussion is substantively flawed and does not provide a basis for a reasoned choice among the alternatives. Because the DEIS discussion of the Proposed Route versus the Blue Ridge Alternative Route does not include the required context and intensity (40 CFR 1508.27), the DEIS conclusion regarding significance ("the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26)) is without basis and in error. See, for example, *Pacific Rivers Council v. United States Forest Service*, 689 F.3d 1012, 1020 (9th Cir. 2012) (EIS is not adequate) ("In reviewing the adequacy of an EIS, we employ a rule of reason to determine whether the EIS contains a reasonably thorough discussion of the significant aspects of probable environmental consequences." *Kern v. Bureau of Land Mgmt.*, 284 F.3d 1062, 1071 (9th Cir.2002) (internal quotation marks omitted). "Once an agency has an obligation to prepare an EIS, the scope of the analysis of environmental consequences in that EIS must be appropriate to the action in question.... If it is reasonably possible to analyze the environmental consequences in an EIS ..., the agency is required to perform that analysis." *Id.* at 1072.). IND130-35 cont

A further landowner consideration in comparing the Proposed Route with the Blue Ridge Alternative Route is the issue of eminent domain. Fifteen landowners along the Proposed Route have openly expressed their intention to legally resist right-of-way acquisition by Pacific Connector while under the Blue Ridge Alternative Route there are willing landowners and no such issue would exist. If the Pacific Connector Gas Pipeline is authorized by the FERC, the Certificate would convey the right of eminent domain under section 7h of the Natural Gas Act (NGA). In the situations in which an agreement between Pacific Connector and the landowner are unable to reach an agreement, Pacific Connector would initiate condemnation proceedings (DEIS pg. 4-812). The outcome of condemnation proceedings in favor of Pacific Connector are not a foregone conclusion and could potentially block construction of the pipeline along the Proposed Route. Executive Order 13406 of June 23, 2006 states that the federal government must limit its use of taking private property to "public use" with "just compensation" for the "purpose of benefiting the general public". EO 13406 limits this use by stating that it may not be used "for the purpose of advancing the economic interest of private parties to be given the ownership or use of the property taken." This Executive Order was issued in response to the adverse public reaction regarding the Supreme Court ruling in Kelo v. City of New London, 545 U.S. 469 (2005) and too broad application of eminent domain powers. IND130-36

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IND130-36 Comment noted.

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10. Geologic Hazards

SUMMARY: The DEIS falsely concludes that the Proposed Route which crosses five landslides (8,885 feet) is environmentally preferable over the Blue Ridge Alternative Route, which crosses four landslides (4,370 feet). In addition, the Blue Ridge Alternative Route would avoid a rapidly moving landslide which is crossed by the Proposed Route. Because the Blue Ridge Alternative would avoid geologic hazards, we believe the Blue Ridge Alternative Route is environmentally preferable and that it would offer significant environmental advantages over the Proposed Route.

The DEIS omits any discussion of geologic hazards in its comparison of the Proposed Route versus Blue Ridge Alternative Route (DEIS pg. 3-26), although DEIS Table 3.4.2.2-1, (DEIS pg. 3-28) displays the number of landslides and number of feet of landslides for the two alternative routes. The table identifies a total of five landslides consisting of 8,885 feet on the Proposed Route and a total of four landslides consisting of 4,370 feet for the Blue Ridge Alternative Route. The DEIS does not provide any discussion, exposition or analysis of these numbers from DEIS Table 3.4.2.2-1 in its comparison of the Proposed Route and Blue Ridge Alternative Route. A simple display of facts does not meet the requirements to "rigorously explore" all alternatives (40 CFR 1502.14(a)) or to take a "hard look". "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck (8th Circuit 1999)). However, based on nothing else but these unadorned numbers, the Blue Ridge Alternative Route would cross one-half the length of landslides as the Proposed Route and therefore the Blue Ridge Alternative Route would be environmentally preferable and would offer significant environmental advantages. IND130-37

In Chapter 4.0, " Environmental Analysis" (DEIS pp. 4-256 – 4-270), and Chapter 5.0 Conclusions and Recommendations (DEIS pg. 5-5), the DEIS presents information regarding rapidly moving landslides that is essential to a reasoned choice among the alternative routes but which was omitted in the comparison or analysis of the two routes (DEIS pp. 3-26 - 3-28). In its discussion of rapidly moving landslides, the DEIS states that 128 rapidly moving landslides were considered to be a potentially moderate or high hazard along the entire pipeline route but mostly located in the Coast Range. All rapidly moving landslide hazards were avoided by modifying the pipeline route location where feasible; however the DEIS states that two moderate hazard rapidly moving landslide sites could not be avoided. One of these two rapidly

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IND130-37 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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moving landslide sites is located at MP 18.1 to 18.2 on private land along the location of the Proposed Route (DEIS pp. 4-268 - 4-270).

The DEIS contention that the rapidly moving landslide site located at MP 18.1 to 18.2 along the Proposed Route could not be avoided is inconsistent with and in direct contradiction of the DEIS in its discussion of the Blue Ridge Alternative Route. In that discussion, the DEIS states: "Pacific Connector determined that both the proposed route and the Modified Blue Ridge 2013 Alternative Route are constructible." (DEIS pg. 3-26). Therefore, the rapidly moving landslide site located along the Proposed Route could have been avoided by locating the pipeline on the Blue Ridge Alternative Route. IND130-38

The DEIS makes clear that avoidance of geologic hazard sites is the priority and is more effective than crossing such sites with mitigation. The DEIS declares: "During route planning, Pacific Connector identified and attempted to avoid geological resources and hazards." (DEIS pg. 4-256); "Pacific Connector has worked to avoid landslides along the proposed route." (DEIS pg. 4-269); "Pacific Connector selected its proposed route to avoid crossing existing landslides and areas susceptible to landsliding." (DEIS pg. 4-269).

In addition, the DEIS record includes this: "Ridgetops are generally considered stable and, therefore, an attempt has been made to route the vast majority of the pipeline along ridgetops."(DEIS pg. 4-269). The Blue Ridge Alternative Route is constructible and selectable as a practical route that would not only avoid the rapidly moving landslide site along the Proposed Route at MP 18.1 to MP 18.2 but it is also located on or near stable ridgetops.

