

June 23, 2009

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

RE: Comments on Draft Environmental Impact Statement, Jordan Cove LNG Terminal and Pacific Connector Gas Pipeline, Docket No.'s CP07-441-000 & CP07-444-000

Dear Ms. Bose,

We submit these comments on the Final Environmental Impact Statement (FEIS) for the proposed Jordan Cove LNG Terminal and Pacific Connector Gas Pipeline Project (Project), FERC/EIS-0223F, Docket Nos. CP07-441-000, CP07-444-000, on behalf of the following organizations: Friends of Living Oregon Waters (FLOW), Umpqua Watersheds, Oregon Wild, Oregon Sierra Club, Pacific Environment, Ratepayers For Affordable Clean Energy (RACE), Citizens Against LNG, Oregon Citizens Against the Pipeline, Southern Oregon Pipeline Information Project (SOPIP), Northwest Environmental Defense Center (NEDC), Klamath-Siskiyou Wildlands Center (KS Wild), Rogue Riverkeeper, Cascadia Wildlands Project (CWP), Jody McCaffree, and Francis Etherington (collectively, "the Coalition"). The Coalition includes a broad, local and regional spectrum of business, environmental, safety, and property interests. Each organization has members who, and interests that would be harmed by the proposed LNG terminal and/or pipeline.

We hereby incorporate the substantial DEIS comments submitted by the Coalition on December 4, 2008 as well as all DEIS and FEIS comments submitted by all members of the Coalition into these FEIS comments.

I. THE FEIS PROVIDES A LEGALLY INSUFFICIENT ANALYSIS OF THE PURPOSE AND NEED FOR THE PROJECT

When the purpose and need of a project are overly narrow, the resulting range of alternatives is inadequate under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, (NEPA). *See Env'tl. Law & Policy Center*, 470 F.3d 676 at 684 (citing *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 199 (D.C. Cir. 1991)). An agency cannot define the purpose of a project in such a way as to foreclose the ability of any alternatives to meet the

stated purpose. *See Simmons v. U.S. Army Corps of Engineers*, 120 F.3d 664, 669 (7th Cir. 1997). In the EIS, an agency must “‘rigorously explore and objectively evaluate all reasonable alternatives’ to a proposed plan of action that has significant environmental effects.” *NRDC v. USFS*, 421 F.3d 797, 813 (9th Cir. 2005) (citing 40 C.F.R. § 1502.14(a)). Federal agencies are directed to “exercise a degree of skepticism in dealing with self serving statements from a prime beneficiary of the project and to look at the general goal of the project rather than only those alternatives by which a particular applicant can reach its own specific goals.” *Envtl. Law & Policy Center v. U.S. Nuclear Reg. Comm.*, 470 F.3d 676, 683 (7th Cir. 2006) (quoting *Simmons v. U.S. Army Corps of Eng’rs*, 120 F.3d 664, 666 (7th Cir. 1997)).

FERC’s approach to the siting of the Jordan Cove/Pacific Connector project unduly rules out other gas supply alternatives by defining the purpose so narrowly as to prevent alternatives from meeting that purpose. FERC states that domestic gas alternatives fail to meet the objective of diversifying supplies through LNG. FERC also states that use of domestic alternatives would not result in interconnections for the Williams pipeline and Avista, a local utility. FERC makes next to no attempt to weigh other natural gas pipeline and storage proposals, and even existing infrastructure such as the Medford lateral, in assessing how project objectives might be met. In short, FERC has unreasonably narrowed the purpose and need analysis of the project in order to foreclose other alternatives. By including importation of foreign LNG as part of the project purpose, FERC has dismissed all domestic sources for the claimed natural gas needs. Such a narrow definition presumes that importing foreign fossil fuels is somehow in the public interest. This assumption is patently false, and violates NEPA by impermissibly defining the purpose of the project so as to prevent a finding that any of the myriad alternatives are viable. Moreover, FERC fails to analyze whether a combination of the stated alternatives could meet the illegally narrow project purpose.

As detailed in our DEIS comments, the Western region has an abundance of natural gas supplies, and the potential of the region to supply the West Coast is evident by the number of speculators who have proposed pipelines to connect the Rockies supplies to West Coast markets. Indeed, PG&E has received approval from the CPUC to be the anchor shipper on the Ruby Pipeline, which will be able to deliver more natural gas (1.3 to 1.4 bcf per day) than the Jordan Cove LNG project. CNBC PG&E-Ruby Natural Gas Pipeline Deal Approved, Nov. 6, 2008 available at <http://www.cnbc.com/id/27583018/site/14081545/for/cnbc/>. Ruby will connect

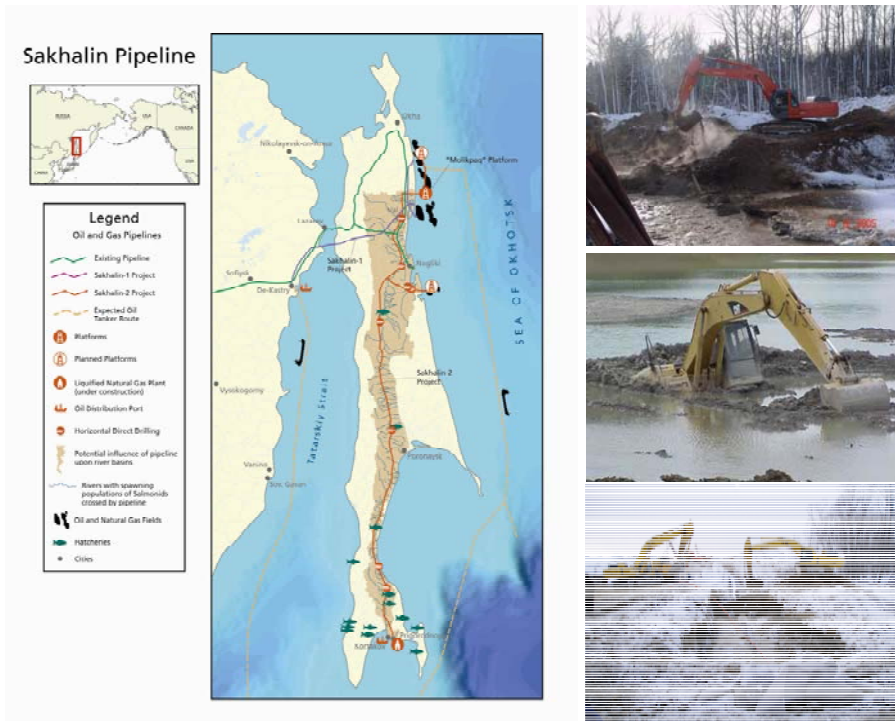
California to the Opal hub where natural gas is currently trading below \$3 per mmbtu. Wyoming Consensus Revenue Estimating Group, May 27, 2009, *available at* <http://74.125.155.132/search?q=cache:oG5MYmLWqoEJ:eativ.state.wy.us/creg/CregNews.pdf+opal+hub+spot+prices+june+2009&cd=3&hl=en&ct=clnk&gl=us>, *last visited* 6/22/09.

In contrast, the Jordan Cove project would be competing with other importing countries such as Japan, which in late 2008 paid more than \$13 per mmbtu for LNG. Natural Gas Intelligence, Weekly Gas Price Index for Northwest Domestic, Sept. 29, 2008; “Kogas ready to buy LNG from Tangguh at US\$20 per MMbtu,” Antara News, July 23, 2008; “Indonesia to sell 500,000 tons/year LNG to Tokyo Gas; \$20/mmbtu.” Morningstar News, Aug. 26, 2008. *See also* FERC “Market Oversight” Report for November 2008. In recent weeks, Japan has negotiated long-term supply contracts for \$8.60/mmbtu, almost triple the current Opal, Wyoming price. *See* Platt’s Electric Power, “Japan LNG buyers, Qatargas 1 end five-year price dispute: sources” *available at* <http://www.platts.com/Electric%20Power/News/8648653.xml?src=rssheadlines0> *last visited* 6/22/09. In fact, prices paid by Japanese LNG purchasers in recent months ranged from \$10-\$15/mmbtu, according to the June 22nd report from Platts.

FERC fails to address the potential for Ruby to meet significant objectives of the Pacific Connector, even assuming an increased need for natural gas. FERC simply asserts that because Ruby is a longer pipeline, it is more environmentally harmful, without analyzing the various purposes Ruby could meet, and without any data to support its assertion. Furthermore, FERC’s argument completely fails to acknowledge the full life-cycle impacts of LNG development. For instance, the extraction of natural gas, delivery of this gas to liquefaction facilities, and subsequent production and shipping of LNG are essentially ignored in the FEIS. We have noted the 25% additional carbon emissions of LNG over domestic sources, but there are many other environmental impacts associated with LNG production.

Imported LNG is produced using wells and long pipelines in order for the gas to even reach the liquefaction terminal. As we noted in our DEIS comments, the “upstream” impacts of LNG production are significant. For example, the production of LNG at the Sakhalin II LNG project in Russia has severely impacted aquatic life in this sensitive area. The construction of hundreds of miles of pipeline to deliver gas to liquefaction projects receives no consideration from FERC, despite the agency’s willingness to point to the length of alternative gas pipeline

proposals from the Rockies as a reason not to consider them as environmentally preferable alternatives.



Above: Images from Construction of pipelines for Sakhalin II LNG project.

Below: Major turbidity and sedimentation impacted Eastern Russian salmon populations during construction in Ozernaya River for Sakhalin II project. Photo taken by Sakhalin Environment Watch, June 9, 2005. (Source: Sakhalin Environment Watch & Pacific Environment. March 5, 2007 presentation in Portland, Oregon by Dmitry Lisitsyn, then Board President of Sakhalin Environment Watch. Audio file attached.)



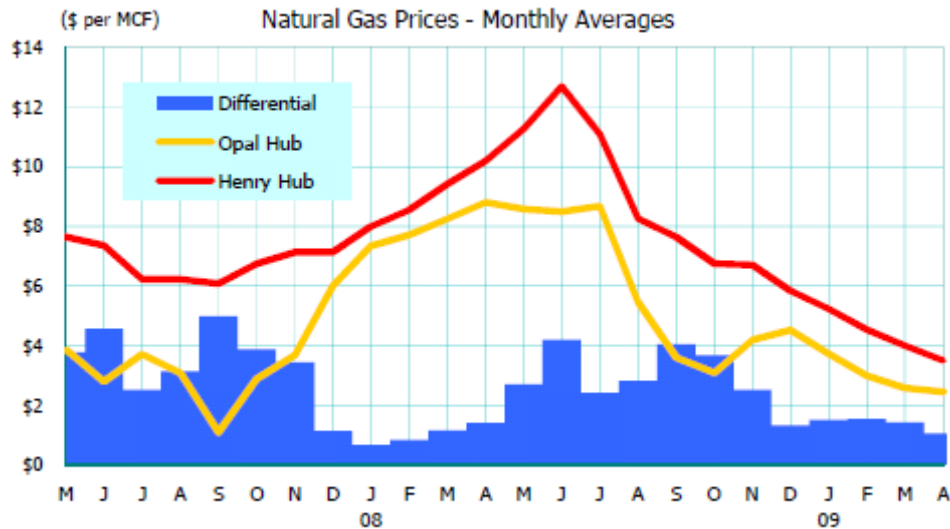
In sum, FERC's comparison of the impacts of the Ruby pipeline to the Jordan Cove/Pacific Connector project is unbalanced because FERC does not account for the full life-cycle environmental impacts of LNG production and makes unsupported claims about the environmental impacts of the Ruby pipeline.

Additionally, FERC fails to address significant new developments with the Ruby project, such as the approval by the CPUC for PG&E to invest in this project. *See* CPUC Approval of PG&E/Ruby project, Nov. 2008 (attached). FERC has also just issued a DEIS for the Ruby project which describes a "bottlenecking" of domestic gas supplies in need of the Ruby pipeline as an outlet to West Coast markets. Ruby DEIS at 3-8 (attached). FERC's rationale for dismissing Ruby as a reasonable alternative is flawed, and FERC should re-evaluate the relative impacts of domestic gas alternatives versus LNG while acknowledging the lower price of domestic gas and the upstream impacts of LNG production, including the lengthy pipelines that are used to bring natural gas to LNG-producing facilities.

As we further discuss *infra*, the Alternatives analysis for the project is deficient because it dismisses Ruby and Sunstone as viable alternatives, though either of these pipelines would satisfy many of the purposes of the proposed project, even under the impermissibly narrow definition. For instance, a recent presentation by Richard Meyers of the California Public Utilities Commission (CPUC) shows that Northern California would have access to ample supplies of natural gas via the Ruby pipeline. *See* Meyers CPUC presentation, May 2009. By defining the purpose of the project so narrowly that domestic gas is excluded, FERC is dismissing domestic alternatives that are likely to be less expensive and more stable. *See* Oregon Department of Energy (ODOE) May 2008 Report (attached to our DEIS comments) and ODOE July 2008 FEIS comments regarding Bradwood LNG terminal (attached to our DEIS comments); *see also* State of Oregon FEIS comments at 29-33.

The FEIS fails to address significant shifts in the natural gas picture in the last year, citing grossly exaggerated estimates of domestic gas prices. With gas at the Opal, WY, hub expected to trade below \$4 through 2010, and currently trading below \$3/mmbtu, FERC's acceptance of ICF International's price estimate in excess of \$7 is unreasonable. *See* Wyoming State Economic Analysis Division, "Wyoming Insight" May 27, 2009, edition (attached). FERC should not give the same weight to industry-funded reports as it gives to independent analyses, such as the 2008 report by the Oregon Department of Energy. ODOE's conclusions have proven

exceedingly accurate, with the recession having caused a significant decrease both in domestic gas prices and demand. Additionally, LNG prices delivered in Pacific Rim markets (Japan, South Korea) thus far in 2009 are consistently more expensive than domestic gas alternatives.



Wyoming Insight, Wyoming Economic Analysis Division, May 2009.

Furthermore, FERC fails to assess strategies for meeting regional gas needs that involve proposed gas storage facilities. Not only is PG&E an anchor shipper on the proposed Ruby pipeline, with a commitment to buy at least 375 mmcf/d, but it has also proposed a large storage project in California’s Central Valley. The Gill Ranch storage project, when combined with additional Rockies gas supplies, renders reliance on foreign LNG even more nonsensical. See Meyers May 2009 Presentation to the CPUC at 11. FERC’s lack of evaluation of new information regarding potential alternatives in domestic gas projects and gas storage is inexcusable. Its dismissal of these issues, which were raised by National Oceanic and Atmospheric Administration (NOAA) Fisheries, the State of Oregon, and many individuals and organizations, is not based on thorough analysis, but rather, as noted by Oregon Department of Land Conservation and Development (DLCD): “FERC staff makes no attempt to identify and evaluate the relative impacts of each project and determine whether any project is environmentally preferable.” State of Oregon FEIS comments at 30. FERC’s failure to both to identify a permissible purpose for the project and to adequately weigh alternatives violates NEPA.