The DEIS sets forth the importance of avoiding rapidly moving landslide sites with the pipeline location: "If a pipeline was located within a rapidly moving landslide source area, the pipeline could lose support as a result of displacement of the slide mass, and could be subject to excessive strain depending on the orientation of the pipeline and the distance over which support was lost."; "It is recognized that the consequences of a pipeline failure may be catastrophic and involve fire and/or explosion."; "Risks associated with landslides include both the risk that the installation of the pipeline may adversely affect slope stability, and that post-construction land movements could damage the pipeline."(DEIS pp.4-268 - 4-269). Although the DEIS describes possible impacts of a rapidly moving landslide to the pipeline, the DEIS fails to describe the possible environmental impacts that would result. The DEIS is silent on the environmental consequences of the rapidly moving landslides to such resources as water, vegetation, wildlife or fisheries. That these considerations of impacts to the pipeline, public safety and natural resources by the rapidly moving landslide which is crossed by the Proposed Route were not included in the discussion or analysis of the comparison of the routes (DEIS pp. 3-26 – 3.28) is a clear violation of NEPA. NEPA requires that impacts shall be discussed in proportion to their significance (40 CFR 1502.2(b)). IND130-39

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IND130-38 The Final EIS includes an appendix comparing the Blue Ridge Alternative to the comparison portion of the Proposed Route. The appendix includes a comparison of landslide hazards. Language in Section 4.2 regarding the Proposed Route has been revised to clarify that the moderate-hazard landslide sites (MPs 18.1 to 18.2 and MP 36.9) could not be avoided while still following the Proposed Route.

IND130-39 Section 4.2.2 explains that the geologic hazards (including landslides) evaluation is both to evaluate landslides in terms of potential impacts to the pipeline as well as to evaluate the potential effects that the construction and operation of the pipeline might have on the geologic environment and geologic processes in the pipeline vicinity. The section on "Landslide Hazards" describes types of landslides and also refers the reader to related discussion in terms of the assessment and protection of the aquatic and riparian environment in section 4.1 and in the ACS technical report in appendix J. In addition, the section "Landslide Hazards and Avoidance and Minimization of Adverse Effects" acknowledges that pipeline construction can be a potential source of slope instability and refers the reader to BMPs that would be implemented to ensure that construction would not contribute to slope instability.

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None of this critical information essential for a reasoned choice among the alternatives was used in the comparison and in the consequent selection of the Proposed Route over the Blue Ridge Alternative Route (DEIS pp. 3-26 – 3-28). These errors in the DEIS violate NEPA requirements that the EIS contain a reasonably thorough discussion of significant aspects of environmental consequences, the agency takes a hard look and there is no clear error of judgment by the agency. (Communities Against Runway Expansion v. Federal Aviation Administration (D.C. Circuit 2004)). The selection of the Proposed Route over the Blue Ridge Route is therefore without basis, arbitrary and capricious and in error. See also, *Pacific Rivers Council v. U.S. Forest Service*, 668 F.3d 609, 617 (9th Cir. 2012) (EIS is not adequate) ("In reviewing the adequacy of an EIS, we employ a rule of reason to determine whether the EIS contains a reasonably thorough discussion of the significant aspects of probable environmental consequences." *Kern v. Bureau of Land Mgmt.*, 284 F.3d 1062, 1071 (9th Cir. 2002) (internal quotation marks omitted). "Once an agency has an obligation to prepare an EIS, the scope of the analysis of environmental consequences in that EIS must be appropriate to the action in question.... If it is reasonably possible to analyze the environmental consequences in an EIS ..., the agency is required to perform that analysis." *Id.* at 1072.").

The DEIS states that the risks to the pipeline at MP. 18.1 – 18.2 are not considered hazardous enough to require additional mitigation or rerouting (DEIS pg. 4-270). Immediately following this conclusion, the DEIS goes on: "Hazards include both the potential for the planned construction to adversely affect slope stability and the potential for post-construction landslide movement to damage the planned pipeline." Once again, the hazards (or potential impacts) to the pipeline are noted, yet again the DEIS fails to discuss hazards (or impacts) to natural resources or the environment. The DEIS provides no information in support of its conclusion that rerouting is not required. The list of hazards in the DEIS, in fact, argues for the opposite conclusion which is that relocation is required. An on-the-ground review of this rapidly moving landslide revealed slopes in excess of 80 percent with broken and hummocky ground indicating that significant landslides had occurred on the site previously. An agency must conduct an analysis of alternatives that will avoid adverse environmental consequences. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351-52, 109 S.Ct. 1835, 1846-47, 104 L.Ed.2d 351 (1989) (NEPA imposes no substantive duty on agencies to mitigate adverse environmental effects or to include in each EIS a fully developed mitigation plan; it merely requires the agency to include in the EIS a reasonably complete discussion of possible mitigation measures); *Idaho ex rel. Kempthorne v. U.S. Forest Service*, 142 F.Supp.2d 1248, 1263 (D. Idaho 2001) (roadless rule EIS is not adequate where adverse impacts are not investigated for possible mitigation) (EIS is not adequate where it does not "identify measures designed to minimize the impact of the identified consequences"); see also, NEPA §102(2)(C)(ii) (duty to disclose "any adverse environmental effects which cannot be avoided should the proposal be implemented," requires an investigation into their avoidance). IND130-40

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IND130-40 See response to IND130-39. The hazards as stated in the "Landslide Hazards and Avoidance and Minimization of Adverse Effects" section include the hazard of pipeline construction to potentially affect slope stability. As stated in the EIS text, there was no feasible option to reroute the pipeline alignment in the area of the moderate hazard RML landslide at MP 18.1 to 18.2. The ECRP includes comprehensive and extensive measures that would ensure that pipeline construction would not contribute to slope instability.

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Chapter 5.0, "Recommendations and Conclusions", also addresses this rapidly moving landslide. "The pipeline would cross two moderate risk rapidly moving landslide sites (at MP 18.1 to 18.2 on private land, and MP 36.9 on BLM land). Implementation of Pacific Connector's ECRP (Erosion Control and Revegetation Plan) would minimize or avoid the potential for construction to adversely affect slope stability." (DEIS pg. 5-5). The ECRP is acknowledged to be a generalized plan (DEIS pg. 2-109). The DEIS provides no site-specific information on the conditions at MP 18.1 – 18.2 that would be mitigated and nothing but a general reference to a generalized plan as to what mitigation measures would be implemented. The DEIS provides no basis for its conclusion that the ECRP would minimize or avoid the adverse effects of a rapidly moving landslide. Therefore the DEIS provides no basis for the public or decision maker to make a reasoned choice among the alternatives. IND130-41

None of the above critical information regarding the rapidly moving landslide was included in the comparison of the Proposed Route versus the Blue Ridge Alternative Route, (DEIS pp. 3-26 – 3-28), therefore the DEIS conclusion that the Proposed Route is environmentally preferable and that "the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS pg. 3-26) is substantively flawed and in error.

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IND130-41 The "Landslide Hazards and Avoidance and Minimization of Adverse Effects" section includes a discussion of regularly-conducted monitoring activities along the pipeline that would ensure that potential landslide hazards are would be detected and mitigated as early as possible if necessary. ECRP Section 11.0 is noted as providing specific backfill and compaction criteria to address steep slopes. This section goes on to explain more specific construction methods for steep slopes and also describes necessary pre-construction engineering designs for landslide areas to be filed with the Secretary.