II. THE FEIS FAILS TO ANALYZE THE CUMULATIVE IMPACTS OF THE PROPOSED PROJECT

In an EIS, an agency must also consider the proposed action along with other actions, “which when viewed with other proposed actions have cumulatively significant impacts.” 40 C.F.R. § 1508.25(a)(2). A cumulative impact is defined as “the impact on the environment which results from the incremental impact of the actions when added to other past, present, and reasonably foreseeable future actions regardless of what agency . . . or person undertakes such actions.” *Save the Yaak Comm. v. Block*, 840 F.2d 714, 721 (9th Cir. 1988). Under NEPA, cumulative impacts include direct as well as indirect effects, “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(a).

The Jordan Cove FEIS fails to provide a sufficient cumulative impacts analysis. Because many of the analyses of specific impacts – such as analysis of air emissions from LNG tankers – are incomplete and inadequate, the FEIS assessment of the cumulative impact of the project as a whole is inadequate. There are dozens of examples throughout the FEIS, which we have enumerated in Section V of these comments, where the FEIS defers analysis of key issues until after the FEIS. Without a firm understanding of the project design, proposed mitigation measures, and the likely resulting direct and indirect impacts from the project, the Cumulative Effects analysis of the FEIS (Section 4.13 of the FEIS) is inaccurate, incomplete and legally insufficient.

Many specific examples exist of how the FEIS fails to account for the cumulative impacts of the project. For instance, FERC has failed to evaluate the cumulative greenhouse gas (GHG) emissions and the overall contribution of the project to global warming. As we noted in our DEIS comments, LNG is significantly more GHG-intensive than domestic gas supply alternatives, such as Rocky Mountain and Canadian supplies. *See* Coalition DEIS comments at 22-23, 32-33, and 36-40. We discuss the GHG issue in detail in those comments, and incorporate them by reference here. The importation of LNG would carry a likely GHG penalty of 25% over domestic gas alternatives. Coalition DEIS comments at 39. NEPA requires that FERC acknowledge the overall impact of the project, as a whole, including the impacts of its GHG emissions.

We commented that the project would increase the GHG emissions and that end-uses of the gas – not just the construction and operation of the project – should be considered. FERC

failed to account for these indirect and cumulative impacts. Specifically, PG&E will be a major recipient of the LNG from Jordan Cove. Should this project be built, it will increase PG&E's overall greenhouse gas emissions by up to 1.5 million tons per year since PG&E buys very little coal power, leaving domestic natural gas as PG&E's most carbon intensive fuel. According to several studies, including research by Carnegie Mellon University, the lifecycle "add-on" of LNG is up to 25% greater than that of piped domestic natural gas. By comparison, the PG&E "Climate Smart" program has offset 257,000 tons of greenhouse gases since it began in 2007, or about 17% of what the Pacific Connector would add into PG&E's current emissions portfolio. This would be a serious setback to PG&E's efforts to reduce greenhouse gas emissions. FERC should evaluate the impact of the Jordan Cove/Pacific Connector project on meeting regional greenhouse gas emission goals in a SEIS. Instead, FERC writes,

It is recognized that greenhouse gases (i.e., CO₂) are also emitted from the combustion of the delivered natural gas by end users served by the pipeline. However, these emissions should not be associated with this Project, because fuel supply is generally demand-driven rather than supply-driven. Regardless of whether the JCEP & PCGP Project is constructed, those end users still have a need for fuel, and would need to either rely on the importation of natural gas from another source or on a fuel such as propane or oil, which generates even more greenhouse gas emissions (per unit of energy supplied) than natural gas.

FEIS, 4.13-36.

FERC's response is wholly inadequate and misleading. First of all, FERC fails to acknowledge that LNG will displace use of domestic and Canadian gas supplies - not propane or oil. Because LNG would be used in lieu of domestic supplies that are 25% less GHG intensive, PG&E and other users of LNG imported to Jordan Cove will be increasing their carbon emissions. Additionally, several proposed projects, such as the Ruby pipeline, would provide natural gas to the same customers from domestic sources without the added GHG emissions associated with LNG. Regardless of whether the market is "demand-driven," FERC should assess the impacts of the LNG project on the region's GHG emissions, and acknowledge that the project would be a major setback in regional efforts to reduce GHG emissions.

NOAA Fisheries, the federal agency entrusted with safeguarding marine and anadromous species, recently commented on the inadequacy of the FEIS. NMFS used strong language to describe the inadequacies of the FEIS: "in reviewing the FEIS, NMFS has found that many of

the December 1, 2008, DEIS comments have not been addressed” and further explained the nature of its comments:

The comments are based on NMFS' special expertise and responsibility to manage, conserve, and protect marine and coastal living resources as provided under the Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Marine Mammal Protection Act (MMPA), and the Fish and Wildlife Coordination Act. In all cases, the comments have relevancy, either directly or indirectly, to NMFS' responsibilities under that legislation, and are consistent with the agency's regulatory obligation to its trust resources.

NOAA comments on the Jordan Cove FEIS at 2, posted June 8, 2009.

NOAA pointed out several specific glaring problems with the FEIS, including the issue of fish screens to prevent entrainment of threatened and endangered species:

Jordan Cove no longer proposes to include fish exclusion screens with a fixed water delivery system to the hulls of the ships. NMFS maintains that screening ballast and engine cooling water is the most effective method to minimize adverse effects to the aquatic resources. While the U.S. Coast Guard has identified some regulatory difficulties with the original screening design proposed in the DEIS, those difficulties do not preclude its implementation.

Id.

NMFS is also concerned with the inadequate analysis of stormwater pollution impacts in the FEIS:

Stormwater from the Jordan Cove site will be discharged into Coos Bay. The FEIS says the water will be tested before being discharged, but does not say what contaminants will be tested for and what levels will be allowed to be discharged. There is no indication in the FEIS that FERC recognizes that stormwater carries heavy metals, petroleum products and brake chemicals and compounds that are deleterious to fish and fish habitat.

Id. FERC cannot ignore the serious concerns of NOAA, an expert federal agency. A SEIS is necessary to provide the agency and the public with adequate information about the fish exclusion technology to be used, complete with an analysis of the effectiveness of the plan, and the stormwater testing to be employed. Without addressing these issues, and without the many other missing studies, plans, and analyses pointed out by federal and state agencies, the Coalition, and other individuals and organizations in DEIS and FEIS comments, the FEIS is wholly inadequate and legally insufficient.

The cumulative impacts analysis of impacts to fish and fish habitat is obviously flawed. Multiple agencies, including Oregon Department of Fish and Wildlife (ODFW), U.S.

Environmental Protection Agency (EPA), and NOAA Fisheries, have asked FERC to provide additional analysis of key project elements, such as maintenance dredging and dredge disposal that will routinely impact fish in the Coos Bay area. FERC has also failed to assess impacts from construction of the terminal. According to comments by the State of Oregon on the FEIS: “in comments on the DEIS, ODFW asked, but the FEIS did not address, how dredging of 3.3 million cubic yards of material for the slip area and access channel will have an effect on the salinity of the entire bay. Changes of salinity throughout the bay may affect fish/shellfish distribution in the bay along with spawning and rearing of some fish/shellfish species that use Coos Bay.” State of Oregon comments at 36. In fact, even the State of Oregon mistakenly understates the amount of dredging, which is actually 5.6 mecy. *See* FEIS 2.1.4.4. FERC’s flawed analysis of the direct and indirect impacts of dredging and terminal construction undermines its ability to assess impacts on fish and fish habitat as a whole from the project. After all, the project affects a wide range of habitat for listed Coho salmon and other fish species – both in Coos Bay and in streams and rivers throughout Southern Oregon.

Routine operation of tankers at the LNG terminal will also impact fish, and FERC has acknowledged that future analysis of potential fish screen impacts will be necessary. As we discuss in more detail in Section V of these comments, and as FERC itself admits, Jordan Cove’s proposed system for delivery of ballast and cooling water is completely unproven. It also contradicts recommendations by NOAA and ODFW that all ballast and cooling water intakes be screened. FERC cannot possibly provide an accurate analysis of effects on fish for fish screening measures that are unproven and unstudied. As a result, FERC does not provide a thorough analysis of impacts to fish from ballast and cooling water intakes, or cooling water discharges, and thus fails to accurately assess the overall impact of the project on sensitive fish species and their habitat.

Additionally, ODFW and NOAA have commented that FERC’s analysis of impacts to fish and fish habitat along the pipeline route are inadequate and incomplete. For instance, FERC makes assumptions about the success of Horizontal Directional Drill (HDD) crossings that are inaccurate, pre-determining that these will work and failing to provide a rigorous analysis of alternatives if they fail. In particular, the crossing of the Rogue River will be highly problematic, with ODFW objecting to the use of a wet, open-cut crossing if the HDD were to fail at this location. FERC also fails to provide comprehensive, adequate mitigation for fish and riparian

habitat. The project will lead to increased temperature and sedimentation in dozens (if not hundreds) of streams and rivers. FERC fails to assess the cumulative impacts of construction activities throughout areas that provide habitat for sensitive fish species.

In general, FERC has not only failed to take a hard look at the direct and indirect effects of the project on fish and their habitat, but it has also failed to assess how these impacts – many of them occurring simultaneously – will harm fish throughout Southern Oregon. FERC must issue a SEIS that fully describes the project, its direct and indirect impacts, and the cumulative impacts of the project as a whole on fish and fish habitat.

Throughout the FEIS, FERC makes similar flawed attempts to draw conclusions about the cumulative impacts of the project. The conclusions in Sections 4.13-36 and Section 5 of the FEIS are based on underlying flawed analyses of the direct and indirect impacts of the project. The FEIS omits key studies, plans, and procedures. We have provided detailed comments on these omissions in Section V of these comments as well as in our DEIS comments. FERC's failure to provide this information precludes its ability to provide an accurate cumulative effects analysis. Furthermore, by providing cursory analysis of important environmental impacts such as greenhouse gas emissions, the FEIS fails to provide the requisite "hard look" at the cumulative impacts of the Jordan Cove/Pacific Connector project.

III. FERC'S ANALYSIS OF THE JORDAN COVE PROJECT VIOLATES NEPA BY FAILING TO PROVIDE THE PUBLIC WITH ADEQUATE INFORMATION

In our comments to the DEIS, the Coalition and others provided detailed comments regarding the lack of adequate, complete information about the project's design and impacts. We incorporate the DEIS comments here by reference in their entirety. NEPA requires federal agencies "consider every significant aspect of the environmental impact of a proposed action . . . [and] inform the public that it has indeed considered environmental concerns in its decision-making process." *Earth Island Inst. v. USFS*, 351 F.3d 1291, 1300 (9th Cir. 2003). To accomplish this goal, NEPA imposes procedural requirements to ensure that federal agencies "take a 'hard look' at environmental consequences." *Id.* Specifically, NEPA requires the preparation of an environmental impact statement (EIS) for all agency actions that "may have a significant effect on the quality of the human environment." There remain many elements of the proposed projects that have not received the requisite "hard look" because key issues – such as sediment disposal, dredging, and fish screening plans – are incomplete and subject to change.

Despite multiple DEIS comments asking that FERC provide more complete information in the FEIS, many conclusions in the FEIS are premised on unproven assumptions and incomplete project designs, studies, plans and reports. The clear legal purpose of requiring an agency to prepare an EIS is to guarantee that both the public and the agency have available to them -- before the agency makes its decision and in an integrated comprehensive document -- detailed information regarding the impacts of the agency's proposed action. *See* 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."). FERC's FEIS is so incomplete that its conclusions are conditioned on the applicant and FERC staff completing literally dozens of additional studies, plans and consultations. Unfortunately all of this additional study and information will occur after FERC has made its preliminary determination regarding whether the project is in the public interest. Moreover, all of the missing information makes it exceptionally difficult if not impossible for the public to be adequately informed and to comment on the project in a meaningful manner. An EIS should "provide the public with information on the environmental impact of a proposed project as well as encourage public participation in the development of that information." *Calif. v. Block*, 690 F.2d 753 at 776 (9th Cir. 1982) (quoting *Trout Unlimited v. Morton*, 509 F.2d 1276, 1282 (9th Cir. 1976)). Thus the FEIS fails to achieve NEPA's essential purpose. The inadequacy of the FEIS subjects FERC to legal challenges under NEPA.

IV. THE FEIS IS NOT COMPREHENSIVE

Consistent with NEPA, the EIS must be a *comprehensive* document, containing all of the information relied upon by FERC in analyzing the potential environmental impacts of the Project. *See I-291 Why? Ass'n v. Burns ("I-291")*, 517 F.2d 1077, 1081 (2d Cir. 1975) (holding an FEIS inadequate for failure to include relied upon studies within the actual document). *See also Glenbrook Homeowners Ass'n v. Tahoe Reg'l Planning Agency*, 425 F.3d 611,615 n. 1 (9th Cir. 2005) (the EIS is a "comprehensive document" reporting on the environmental impacts of a project). The EIS must contain all information relevant to the environmental impacts of the Jordan Cove Project so both FERC and the public are fully aware of the Project's potential impacts. *See Calif. v. Block*, 690 F.2d 753, 776 (9th Cir. 1982) (quoting *Trout Unlimited, Inc. v. Morton*, 509 F.2d 1276, 1282 (9th Cir. 1974)) (an EIS should "provide the public with

information on the environmental impact of a proposed project as well as encourage public participation in the development of that information”).

The foundational premise of NEPA is that the EIS contain all relevant potential environmental impacts *pre-decision* so that the agency and the public can fully understand those impacts in deciding whether the Project should move forward. *See* 40 C.F.R. § 1500.2(b) (EIS “shall be supported by evidence that agencies have made the necessary environmental analyses”). Based on this premise, FERC and the public can *only* make an informed decision on the Project if the EIS discloses all of the relevant information within the EIS document itself.

V. INFORMATIONAL DEFICIENCIES REQUIRE FERC PREPARE A SUPPLEMENTAL EIS INCLUDING ALL STUDIES, PLANS, ETC., REFERENCED IN, BUT MISSING FROM THE FEIS

In certain circumstances, an agency may be able to remedy informational deficiencies contained in the EIS by preparing a supplemental EIS (SEIS). A SEIS is required when “[t]here are significant new circumstances or information relevant to the environmental concerns and bearing on the proposal action or its impacts.” 40 C.F.R. § 1502.9(c)(1)(ii). Specifically, FERC must prepare a SEIS to account for all the new information that will be produced by the additional environmental studies required by the FEIS. An agency “*shall* prepare [an SEIS] if . . . [t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.” 40 C.F.R. § 1502.9(c)(1)(ii) (emphasis added).

When an agency “knew or should have known that it needed to provide [] information and analysis at the time it prepared the original [EIS],” it must prepare a supplemental EIS to “correct this type of lapse.” *Idaho Sporting Congress v. Alexander*, 222 F.3d 562, 567 (9th Cir. 2000). Supreme Court precedent expressly holds that an SEIS is required if “new information is sufficient to show that the remaining action will ‘affect[t] the quality of the human environment’ in a significant manner or to a *significant extent not already considered* . . .” *Marsh v. Ore. Nat. Res. Council*, 490 U.S. 360, 374 (1989) (emphasis added).