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11. Floodplains

SUMMARY: The DEIS is lacking an analysis of a relevant Government-wide policy "to evaluate the potential effects of any actions it may take in a floodplain; to ensure that its planning programs and budget request reflect consideration of flood hazards and floodplain management" — among other duties. Executive Order 11988, 42 FR 26951. This is a mandatory duty and this duty was not carried out.

The DEIS does not discuss floodplains in its comparison of the Proposed Route versus the Blue Ridge Alternative Route (DEIS pp. 3-26 – 3-28). In Chapter Four, "Environmental Analysis", the DEIS states the following: "EO 11988 (10 CFR 1022) requires federal agencies *to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains* and to *avoid direct and indirect support of floodplain development wherever there is a practicable alternative*." (DEIS pg. 4-380) (emphasis added).

Table 4.4.4.4-7, "Floodplain Areas Crossed by the Proposed Pacific Connector Pipeline" identifies three areas where the Proposed Route crosses floodplains; at MP 11.0 to 11.4, at 11.8 to 11.9, and at MP 15.7 (DEIS pg. 4-380). These three areas would be avoided if the pipeline route were to be located on the Blue Ridge Alternative Route. Executive Order 11988 requires that floodplains should be avoided "to the extent possible" and "wherever practicable" or in other words, where feasible, workable, or doable. All of these terms and words describe the Blue Ridge Alternative Route because it is constructible and selectable as a pipeline location (DEIS pg. 3-26). Therefore, the decision to locate the pipeline along the Proposed Route is contrary to Executive Order 11988. IND130-42

In addition to being contrary to Executive Order 11988, the Draft Environmental Impact Statement violates NEPA requirements because the analysis and comparison of the Proposed Route versus the Blue Ridge Alternative Route fails to discuss floodplains. NEPA requires that an EIS: discuss impacts in proportion to their significance (40 CFR 1502.2(b)); rigorously explore and objectively evaluate all reasonable alternatives (40 CFR 1502.14(a)), discuss any adverse effects which cannot be avoided (40 CFR 1502.16), contain a reasonably thorough discussion of significant aspects of environmental consequences, and that the agency takes a hard look. (Communities Against Runway Expansion v. Federal Aviation Administration (D.C. Circuit 2004)). IND130-43

The DEIS conclusion that the Proposed Route is environmentally preferable and that "the Modified Blue Ridge 2013 Alternative would not offer significant environmental advantages over the proposed route" (DEIS 3-26) is in error because it is based on analysis which is IND130-44

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IND130-42 The Final EIS includes an appendix comparing the Blue Ridge Alternative to the comparison portion of the Proposed Route. The appendix includes a comparison of floodplain areas crossed. The Blue Ridge Alternative would reduce but not eliminate crossing of floodplain areas.

IND130-43 The Final EIS includes an appendix comparing the Blue Ridge Alternative to the comparison portion of the Proposed Route. The appendix includes a comparison of floodplain areas crossed. The Blue Ridge Alternative would reduce but not eliminate crossing of floodplain areas.

IND130-44 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

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substantively flawed, and in violation of NEPA requirements, and because it is contrary to Executive Order 11988. See generally, *Communities Against Runway Expansion v. Federal Aviation Administration*, 355 F.3d 678, 688-89 (D.C. Cir. 2004) (analysis under an Executive Order (environmental justice in this case), once present in a NEPA document, is subject to arbitrary and capricious standard of review). IND130-44 cont.

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12. Late-Successional Reserves (LSR)

SUMMARY: The DEIS is lacking a detailed and meaningful comparative analysis of the Proposed Route and the Blue Ridge Alternative Route on late-successional reserves. We believe a fair analysis and comparison would show that adverse environmental impacts to late-successional reserves would be inconsequential and hence there would be no environmental advantage of consequence for the Proposed Route.

The effects of the Proposed Route and the Blue Ridge Alternative Route to Late-Successional Reserves are compared in DEIS Table 3.4.2.1-1 "Comparison of Pacific Connector's Proposed Route with the Modified Blue Ridge 2013 Alternative". The table specifies the miles/acres of LSR/Unmapped LSR that would be crossed. The table sets forth that no Late-Successional Reserves would be impacted by the Proposed Route and that 0.4 mile/8 acres would be affected by the Blue Ridge Alternative Route. No discussion, exposition or analysis of these numbers is provided in the DEIS comparison of the two routes (DEIS 3-26 – 3-28). Comparing miles and acres is more of a comparison between the alternatives themselves rather than a detailed and meaningful comparison of environmental impacts. IND130-45

The number of miles/acres given in Table 3.4.2.2-1 is problematic in that the numbers are inconsistent. Except for wetlands, a 95 foot wide construction right-of-way would be used to install the pipeline (DEIS pp. 2-84 -2-85; Figure 2.3-1). If the crossing of the Late-Successional Reserve by the Blue Ridge Alternative Route is 0.4 mile long (2,112 feet) as indicated by DEIS Table 3.4.2-1, with a construction right-of-way of 95 feet, then in fact the number acres of Late-Successional Reserve impacted by the Blue Ridge Alternative Route is 4.6 acres, not 8 acres. The public or deciding official has no way of knowing which figure might be correct, if any. This is not a fly speck error, in that one must reasonably assume that the 0.4 mile/8 acres of affected Late-Successional Reserve must be relevant or it would not be included in DEIS Table 3.4.2-1 which is the sole instrument used in the comparison of the two routes. If 8 acres of affected Late-Successional Reserve is relevant in the comparison of the two routes, then an error of 85 percent (4.6 acres v. 8.0 acres) is a substantive error. If the 8 acres is correct, then the 0.4 miles is in error with the real number being 0.6 mile, or an error of 100 percent. IND130-46

In addition, no information regarding the context or intensity of these numbers is provided, as also required by NEPA (40 CFR 1508.27). The context and intensity of the impact to Late-Successional Reserves can be obtained by an examination of the Bureau of Land Management's Coos Bay District planning documents. The Coos Bay District 1995 Record of Decision and Resource Management Plan discloses that the Coos Bay District contains 133,700 IND130-47

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IND130-45 The FEIS contains a new appendix that contains additional details regarding the comparison of the proposed route to the Blue Ridge alternative.

IND130-46 Table 3.4.2.2-1 has been updated in the final EIS, including clarification that while miles crossed indicates the linear pipeline right-of-way, the acres of LSRs/Unmapped LSRs includes both the construction right-of-way and any impact from temporary construction activities outside of the right-of-way.

IND130-47 Impacts to late-successional reserves is addressed in Section 4.1 of the EIS.