FERC makes many recommendations of further planning, studies, and consultation but fails to flatly require these measures as a condition of any proposed license. The FEIS is incomplete and inadequate if proposed mitigation measures are inadequately described. More importantly, FERC is deferring until later many analyses and considerations which should be

evaluated in the FEIS, such as proposals for avoiding fish entrainment and evaluation of sediment disposal plans, without providing clarity as to how these later processes will be incorporated into the NEPA process, how the public will be allowed to participate, or how undetermined mitigation measures would be enforced.

Even FERC recognizes the deficiencies in its original analysis, but it attempts to remedy these deficiencies by deferring analysis until later. For instance, FERC has asked Jordan Cove to clarify its air emissions, including updating information regarding criteria pollutants, hazardous pollutants, and greenhouse gas emissions. FEIS 5-33. Through the EIS requirement, NEPA mandates that an agency address the impacts of the proposed project and the effects of past, present and reasonably foreseeable future projects in a single environmental document with high quality information and data. *Thomas v. Peterson*, 753 F.2d 754 (9th Cir. 1984); 40 C.F.R. § 1508.7. The public should be able to review the overall impact of the project in the DEIS and FEIS, but FERC's approach undercuts the public's ability to understand and meaningfully comment on the environmental impacts of the project. The following FEIS excerpt illustrates the complete inadequacy of the FEIS:

Jordan Cove shall revise its worst-case emissions estimates (both hourly and annual) for criteria pollutants, hazardous air pollutants, and GHG in accordance with the FERC staff's March 23, 2009 data request and file these calculations with the Secretary, for review and approval of the Director of OEP, *prior to construction of the LNG terminal*. The revised estimates shall incorporate the maximum worst case number of trips, to reflect the facility's maximum sendout design capacity of 1.0 Bscfd of natural gas (EIS section 4.11).

FEIS 5-33 (emphasis added). The public cannot possibly provide meaningful comment on the project when key issues, such as the overall air emissions of the project, are deferred for later analysis. Furthermore, FERC excludes emissions from Coast Guard vessels from consideration of air impacts citing security concerns, without even attempting to obtain an estimate of those emissions. While the underlying documents providing the details of these emissions may be inappropriate for public disclosure, this does not allow FERC to pretend that these vessels do not emit air pollutants.

Moreover, Jordan Cove itself has pointed to parts of the FEIS that are inaccurate and which have caused significant confusion, not only amongst public agencies commenting on the proposal, but also amongst federal agencies and the project proponents:

As NOAA notes, there is some confusion relating to the issue of fish screening.

JCEP never proposed to store the filtered water on land (so that the FEIS at page 5-12, paragraph 2, is incorrect to the extent that it states that JCEP had proposed “to transfer water to land-based storage containers”), nor has JCEP ever proposed (nor has NOAA requested) to place filters directly on vessels.

Jordan Cove Response to the FEIS Comments of the National Oceanic and Atmospheric Association (NOAA), submitted June 11, 2009. Jordan Cove goes on to assert all concerns will be satisfied by a long-term study they will fund, an arrangement which calls into question the neutrality, veracity and reliability of the study:

JCEP’s proposed technique would use land based pumps to pull water across screens and then deliver the filtered water back to the vessel water intakes. JCEP has contracted with the Oregon Institute for Marine Biology to begin conducting a multi-year survey of Coos Bay in the vicinity of the proposed terminal to ascertain the level of habitation of ESA species and to assess the impact that ballast and cooling water withdrawals would have on these species and their food sources. Following identification of the level of impacts that water withdrawals will have on ESA [sic], a determination can be made as to whether the JCEP proposed filtered water technique is an appropriate mitigation technique. NOAA’s concerns on this issue will continue to be addressed via implementation of mitigation measure number 21, which requires that JCEP continue its studies and to consult with NOAA and the other interested agencies regarding the need for compensatory mitigation.

Id. However, by the time any such study is completed, FERC will have long since made its public benefit and conditional licensing determination, and if the project is approved, irreparable harm will have been caused to the environment and to area landowners. Such a result is a blatant violation of the substance and purpose of NEPA.

Additionally, the proposed non-screening measures are much less likely to succeed than fish screens. According to NMFS, “NMFS maintains that screening ballast and engine cooling water is the most effective method to minimize adverse effects to the aquatic resources.” NMFS June 8, 2009 comments at 2. FERC fails to provide completed analysis of how fish entrainment and impingement mitigation measures will succeed, and it simultaneously fails to provide an analysis of impacts to fish if mitigation plans are unsuccessful. FERC clearly violates NEPA by failing to provide these details in the FEIS, despite multiple DEIS comments on this issue.

The recommendations for mitigation included throughout the FEIS are often vague and FERC provides little or no evidence that they will be effective. For instance, FERC is deferring key environmental issues for consideration in permit processes (such as the Biological Assessment (BA) and designated state issuance of federal Clean Water Act (CWA), 33 U.S.C. §

1251 *et seq.*, National Pollutant Discharge Elimination System (NPDES) (§301), Dredge and Fill (§404), and Water Quality Certification (§401) permits) subsequent to the NEPA process, depriving the public of an opportunity to comment on these issues before FERC makes its decision on a conditional license. Other measures are being left for the Director of the Office of Energy Projects (OEP) to determine, and these are issues over which the public will have little or no input or control.

The FEIS acknowledges that completion of key studies may result in the project – design and implementation of key mitigation measures, stream crossing methods, even the pipeline route itself – being altered to achieve compliance with federal, state and local requirements. FEIS 5-27. The FEIS is premature and incomplete without having at least attempted to complete an analysis of many issues pertaining to erosion, water quality, stormwater, landowner impacts, well contamination, loss of wildlife habitat, impacts to fish and fisheries, and public safety. Our DEIS comments contain a detailed discussion of missing elements in FERC’s analysis. We hereby incorporate those comments in their entirety. The following are just some examples of the plans, studies, mitigation measures, and project elements absent from the DEIS and FEIS, that must be addressed in a SEIS:

- **EMERGENCY RESPONSE**: The FEIS was issued prior to the development of the Emergency Response Plan, LNG Vessel Transit Management Plan, and Cost Sharing Plan:

In accordance with Section 3A of the EPAAct05, we are *recommending* that Jordan Cove develop an ERP that includes a Cost-Sharing Plan. The Cost-Sharing Plan must contain a description of any direct cost reimbursements Jordan Cove agrees to provide to any state and local agencies with responsibility for security and safety at the LNG terminal and near vessels that serve the facility. This ERP, which would have to be approved prior to initial site preparation at the facility site, would address concerns of local communities about the costs related to security/emergency management of the proposed LNG facility and LNG marine traffic.

FEIS at 5-24 (emphasis added). The *recommendation* to complete the final Cost Sharing Plan is essential to the development of emergency response and vessel management plans, yet it does not provide state and local agencies or the public with any enforceable conditions. A similar situation has led to a “breakdown” of the development of key emergency response conditions at the Bradwood facility, and may undermine the State of

Oregon's ability to meet its public safety and emergency response needs with Jordan Cove, as well. *See* State of Oregon FEIS Comments at 4.