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acres of mapped Late-Successional Reserves and an overall total of 136,800 acres of Late-Successional Reserves. With the assumption that 8.0 acres is correct, then the amount of impacted Late-Successional Reserve by the Blue Ridge Alternative Route would represent 0.00005 of total LSR on the Coos Bay District and 0.0025 of Unmapped LSR. This brief analysis of context and intensity clearly shows that the amount of Late-Successional Reserve that would be affected by the Blue Ridge Alternative Route is relatively inconsequential. IND130-47 cont.

Because no discussion, exposition or analysis of these numbers is offered in the comparison of the two routes as required by NEPA, the public and responsible official are lacking essential information required for a reasonably informed decision. A simple display of facts such as the DEIS listing of acres of affected LSR does not meet the requirements to "rigorously explore" all alternatives (40 CFR 1502.14(a)) or to take a "hard look". "Hard look requires that the statement must not merely catalog environmental facts but also explain fully its course of reasoning." (Friends of Boundary Waters Wilderness v. Dombeck, 164 F.3d 1115, 1128 (8th Cir. 1999) (The statute requires a "detailed statement," 42 U.S.C. §4332(2)(C), "from which a court can determine whether the agency has made a good faith effort to consider the values NEPA seeks to protect."). Therefore the DEIS' conclusion that the Proposed Route is environmentally preferable to the Blue Ridge Alternative Route is without basis and in error. See also, *Friends of Boundary Waters Wilderness v. Dombeck*, 164 F.3d 1115, 1128 (8th Cir. 1999) (remanded in part) (NEPA requires "that the agency take a 'hard look' at the environmental consequences" of a project before taking a major action. *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97, 103 S.Ct. 2246, 76 L.Ed.2d 437 (1983). The statute requires a "detailed statement," 42 U.S.C. §4332(2)(C), "from which a court can determine whether the agency has made a good faith effort to consider the values NEPA seeks to protect." *Minnesota Pub. Interest Research Group v. Butz*, 541 F.2d 1292, 1299 (8th Cir. 1976), *cert denied*, 4:30 U.S. 922, 97 S.Ct. 1340, 51 L.Ed.2d 601 (1977). "(T)he statement must not merely catalog environmental facts, but also explain fully its course of' inquiry, analysis and reasoning." Id.).

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13. Need for a Supplement Draft EIS

SUMMARY: The draft EIS is so seriously flawed that the public and agency review function cannot have been adequately performed. Only a revised or supplemental draft EIS will suffice.

There are such significant flaws in this draft EIS that it must be supplemented or revised and circulated once again as a draft for comment before proceeding to a final. This is necessary to comply with the public notice and comment provisions of NEPA and the NEPA regulations. *Ecology Center v. Austin*, 430 F.3d 1057, 1067-68 (9th Cir. 2005) (Where, as here, "the information in the ... EIS was so incomplete or misleading that the decisionmaker and the public could not make an informed comparison of the alternatives, revision of an EIS may be necessary to provide 'a reasonable, good faith, and objective presentation of the subjects required by NEPA.'" *Animal Def. Council v. Hodel*, 840 F.2d 1432, 1439 (9th Cir.1988) (quoting *Johnston v. Davis*, 698 F.2d 1088, 1095 (10th Cir.1983)), amended by 867 F.2d 1244 (9th Cir.1989)). See also *Western Watersheds Project v. Kraayenbrink*, 538 F.Supp.2d 1302, 1314 (D. Id. 2008) (EIS is not adequate for Bureau of Land Management's (BLM) revisions to nationwide grazing regulations for federal lands); *Center for Biological Diversity v. Bureau of Land Management*, 422 F.Supp.2d 1115, 1161-62 (N.D. Cal. 2006) (EIS failed to adequately assess environmental consequences of OHV use on endemic invertebrates in the Imperial Sand Dunes Recreation Area). IND130-48

There are only four kinds of changes an agency can make between the draft and final EIS, one of which is to "[s]upplement, improve, or modify its analysis." 40 CFR 1503.4(a)(3). The defects in this version of the draft EIS, however, are beyond remediation because essential information is missing. If supplied for the first time in a final EIS there would have been no opportunity for interested and affected agencies and members of the public to comment and express their concerns about this essential information.

Our comments have definitively and conclusively demonstrated that the FERC's conclusion in the DEIS that the Proposed Route is environmentally preferable and that the Blue Ridge Alternative Route does not offer significant environmental advantages is without basis, in error, an abuse of discretion, and arbitrary and capricious. We have shown in our comments that the evidence or rationale offered by the FERC in the DEIS for these conclusions to be invalid and that critical information or evidence needed to make a reasoned choice among the alternatives has been omitted in the comparison of the two routes. Reviewers of the DEIS have had no chance to look at or to consider whatever valid evidence the FERC might offer in the Final EIS as

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IND130-48 Comment noted. We disagree that the DEIS is misleading or that it otherwise violates NEPA. The DEIS makes no decision on the Blue Ridge Route; it is not a decision document.

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rationale to persist in its conclusion. Reviewers of the DEIS have had no chance to look at or to consider whatever valid evidence might exist for why the comparison of environmental consequences to waterbodies, domestic water sources, fish bearing streams, landowners and property values, collocation on the BPA powerline right-of-way, geologic hazards, and flood plains as we have discussed in our comments would not demand the conclusion that the Blue Ridge Alternative Route is environmentally preferable and would offer significant environmental advantages. Reviewers of the DEIS have had no chance to consider the evidence of why the FERC considers impacts to critical habitat of the marbled murrelet and the northern spotted owl to be a key consideration in its conclusion when we have demonstrated that no critical habitat exists along the Blue Ridge Alternative Route. Reviewers of the DEIS have had no chance to look at or consider the evidence that impacts to late-successional old growth forests and Late-Successional Reserves along the Blue Ridge Alternative Route are not inconsequential. Reviewers of the DEIS have had no chance to look at or consider the evidence of actual environmental consequences of the cataloged facts that are compared in DEIS Table 3.4.2.2-1 which is the foundation and underpinning of the comparison of the Proposed Route versus the Blue Ridge Alternative Route. IND130-48 cont

The public and agency review function cannot have been adequately performed. A supplemental or revised draft EIS is mandatory for compliance with NEPA. As the court stated in the 2006 BLM case in the Northern District of California: "Where the information contained in the initial EIS was so incomplete or misleading that the decision maker and the public could not make an informed comparison of the alternatives, revision of the EIS may be necessary to provide a reasonable, good faith, and objective presentation of the subjects required by NEPA." This is the situation here.

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14. Conclusion

In our comments, we have factually demonstrated that the DEIS assertion that:

1.) Selection of the Proposed Route as environmentally preferable is in error

2.) Blue Ridge Alternative Route would not offer significant environmental advantages is in error.

In our comments, we have factually demonstrated that the Blue Ridge Alternative Route is, in fact, environmentally preferable and that the Blue Ridge Alternative Route would, in fact, offer significant environmental advantages over the Proposed Route.