- **STATE ISSUANCE OF PERMITS:** FERC cannot issue a license without the State of Oregon first determining that the project complies with the CWA and Coastal Zone Management Act (CZMA), 16 U.S.C. § 1451 *et seq.*, but FERC is altering the project mid-stream without including impacts of project changes in its analysis. Similarly, states cannot review the impacts of a project that is constantly in flux, and erosion, spill prevention, and stormwater issues will obviously be important considerations for whether the project complies with the CWA and CZMA. In the Bradwood case, FERC clearly overstepped its authority in issuing a license prior to the state certifying the project's compliance with these laws. FERC should avoid the same mistake in the Jordan Cove project, and should include information that will likely be required in state permitting processes that are likely to be more protective of resources than the FERC process. It is illegal for FERC to issue any permit – including a conditional permit – without first a determination from the State of Oregon that the project complies with the CWA, Clean Air Act (CAA), 42 U.S.C. § 7401 *et seq.*, and CZMA.
- **LACK OF ADEQUATE MITIGATION:** Mitigation Plans for impacts to eelgrass habitat, fish, wildlife and affected landowners are not complete. The FEIS states, “Jordan Cove shall continue to consult with the COE, NMFS, ODSL [Oregon Department of State Lands], and ODFW, and other appropriate resource agencies to develop a final compensatory mitigation plan for permanent impacts to eelgrass.” FEIS at 5-33. This is one of many examples throughout the FEIS where FERC assumes that mitigation will be adequate, but defers development of mitigation strategies for later consideration. Additionally, FERC's mitigation plans for old-growth habitat are inadequate. FERC proposes to offset damage to old-growth by re-classifying forestlands from “matrix” to “LSR.” This is proven to be inadequate, based on the ease with which federal agencies ignore protective designations and clearcut forest for projects such as the Pacific Connector. Oregon Department of Fish and Wildlife finds these mitigation proposals inadequate, and recommends, “in accordance with the department's Fish and Wildlife Habitat Mitigation Policy and administrative rules, ODFW recommends that JCPC either avoid the impacts to the identified Category I habitats through alternatives or that the project not be authorized.” State of Oregon Comments at 34.

NOAA also highlights deficiencies regarding mitigation measures in the FEIS:

Long term losses of large wood from the pipeline corridor where it crosses streams is not correctly analyzed or mitigated. The FEIS states that the desired future condition of late successional riparian forest stands is 40 trees per acre, and presumes this level of stocking is adequate to protect the beneficial influences on salmonid habitat. NMFS knows of no literature that supports this claim. Reference stand characteristics for late successional forests have significantly higher stocking rates. Furthermore, the number of snags and downed logs has to be taken into consideration when analyzing the effects of forest removal. A stocking rate of 40 trees per acre would never result in density dependent mortality of trees, starving the stream of large wood for up to 200 years...

And, “the mitigation plans for eelgrass, sub-tidal lands, inter-tidal lands and stream crossings are not complete. Until they are complete, analysis in the FEIS is incomplete and premature.” NOAA June 8 FEIS comments at 2.

The measures outlined in sections 4.6-40 and Appendix L3 are not adequate to avoid and minimize impacts to old-growth. Proposing further silvicultural activities, and proposing to buy old-growth habitat, does nothing to restore lost habitat in the timeframe and location in which it is lost. In short, the proposed mitigation measures are not demonstrably “in time”, “in kind”, and “in place.” Lacking these characteristics, the proposed mitigation measures will not be successful in replacing lost ecosystem function from the areas that will be negatively impacted by the pipeline. Additionally, the proposed mitigation fund is vague and inadequate.

Mitigation plans for wildlife are similarly incomplete. The FEIS states “unmitigated impacts have been identified in accordance with ODFW and FWS criteria and include impacts that cannot be mitigated in-proximity and/or in-kind, and impacts to high value habitat that is unique and irreplaceable.” FEIS at 4.6-120. FERC fails to provide analysis of how proposed mitigation measures maximally offset the damage of pipeline construction and operation. According to the State of Oregon’s comments: “ODFW believes that the current Compensatory Mitigation Plan (CMP or Habitat Mitigation Plan) is inadequate in that it does not address habitat impacts occurring on non-federal lands that are not related to an ESA-listed species.” We agree with this assessment and note again that NOAA Fisheries and USFWS are similarly concerned about lack of adequate mitigation.

Additionally, the FEIS fails to provide a description of all proposed actions, including necessary road construction and improvement, and areas where the pipeline has been rerouted. Hence, the proposed mitigation plans are not specific to the impacts of the project as currently proposed. The FEIS should be withdrawn and amended to include more complete project information.

- **SAFETY & EMERGENCY RESPONSE:** The FEIS fails to provide adequate information regarding safety and emergency response, including analysis of how complete emergency manuals will be produced, implemented, and rendered effective. The FEIS repeatedly states that safety issues can be effectively mitigated, yet complete emergency and safety measures are not yet in place. The State of Oregon notes in its comments that “the FEIS ignores Oregon safety and security concerns, an omission that opens the door for LNG developers in Oregon to submit a final Emergency Response Plan and receive FERC approval without the necessary equipment, systems, and personnel resources to implement the plan, putting the lives of Oregonians at risk.” State of Oregon FEIS comments at 3. FERC should have coordinated more fully with the State of Oregon and included this complete consultation and resulting safety and security requirements as a condition of the FEIS. FERC puts the cart before the horse by concluding that safety issues can be adequately dealt with before producing a plan to put the necessary resources in place.
- **PUBLIC SAFETY RISKS:** Beyond the issue of having completed adequate public safety information, the FEIS fails to adequately address the comments of Jody McCaffree, the State of Oregon, and particularly Dr. Jerry Havens regarding the potential safety hazards of the Jordan Cove LNG terminal and its associated tanker traffic. We submitted detailed comments regarding this issue in our DEIS comments, and we incorporate by reference those comments, and the comments of Dr. Havens, here. FERC dismissed the concerns of Dr. Havens without providing an adequate, robust analysis of thermal hazards risks. FERC’s analysis of thermal hazard risks is inadequate and fails to evaluate how fire hazards at the LNG terminal would affect adjacent North Spit properties and the Coos shipping channel. Hence, the accompanying analysis of how these risks would be mitigated is based on false premises. FERC should re-calculate thermal hazards from the LNG terminal and tanker, and provide analysis of these risks (including the potential for cascading failures) in a SEIS.

- **TSUNAMI RISKS:** The FEIS continues to lack adequate independent analysis of tsunami risks. We discuss these issues in further detail in our comments to the DEIS, and we hereby incorporate those comments by reference. Additionally, the FEIS accepts Jordan Cove's assertions regarding tsunami hazards without independent analysis. We concur with and reiterate comments from the State of Oregon that these analyses warrant independent review. No such independent analysis occurred prior to issuance of the FEIS. Such an analysis could well warrant issuance of an SEIS. Additionally, the FERC FEIS lacks analysis of how the site will be evacuated in a tsunami event. FERC should have included in the FEIS how preparedness for a geologic event (tsunami, earthquake, etc.) would be incorporated into emergency response planning. During major events, emergency response resources will already be strained, and the FEIS is unclear as to how the Jordan Cove project will be integrated into future planning.
- **LANDSLIDE HAZARD ANALYSIS:** The FEIS fails to fully assess landslide hazards, and the FEIS should be re-issued with characterization of potential landslide hazards through other means in areas where LiDAR and aerial photograph coverage is not available, as recommended by FERC on FEIS page 5-2. Without this information, the conclusions reached by the FEIS regarding the potential for mass wasting and the effectiveness of erosion control measures are inadequate. The State of Oregon comments that many roads and watersheds may be negatively impacted by inadequate avoidance of landslide risks. *See* State of Oregon FEIS comments at 9-10. Additionally, FERC has acknowledged that landslides are inadequately mapped in the present analysis, with significant data gaps for areas where LiDAR data is not available. Particularly for the crossing of the Coast Range between Coos Bay and Roseburg, landslides are likely to be a major impact on natural resources, regardless of implementation of the ECRP. The FEIS fails to provide independent evaluation of the landslide risks on the route, despite this having been requested by Oregon Dept. of Geology (DOGAMI). *See* State of Oregon comments Attachment 1 at 10. Without adequate characterization of the risks, FERC is likely underestimating the mitigation measures needed to deal with those risks and thus the overall impacts of the project.
- **BALLAST, COOLING WATER & SALMONID IMPACTS:** The FEIS does not include complete information on ballast and cooling water intake and discharge. According to the FEIS response to DEIS comments by ODFW:

Sections 4.3.2.4 and 4.5.2 of the final EIS have been revised to include additional discussion and revised estimates of ballast and cooling water use by LNG carriers while at the LNG terminal. Since publication of the draft EIS, Jordan Cove has modified its proposed water intake screening design, and no longer proposes to use an external screening system as described in the draft EIS. See revised sections 4.3.2.4 and 4.5.2 of the final EIS.