In support of this (not necessarily in order of importance), we have shown that:

- No northern spotted owl critical habitat would be impacted by Blue Ridge Alternative Route.
- No northern spotted owl suitable habitat would be impacted by Blue Ridge Alternative Route.
- Blue Ridge Alternative Route would not cross an additional northern spotted owl home range compared to the Proposed Route.
- No marbled murrelet critical habitat would be impacted by Blue Ridge Alternative Route.
- Impacts to marbled murrelet habitat would be inconsequential.
- Long-term impacts of Blue Ridge Alternative Route to late-successional old growth forests would be inconsequential.
- Blue Ridge Alternative Route would cross only 9 waterbodies while the Proposed Route would cross 65 waterbodies.
- Blue Ridge Alternative Route would cross fewer fish bearing streams than the Proposed Route.
- Proposed Route would impact two domestic water sources while the Blue Ridge Alternative Route would not impact any domestic water sources.
- Proposed Route violates Pacific Connector's criteria to avoid impacts to waterbodies by locating the pipeline on ridgetops such as the Blue Ridge Alternative Route.
- Proposed Route would impact a site with hazardous substances.
- Proposed Route would be located in floodplains at three locations. Floodplains would be avoided by Blue Ridge Alternative Route.

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- Proposed Route would cross a rapidly moving landslide which would be avoided by the Blue Ridge Alternative Route.
- Proposed Route violates Pacific Connector's criteria to avoid geologic hazards where feasible and practicable.
- Blue Ridge Alternative Route location parallel to stable ridgetop logging roads would have significantly less environmental impacts than the Proposed Route collocated on the BPA powerline which crosses difficult and rugged terrain.
- Proposed Route would cross 61 private parcels with 33 homes while the Blue Ridge Alternative Route would cross 23 private parcels with 3 homes.
- DEIS assertion that property values would not be affected is based only on studies with no specific analysis of local properties or conditions.
- Blue Ridge Alternative Route would have no eminent domain issues while on the Proposed Route 15 landowners have expressed their intention to legally resist right-of-way acquisition by PCGP.
- Impacts to Late-Successional Reserves by Blue Ridge Alternative Route would be inconsequential.
- DEIS violates numerous NEPA regulations and requirements in every instance when comparing impacts to various resources of the Proposed Route versus Blue Ridge Alternative Route.

Our comments authoritatively demonstrate that the Blue Ridge Alternative Route is environmentally preferable to the Proposed Route and would offer significant environmental advantages.

Our comments authoritatively demonstrate that the Blue Ridge Alternative meets the FERC's evaluation criteria for selecting alternatives as set forth in the DEIS:

1.) "Technically and economically feasible, reasonable, and practical";

2.) "Offer a significant environmental advantage over the proposed action";

3.) "Have the ability to meet the objectives of the Project".

The DEIS acknowledges that the Blue Ridge Alternative Route is technically and economically feasible, reasonable and practical, and would meet the objectives of the pipeline project. Our detailed comments authoritatively demonstrate that the Blue Ridge Alternative Route is environmentally preferable and offers significant environmental advantages over the Proposed Route.

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15. Biographical Sketch

Mark Sheldon

Mark is a long-time resident and landowner along the Proposed Route. As a stakeholder, he has been an active intervenor in the Jordan Cove Energy and Pacific Connector Gas Pipeline environmental impact statement process. Mark has engaged Phil Hall and Owen Schmidt as consultants in commenting on the Jordan Cove Energy and PCGP EIS.

Phil Hall

Phil holds a bachelor's degree in forestry and a bachelor's degree in conservation from North Carolina State University. Phil has 38 years of experience in almost every aspect of forestry, forest engineering, and natural resource management. Phil has extensive NEPA and land use planning experience which has taken him to twenty-two BLM offices, sixteen National Forests, two Indian Reservations, ten states and Washington, D.C. in various capacities, including interdisciplinary team lead, program/project lead, NEPA trainer, expert witness in litigation, and consultant. At the national level his NEPA and natural resource work has included the Department of Interior, Department of Agriculture, Justice Department, Executive Office of the President (Council of Environmental Quality), and Senate hearings. Phil completed a thirty year career with the Bureau of Land Management in 2006. Since retiring from the Bureau, Phil has worked for Mason, Bruce and Girard Natural Resource Consultants, and as a self-employed Natural Resource Consultant.

Owen Schmidt

Owen L. Schmidt, BA, MA, JD, has more than 32 years' service with the Federal Government. He served as Senior Counsel with the U.S. Department of Agriculture, Office of the General Counsel in Portland, Oregon, where he advised USDA agencies in Washington and Oregon. He was also a Special Assistant United States Attorney in the District of Oregon. Before joining USDA he was an attorney for the Bonneville Power Administration, where he joined the legal staff after several years as an Environmental Specialist. Mr. Schmidt received his J.D. from Northwestern School of Law of Lewis & Clark College (1977), and a B.A. (1969) and M.A. (1973) in biology from St. Cloud State University, Minnesota. He is a frequent author and lecturer on the National Environmental Policy Act. He was the Editor of Oregon Birds, a quarterly journal of Oregon Field Ornithologists, for 14 years (1985-99), and is a long-time member of the Oregon Bird Records Committee.

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These comments are also in cooperation with the following individuals who are all directly affected land owners on the proposed route:

James R. Davenport
61954 Old Wagon Rd.
Coos Bay, OR 97420

Ronald L. & Molly A. Foord
94615 Boone Creek Ln.
Coos Bay, OR 97420

Gary Gunnell
94903 Country Ln.
Coos Bay, OR 97420

Kim Leberti & Dustin Clarke
97148 Straw Smith Ln.
Coos Bay, OR 97420

Nova D. & Ellen M. Lovell
61984 Old Wagon Rd.
Coos Bay, OR 97420

Daniel S. & Anna M. Fox
53870 Beach Loop
Bandon, OR 97411

David L. & Emily J. McGriff
61869 Old Wagon Rd.
Coos Bay, OR 97420

A. John & Mary M. Muenchrath
62241 Old Sawmill Rd.
Coos Bay, OR 97420

Curtis Pallin
62225 E. Cathing Slough Rd.
Coos Bay, OR 97420

Stalcup Living Trust (Jean)
95105 Stock Slough Ln.
Coos Bay, OR 97420

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Dee Willis
60669 Stock Slough Ln.
Coos Bay, OR 97420

Mike & Eura M. Washburn
61829 Old Wagon Rd.
Coos Bay, OR 97420

Will Wright
PO Box 1442
Coos Bay, OR 97420

Karen Solomon
95089 Gunnell Ln.
Coos Bay, OR 97420

Fred, Dave and Jason Messerle
94881 Stock Slough Lane
Coos Bay, OR 97420

Jake & Stephanie M. Robinson
94961 Stock Slough Lane
Coos Bay, OR 97420

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IND131

Paul Watte, Coquille, OR.
A major concern that apparently has not been discussed is the amount of water needed for this operation. Recent drought conditions could put at risk that this water source will be depleted for the drinking water needs of the towns of North Bend and Coos Bay Oregon. This really should be looked at before proceeding. IND131-1

Another concern is being able to purchase affordable fire insurance for the citizens and cities of North Bend and even Coos Bay. I have checked three different insurance companies and not one can provide a quote based on the location of the Jordan Cove project. IND131-2

Sincerely,

Paul Watte

IND131 Paul Watte, Coquille, OR

IND131-1 Water needs for the terminal are addressed in section 4.4.2.1.

IND131-2 Comment noted.

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IND132

ORIGINAL

To: Federal Energy Regulatory Commission
Referencing dockets # CP13-483 and CP13-492

I am writing to express my concerns about the proposed Pacific Connector Pipeline and Jordan Cove LNG Terminal. There are many ways that this project is a bad decision. It will not be safe – pipelines break and leak potentially harming or killing people living near the proposed site. The LNG terminal would be built on unstable sand dunes in areas subject to earthquakes and tsunamis. It will cut through our forests and endanger our rivers and streams. It will endanger protected animal species. IND132-1 IND132-2

Climate change is a very real threat to our world. We need to decrease our dependence on fossil fuels of which LNG is one. LNG is subject to methane leaks. Unburned methane is more potent a greenhouse gas than carbon from burning coal. IND132-3

I ask you to NOT permit the building of this pipeline and LNG terminal. We owe this to our children. We want to leave them a better world than we have now.

Sincerely,
Nora Kelly Barker
Nora Kelly Barker
24636 Butler Road
Junction City, OR 97448
541-998-8207

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OFFICE OF THE
SECRETARY
2015 JAN 27 A 11:41
FEDERAL ENERGY
REGULATORY COMMISSION

IND132 Nora Kelly Barker, Junction City, OR

IND132-1 Safety is addressed in section 4.13.9. As noted in that section, there are over 300,000 miles of gas transmission pipelines. Most serious incidents involve older pipelines. As noted on table 4.13.9.3-2, 2 out of 123,706 accidental deaths in 2005 were due to natural gas transmission pipeline accidents. Deaths due to motor vehicle accidents are more than 20,000 times as great, deaths due to fires more than 1,500 times as great.

IND132-2 Impacts on old growth forest are addressed in section 4.5.1.2. Impacts on federally-listed threatened and endangered species are discussed in section 4.7.

IND132-3 See the response to IND1-1.

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1-8-15

Kimberly Bose, Sec'y.
FERC
888 First Street N.E.
Room 1A
Washington D.C. 20426

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SECRETARY OF THE
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REGULATORY COMMISSION

IND133

to FERC,

Re: Proposed Veresen gas pipeline in Oregon.

the proposed construction of the 230 mile long LNG pipeline from Malin, Oregon to the terminal at Coos Bay is dangerous. Canadian Corporation, Veresen, has determined that because the pipeline will cross low-density population areas, the pipe can be less thick, dug less deeply and inspected less frequently. IND133-1

Here are a few issues that tell me this pipeline is wrong:

* A foreign corporation using eminent domain to gain access to our lands in Oregon to export their natural gas for their profit. We get nothing except headaches, literally, from non-Oregon gas emissions. IND133-2
* the LNG comes from fracking, the most environmentally destructive method of fossil fuel extraction. IND133-3
* an earthquake or tsunami would easily result in a fireball explosion. IND133-4
* Natural gas suppliers are the least government regulated energy producers in the industry. Each month, somewhere in the world, a natural gas pipeline has a major leak or an explosion.
* the Jordan Cove terminal facility would emit 2.166 million tons of CO_2 per year, more than doubling what Oregon's only coal, Boardman Coal, emits IND133-5

IND133 Karen Cutler, Glendale, OR

IND133-1 The risk associated with construction and operation of the proposed pipeline, and measures that would be implemented to reduce that risk, are discussed in section 4.13.9 of the EIS. The pipeline would be designed and constructed according to Class Locations required by DOT regulations as described in section 4.13.9.1.

IND133-2 Comment noted.

IND133-3 Fracking, or hydraulic fracturing, is used during exploration and production of natural gas. As stated in our response to IND1-2, the FERC does not regulate the exploration or production of natural gas. In fact, fracking is not part of the Project; and therefore, the environmental impacts associated with that activity will not be analyzed in our environmental document. See response to IND1-3.

IND133-4 The potential for an earthquake or tsunami to occur at the proposed LNG terminal site, and potential effects of an earthquake or tsunami on the LNG terminal are discussed in the EIS. Proposed design features as well as our additional recommendations to minimize those effects are discussed in section 4.13 of the EIS.

IND133-5 Comment noted. See the response to IND1.

20150120-0142 FERC PDF (Unofficial) 01/20/2015

As the arctic melts, the cold air moves south giving us the impression that warming is not really happening. but in a few short years, that will stop and we will experience much hotter, drier weather unless we stop approving these enterprises that are killing us.

Who will clean up the damage done to our fisheries, our land, water + air when there is an accident? IND133-6

It will be us taxpayers

Please stop passage of this pipeline.

Sincerely,

Karen Cutler
218 Fortune Branch Rd.
Glendale, OR. 97442
541-832-2490

IND133 Continued, page 2 of 2

IND133-6 The applicant would be required to mitigate for impacts from the Project.

20150127-5229 FERC PDF (Unofficial) 01/27/2015

IND134

Mike Kelley, Days Creek, OR.
Regarding Jordan Cove Energy Project, L.P.
Docket No. CP13-483-000
Pacific Connector Gas Pipeline, L.P.
Docket No. CP13-492-000

Private Citizen's concerns are as follows:

1) The decommissioning and restoration of the pipeline and its right-of-was are vague to me at best. Basically stating if it is decided the pipeline will be decommissioned it must go through environmental approval as to what is to be done if decommissioned. I feel it should address more of the "what if" at this point, meaning before it is even constructed. Something like it will be filled with some type of slurry and the right-of-way will be restored and returned to the property owners. If it is decommissioned then that should be the end of the project. No passing it on for another use or on to another entity for other use unless it again goes through an approval process that includes the owners of the land at the time the change takes place. IND134-1

2) A provision needs to be in place and action taken before construction starts to equip and train all of the rural fire departments along the pipeline route so they can adequately deal with any problems that arise. This would include, but not be limited to, fire and emergency medical services. As a resident of one of these small communities, and familiar with how they are equipped, or more correctly not equipped, this needs to be addressed now. IND134-2

3) As I understand it, currently the gas will not be odorized while in the pipeline. This sound absolutely hazardous. If there is some type of leak how will it be recognized? You just wait until a fire breaks out and then deal with it? This seems wrong in so many ways. IND134-3

4) Regular inspections of the pipeline, including in rural areas, need to be in frequent intervals so any problems from trespassers, vandals and "terrorist threats" can be discovered. There are many people who are extremely against this project so attempts against it during construction and after completion are to be expected in my opinion. Not every citizen has a level head and attitude in these situations so security should be a major concern for all the reasons listed above. IND134-4

Respectfully submitted by:

Mike Kelley
P O Box 121
2121 Woods Creek Road
Days Creek Oregon 97429

IND134 Mike Kelley, Days Creek, OR

IND134-1 Section 2.7 addresses the process that would be implemented if Pacific Connector proposed to abandon the pipeline facilities. This process would include developing a new environmental report with input from property owners and stakeholders, at which time all issues related to decommissioning would be thoroughly evaluated.