FEIS response to comment SA2-33. Yet, the FEIS fails to actually provide clear-cut analysis of how new proposed systems would prevent entrainment and impingement of salmonids. Instead, the FEIS provides only perfunctory analysis and encourages post-installation monitoring, which is completely inadequate for preventing the impacts themselves. The FEIS states:

Jordan Cove proposed a system capable of delivering filtered bay water to the LNG carriers for engine cooling water and ballast through high-pressure pre-screen water jets. Use of a prescreened water intake to transfer water to land-based storage containers, and then transfer back, through high-pressure jets to the ship at berth would limit the entrainment and impingement of juvenile fish and other organisms. However, *intakes on LNG carriers would not be directly screened and this proposed system has not been demonstrated to be effective at preventing entrainment of aquatic organisms*. Jordan Cove has stated it would conduct pre-and post construction monitoring to determine the number and effects of this system on Coos Bay aquatic biota. We are *recommending* that Jordan Cove continue to consult with NMFS, ODFW, FWS, and the Coast Guard on the details of its sampling plan, interpretation of results, and water supply design to protect aquatic resources and, if required, to develop a compensatory mitigation plan for affected resources.

FEIS at 5-12 (emphasis added).

FERC should be evaluating the project as if ballast and cooling water intakes – up to 75 million gallons of water withdrawals – would occur in an unscreened fashion. FERC’s analysis relies heavily on unproven, untested mitigation measures that have not been properly vetted and may not even ultimately be used. FERC admits that “this proposed system has not been demonstrated to be effective.” *Id.* Furthermore, if the Bradwood permitting process is any guide, it is possible that the U.S. Coast Guard and key resource agencies will contradict one another on their approach to this problem. *See* Columbia Riverkeeper letter to FERC, June 8, 2009 (attached).

The public cannot review the impacts of a project whose fundamental design elements are yet undeveloped and unproven, and it is clear from the portion of the FEIS

quoted above that neither FERC, U.S. Coast Guard, or the applicant has a full understanding of impacts from entrainment and impingement of threatened and endangered juvenile salmonids. It is simply unreasonable to defer these issues until after issuance of the FEIS. NOAA Fisheries has commented, regarding the Bradwood project, that major changes to fish screening proposals would warrant a SEIS. *See* U.S. Coast Guard May 1, 2009 letter to FERC; NOAA Fisheries February 27, 2009 letter to FERC regarding Bradwood LNG project. It is clear from the FEIS that FERC and the applicant have not come close to completing their investigation of this issue. Until they do so, the FEIS should be considered incomplete and the public should be given ample opportunity to comment. Worse yet, completion of the proposed evaluation of impacts to juvenile salmon is proposed to occur “prior to commissioning of the LNG terminal.” FEIS section 4.5, 5-33. FERC should not permit land condemnation, timber and land clearing, or construction activities to occur until the full scope of impacts to Endangered Species Act (ESA), 16 U.S.C. §1531 *et seq.* listed fish species are known – impacts that could render the entire project in violation of the ESA and other federal and state laws.

As FERC has admitted, the proposed screening measures are completely unproven. The FEIS provides no information that proves the reliability of this system in preventing fish entrainment and impingement. The FEIS should analyze impacts to aquatic life – particularly juvenile salmon – as if the screening were largely ineffective. It is unreasonable for FERC to assume that fish will not be harmed by the massive water withdrawals for LNG tankers. Not only has FERC underestimated the amount of water withdrawal, FERC has also failed to provide an adequate analysis of proposed mitigation measures. What is the fish presence? What is the rate of uptake? What is the mortality for fish present in the vicinity of an LNG vessel in the absence of effective fish screen measures, and what is the mortality rate of the screened system if it is fully effective? What is the cumulative impact of the water withdrawals, the resuspension of sediment (turbidity, D.O. and T.S.S.) caused by LNG tankers and associated vessel traffic, and dredging activities? FERC should assume that fish screening measures will be ineffective, and evaluate the project accordingly for its impacts to salmon – including federally listed Coho salmon.

The State of Oregon commented to FERC that fish screens will be necessary, and stated that “protection of the environment should include requiring fish screens on all water intakes

located in waters with fish present. Fish screening should be required for withdrawals of water for fire control, hydrostatic testing, stream crossing, dust control, ballast and cooling intakes, and any other water use.” State of Oregon FEIS comments at 44. NOAA Fisheries has provided similar comments, and yet FERC has provided no reasonable plan by which fish screening will occur in all of these instances, particularly for ballast and cooling water intakes.

We discuss ballast and cooling water issues in more detail in our DEIS comments, and we incorporate those comments by reference in their entirety.

- **COOLING WATER DISCHARGES:** FERC continues to fail to correctly analyze the impacts of cooling water discharges. FERC asserts that cooling discharges will be much less significant than FERC’s own conclusions for the Bradwood LNG terminal, though the same technology is employed. For example, FERC concludes:

The discharged cooling water, based on the range of values presented above, could range from about 30 to 235 thousand m³ while at the dock. The estimated temperature of the discharge water is about 3 °C (5.4 °F) warmer within 75 feet of the discharge point (FERC 2008) after passing through the ship’s cooling system during an approximate 13-hour period.

FEIS at 4.3-27. By contrast, the Bradwood LNG FEIS asserts “engine cooling water discharged to the Columbia River could initially be 19.4 °F higher than ambient water temperatures.” NorthernStar FEIS at 4-164. FERC gives no clear justification for the massive discrepancy between the assumptions in two similar terminals – using similar equipment – in environmental analyses produced in the same year by FERC. Both terminals are limited to the same size range of ships, 145,000 cubic meters, and would presumably employ tankers with similar cooling water needs. Yet the FERC’s analysis regarding impacts from ship operations varies widely, and seemingly inexplicably.

The FEIS includes a mention of “cold-ironing,” but the overall air and water impacts of the project remain unclear. *See* comments of Jody McCaffree, March 31, 2009. FERC should have analyzed the full impact of vessel operations in the absence of cold ironing, and assuming the maximum cooling water thermal discharge and air discharge. Having failed to do so, FERC did not fulfill its obligation to provide the public with a reasonable assessment of the impacts of the project as NEPA requires. FERC’s calculations about the potential

limited warming of the slip dock area and the negligible warming of Coos Bay, are arbitrary given the lack of adequate information and the large discrepancies between estimates of thermal discharges from LNG tankers.

- **SUBMERGED COMBUSTION VAPORIZATION**: As we noted in our DEIS comments, the Submerged Combustion Vaporization (SCV) water discharge estimates for Jordan Cove differ from the Bradwood FEIS. Similar to the cooling water issues discussed supra, the Jordan Cove FEIS indicates a discharge of 20gpm per SCV, for a total of 100 gpm of discharge. The Bradwood FEIS assumes a total of 160 gpm, which translates to 26.7 gpm for each of the 6 SCVs. Bradwood LNG FEIS at 4-168. The Jordan Cove FEIS fails to address why assumptions between two similar projects differ so significantly, and the FEIS makes assumptions of fewer discharges from SCV operations that are not reliable and contradict other published estimates. FERC should require further analysis of SCV discharge and its compliance with Oregon water quality standards. The State of Oregon has also commented that analyses of SCV discharges are inadequate.