IND134-2 The EIS addresses impacts the Pacific Connector pipeline may have on local fire departments in section 4.9.2.6. That section indicated that Pacific Connector has produced an Emergency Response Plan, a Fire Prevention and Suppression Plan, and a Safety and Security Plan. In addition, DOT safety regulations require the pipeline company to coordinate with local responders. Pacific Connector would provide appropriate training to local emergency service providers before putting the pipeline into service.

IND134-3 Because it would be an interstate natural gas pipeline, federal law does not require that Pacific Connector odorize the gas transported through the proposed pipeline.

IND134-4 The Pacific Connector pipeline and aboveground facilities must be operated and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. Part 192 specifies the frequency of pipeline patrols and leak surveys based on the class of the pipeline (see EIS section 4.13.9.1). The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures.

20150128-0031 FERC PDF (Unofficial) 01/28/2015

CPB-483
CPB-492
1-20-15

IND135

ORIGINAL

THE L.N.G. WOULD INCREASE GAS PRICES FOR ALL AMERICANS WHILE ELIMANATING UP TO 1.2 MILLION MANUFACTURING JOBS IN AMERICA [AS DETERMINED BY THE DEPARTMENT OF ENERGY]. IND135-1

SO, WE GET HIGHER PRICES AND LOOSE 1.2 MILLION JOB, ALL TO GET 101 NEW JOBS FOR LOCAL WORKERS IN JORDAN COVE, OR.

THAT KIND OF MATH DOSE NOT ADD UP FOR ME.

WHEN FACTORING IN ALL THE OTHER REASONS TO NOT BUILD THE JORDAN COVE LNG TERMINAL [WILD LIFE, EARTHQUAKES, RURAL SAFETY, EMINENT DOMAIN ISSUES, AND THE BIGGY ... CLIMATE ISSUES...

JORDAN COVE LNG IS A BAD IDEA FOR US AND THE PLANET.

KB Seich

RECEIVED JAN 28 2015

IND135 K.B. Seich

IND135-1 A 2012 study by the Energy Information Administration (EIA) of the U.S. Department of Energy (DOE) stated: "…U.S. natural gas prices are projected to rise over the long run, even before considering the possibility of additional exports." Another 2012 study by NERA Economic Consultants for DOE found that the nation is "…projected to gain net economic benefits from allowing LNG exports."

20150128-0032 FERC PDF (Unofficial) 01/28/2015

ORIGINAL ORIGINAL

IND136

STATEMENT OF FRANK A. HARVEY
in regards to Draft Environmental Impact Statement (DEIS) regarding
Jordan Cove/Pacific Connector LNG Project
Docket Numbers CP13-483-000 and CP13-492-000

My name is Frank A. Harvey and I reside at 5114 Cottage Ave., Klamath Falls, OR 97603. I have been a member of the Laborers International Union of North America (Local 121) for more than 25 years, however, I make this statement as a resident of Klamath County, Oregon.

In 1992 I came from Portland to work on a pipeline here in Klamath Falls. I met a local woman married, and eventually had two children. We have lived in Klamath County ever since, both worked, and both contributed to the local economy even though I've had to work out of town a lot of times. None of this would have happened if it was not for a "temporary" pipeline job.

As already stated, I have had 25 years experience in construction projects, large and small, all over the state of Oregon. I have seen contractors usually do things correctly and occasionally try to take shortcuts. I have worked on four "major" pipeline projects in Oregon. I have been fortunate enough to work on almost all aspects of the pipeline from clearing to clean up and final restoration, and everything in between.

I am not an engineer or scientist. I have not read the full DEIS but I have read the executive summary. My experience in and out of the trenches (both figuratively and literally) allows me to have a great deal of knowledge and experience about how pipeline construction actually works. Because of this I offer the following opinions and observations for your consideration:

1) Large Projects

This is one of, if not the largest construction project ever in the state of Oregon. Not all circumstances and conditions have been completely identified. However, industry best practices, federal and state regulations, inspectors, monitors, and and other oversight features will ensure that the project is conducted according to acceptable modern standards of society. Not every individual contingency is covered in the DEIS but construction best practices and regulations will ensure that every particular situation will be remedied in an acceptable manner.

Owners and contractors have a very high investment in these procedures. They will do everything possible to ensure that work progresses in a satisfactory manner and that there are no time delays, extra problems, bad publicity and ultimately, extra costs. I have seen this repeatedly in construction. Owners and contractors do not want problems that will affect them in the future.

2) Maintaining Pipeline Right-Of-Way (ROW)

It has been my experience, since working on the pipelines, that if I am out in the woods exploring or hunting, I look for an open area such as a ROW. I have noticed it is easier for me to spot deer and other game when weaving in and out of an ROW. It is my opinion that encountering a right-of-way is much better than encountering a clear-cut area. If that makes me a weak hunter than and so be it. This has been my experience.

FILED
SECRETARY OF THE
FEDERAL ENERGY
REGULATORY COMMISSION
JAN 28 A 11:48

IND136 Frank A. Harvey, Klamath Falls, OR

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IND136 Continued, page 2 of 4

In 1992 and 93 I spent a considerable amount of time working with cathodic protection on the new pipeline that we were installing. As part of this work we had to monitor the amount of cathodic protection that was being supplied to the old 36 inch line as well as to the new 42 inch line.

The new items that we were installing were just part of the project. What really surprised me was that we connected with the old existing pipeline and in several instances went in and made repairs(to both the cathodic protection and actual pipe) to the old pipeline. Some of the repairs were really obvious to my relatively untrained eye but a few of them I could not understand. Apparently, the engineers and other pipeline personnel knew what they were doing and what to look for.

The point here is that the pipeline owners have a huge investment in any pipeline and will not take shortcuts that may eventually endanger their investments. I believe that any natural gas or oil pipeline is safe unless it is affected by some outside source.

3) Private Property Owners

It has been my experience that most private property owners who have a gas pipeline crossing their property come out ahead in the long run. I have been involved in putting the gas line within 8 feet of a private house. I have helped build fences and restore landscaping for private property owners in Klamath, Jackson, Washington, and Deschutes Counties.

In Klamath County we crossed several farms and ranches with the ROW. I distinctly remember one farm outside of Bonanza where we literally spent days picking up small rocks from the ROW. When we were done you could look down the ROW and see how clean it was and how the surrounding farmland had many more surface rocks than what we had cleaned up on the ROW.

The same thing happened in Deschutes County, outside of Bend, where there were many nice, new large acreage non-farm houses. We sent a rock picking machine up and down the ROW and followed up with a crew consisting of approximately 6 people, hand picking what the machine had missed. When we were done you could look at where we had cleaned and look at the soil to either side of it where natural earth continually pushed new rocks to the surface.

In both of the above examples, after we left, the site was definitely in better condition than it was before we went in.

I have also seen a few instances where private property owners probably did not come out ahead after a pipeline went through their property. In almost all these cases, they were resistant from the start and would not work with the property man (a pipeline term). They would not work with the contractor and their demands were so extensive or ridiculous that they ended up with the minimum amount of restoration that was required.

4) Environmental Issues

I have been involved in installing miles of soil erosion silt fence in both wet and dry areas. Some of the places that we installed silt fence seemed ridiculous at the time, but I have later been able to figure out why we did it when heavy rains came. The same thing applies when it comes to placing rip rap, trees and rocks in fish habitats. These items may look silly at first but eventually they fulfill the intended purpose.

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I have been involved in several minor fuel spills. One time, near Sunriver, Oregon, a stringing track hit a rock and put a small hole in its fuel tank. The truck continued to travel for several thousand feet putting droplets of diesel fuel into the many mud puddles on the Forest Service road. My crew was working at the compressor station just over the hill so we got the initial call to respond to this spill.

We had a standard size fuel spill kit in our truck and we proceeded to put down diapers and used the dissipating chemical that was included. The chemical work very well in breaking up the diesel sheen and we used the diapers to soak everything up. However an, inspector came up and asked we were using when we showed it to him he pulled out a spec book and said that this was not an allowable treatment.

Eventually more people showed up, with the proper chemical, and we had 12 to 15 people treating the mud puddles and putting down diapers to rectify the problem. The point here is that we did our best, the inspector was there to supervise us, and eventually the situation was taken care of.

On every pipeline that I have worked on the importance of not harming wildlife has been stressed. This is true of even of pests such as rattlesnakes. If we encountered a rattlesnake in a trench or somewhere else where it interfered with our work, we had to get an environmental inspector to move it. We could not kill or harm it.

In regards to sanitary facilities, we were allowed to urinate on the right away (much like you would do anywhere in the woods). However, any defecation had to be performed in approved tow behind trailers. I have made countless numbers of trips taking crew members, sometimes several miles, to use the facilities.

5) Cultural Issues

I have installed thousands of feet of temporary (usually orange) construction fencing to protect culturally sensitive areas. This fencing is also erected to delineate the ROW and to mark and protect culturally sensitive areas outside of the ROW.

One time, at the Williamson River in Klamath County, we were doing an open cut crossing. The right-of-way was approximately 75 feet wider than normal on both sides so that there would be room to place the spoils from the cut and still have room to work. All of the spoils were placed within the extended right away but some brown, slurry like, water flowed outside of the construction fencing.

Because this particular crossing was at a point where a 36 inch gas line (constructed in the 1960s) crossed the river, there was an open space on the riverbank. Over the years people had used this open space as a camping area because it provided easy access to the river. As a result, there was a huge pile of trash and garbage that had accumulated.

The foreman instructed us to hand dig a trench just inside of the construction fence so that the water/slurry mix would flow into a containment area. While completing this task we were talking with the archaeological inspector and we said "why are we trying to protect this pile of trash?". He responded that "all archaeological sites are piles of trash of some sort". This was truly a learning moment for me.

One of the most fascinating cultural related events that I participated in on a pipeline job was when we were installing a 12 inch line between the Co-gen Plant in Klamath Falls and Ashland. After the

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pipeline left the Co-gen site, it followed an old Weyerhauser log truck road (about 10 miles) past the town of Keno.

I was working with the bending engineer and we were responsible for shooting in and calculating over bands, sags, left, and right turns for the pipeline. Some, but not all, of this work was done before the ditch was ever dug.

One morning we were instructed to go out to the Weyerhauser road, to a suspected Native American burial site that was due to be slowly excavated with a rubber tired backhoe instead of a tracked, relatively high production, excavator. We were told that there might be possible burial sites and/or other archaeological findings since this area was fairly close to the banks of the Klamath River. We were told that we should be respectful and dignified in anything that we we saw and did.

We were also told to avert our eyes if anything culturally sensitive appeared. This particular instruction alone made me, more than ever, want to see everything that was within view.

The excavation proceeded very carefully and slowly, as it always does when you are potholing or trying to locate a utility or other specific buried item. About a half hour into the task, the rubber tired backhoe made a gentle pass and brought up a bone about 15 to 18 inches long.

Almost immediately, it was like the scene out of an old Western movie, except instead of pulling out six shooters, people pulled out their cell phones. The crew foreman, the inspector, the environmental inspector, the tribal monitor, the archaeologist, and the owner's representative all made phone calls. All productive work stopped instantly.

In the next few days, we (bending engineer crew) made several trips to the site as the higher-ups tried to decide what to do. I will not discuss some of the things that we saw because they are culturally sensitive. However, I did not see any inappropriate behaviors or actions in regard to this site. What I saw was an extensive effort to correct, mitigate, and resolve the situation in a respectful, dignified manner satisfactory to everyone.

Initially, the owner and contractor attempted to bore underneath the site. This did not work because after encountering 8 feet of topsoil (along the Klamath River) the bedrock was too hard to bore through. I was told that this effort alone cost $50,000. I actually watched the boring machine trying to slam through the hard rock. In the end, the pipeline along the road was bent to do a sort of semi-circle around the site with a concrete wall in between. I know this because our crew shot in the potential bends on the first day. I do not know what the final cost was.

All of the above anecdotal examples are given to show what happens routinely or semi-routinely on a large pipeline project. I could give dozens and dozens of more examples of how pipeline employees address problems, mitigate circumstances, and try to do the right thing. This is just part of a pipeline project. When changing and unforeseen situations are encountered, they are dealt with in a appropriate manner.

In summary, it is my opinion,as a resident of Klamath County and the state of Oregon, that the DEIS more than adequately addresses environmental concerns about the Jordan Cove and Pacific Connector projects. Any potential identified or unidentified problems will be dealt with by the regulating authorities, owners, or contractors. IND136-1

IND136 Continued, page 4 of 4

IND136-1 Comment noted.