FERC's response to FLOW's DEIS comment regarding the SCV discharge discrepancy is as follows: "water discharge during operation of the SCVs for the Bradwood Landing LNG Project and Jordan Cove LNG Project were based on design information provided by the applicants. The information is included within their engineering design reports filed with their applications as part of Resource Report 13." FEIS response to comment CO11-37. FERC fails to provide an independent assessment of which estimates are reliable – those in the Jordan Cove FEIS or the Bradwood FEIS. FERC's cursory response to our comment provides no analysis of how two similar projects, employing similar technology, could have such varying SCV discharges, water use and impacts from ballast and cooling water. FERC's analysis of SCV discharges is inadequate, and further analysis should be undertaken in a SEIS.

- **DREDGING IMPACTS**: The FEIS lacks analysis of impacts from dredging, both in the construction phase and for ongoing maintenance dredging. The FEIS lacks a complete Maintenance Dredging Plan – including the type and location of material to be disposed. According to the FEIS: "the plan shall be specific, consider the needs and characteristics of Site F defined by the COE and EPA, address the types and volumes of materials to be deposited, methods of disposal, frequency, and location, and include any necessary

The FEIS states on page 4.3-23 that, "the COE has indicated to the Port that [site F] has the capacity to take in the operational maintenance dredging of the LNG terminal access channel and slip, which over 20 years would be a total of about 3.5 mcy of material..." We appreciate the inclusion of this information, but note that we have not been provided an analysis by the Corps or the applicant supporting the assertion that the capacity of Site F would be unaffected by the addition of 3.5 racy of material over the next 20 years. In order for EPA to concur with the issuance of a Section 103 permit, this will need to be clearly demonstrated.

EPA FEIS comments at 2, June 9, 2009. EPA also notes the absence of a Maintenance Dredging Plan, and the lack of a requirement that the still missing plan be consistent with site management and monitoring plan (SMMP) and be approved as part of the yet to be undertaken Section 103 permit process. Without this and other missing information, the FEIS is incomplete. It lacks basic information necessary for expert federal and state agencies to make required decisions about the proposed project and deprives the public of information necessary to make fully informed comments.

- The FEIS attempts to minimize the impact of resuspension of bottom sediments into the water column and the resultant turbidity. The FEIS states: "resuspension of bottom sediments and resulting increases in turbidity are considered temporary short-term impacts. Use of shallow draft tugs to assist LNG carriers throughout the mooring and departure operations may result in some resuspension of bottom sediments and increase turbidity over the short term until the bottom sediments become stabilized." FEIS at 4.3.2.3. This discounting of the effects of turbidity is entirely inappropriate. Jordan Cove estimates that at least 80 LNG vessels will dock at the terminal every year, and that each will take at least 24 hours to unload its cargo. Thus, on at least 160 days per year, more than 1 in every 3 days, the Bay will be impacted by turbidity caused by the LNG tankers themselves and the tugs associated with their movement. The FEIS fails entirely to give any estimate as to the length

Moreover, the analysis completely ignores any turbidity caused by the Coast Guard escort/security vessels, once again impermissibly and illogically discounting the impacts of the project. Additionally, and very importantly considering that Jordan Cove has yet to obtain any of the requisite Clean Water Act permits from the State of Oregon, a state authorized by the Environmental Protection Agency to issue such permits, Jordan Cove's complete failure to analyze turbidity impacts on Coos Bay and the species that inhabit the Bay is a serious problem for the project in terms of obtaining CWA Section 401 water quality certification. The analysis is wholly inadequate.

- **OYSTER IMPACTS:** The FEIS does not fully disclose impacts to oysters in Coos Bay. Multiple comments raised this issue throughout the scoping and DEIS process, and yet the FEIS states:

Suspended sediment may adversely affect filter feeding commercially and recreationally important clams and oysters near the pipeline route in the bay where most of the sediment would be suspended. Adverse effects would be restricted to the short-term period of active construction as sedimentation and erosion control plans would attempt to limit elevated turbidity and suspended sediment near known rearing areas.

FEIS at 4.5-94. The FEIS goes on to generally describe impacts to oyster beds:

While Pacific Connector has sited the pipeline route to be outside of all known oyster beds, impact to commercial oyster aquaculture and native Olympic oyster beds would depend on construction location relative to unknown oyster beds, the time of year of construction relative to oyster seeding, duration of construction, substrate materials mobilized during construction, and interaction of those materials with tides and currents in the bay.

FEIS at 4.5-93.

The FEIS does not provide a clear assessment of how many acres of oyster beds may be affected, and whether these beds are likely to be commercially and recreationally viable during construction. The FEIS generally concludes that the beds will recover after construction, but provides little basis for this conclusion. In the concluding section, the FEIS recommends further consultation with oyster growers in order to avoid impacts. The State of

Oregon has commented that the applicant should be consulting both with oyster growers and with the State of Oregon Department of State Lands, which administers the use of the waters of the State of Oregon. Because oyster beds are operated on lands leased to growers by the State of Oregon, the FEIS should acknowledge the need for Jordan Cove to meet DSL standards for the use of submerged lands and the disruption of existing uses in these areas.

The applicant has had years to develop measures to mitigate impacts to recreationally and commercially important oysters in Coos Bay, yet, the FEIS shows this process has not occurred. The FEIS is required to rest its conclusions on a reasonable analysis of potential mitigation measures, and these are missing from the document. On FEIS page 5-34, FERC recommends that, prior to construction, “Pacific Connector shall continue to consult with the Port and potentially affected oyster growers regarding measures that would be implemented during pipeline installation in Coos Bay to minimize impacts on Port activities and oyster raising.” This recommendation provides no enforceable protection for oyster growers and recreational oyster gatherers, and fails to provide the public with a clear description of potential mitigation measures. Furthermore, the FEIS does not address potential impacts to oyster beds caused by the re-suspension of sediments that occurs each time an LNG vessel docks or leaves the LNG terminal, instead dismissing any concern about impacts by calling this activity, which would occur at least 160 days per year (see discussion supra), insignificant without providing any analysis justifying such a conclusion.

- **ESA LISTED & PROPOSED FOR LISTING SPECIES IMPACTS:** The FEIS fails to adequately assess impacts to species proposed for listing under the Endangered Species Act and new proposed critical habitat for already listed species. The Northern American Green Sturgeon is proposed for listing by NOAA Fisheries, and the analysis in the FEIS is cursory and inadequate. 74 Fed. Reg. 23822, May 21, 2009 (attached). Section 4.6 of the FEIS addresses impacts to green sturgeon, but falsely and arbitrarily concludes that impacts will be only short-term. The FEIS inaccurately concludes that the project is not likely to adversely affect green sturgeon because “effects would be short-term food supply, the magnitude of effects would be small or sturgeon would not be present during most of the periods of trenching and the size of area affected is relatively small.” FEIS at 4.6-63. However, the underpinning analysis of why the effects would be limited is incomplete. For instance, FERC draws conclusions about the impacts of dredging, dredge disposal, and turbidity being

limited. Yet, as discussed supra, multiple agencies have noted that FERC's proposals and impacts analysis for dredging, dredge disposal, and turbidity are inadequate.

The FEIS is required to rest its analysis on a reasonable analysis of potential mitigation measures, and these are missing from the document for green sturgeon and other potentially listed species. For instance, NOAA and other agencies have noted that mitigation plans for eelgrass habitat are incomplete. According to NMFS, "the mitigation plans for eelgrass, sub-tidal lands, inter-tidal lands and stream crossings are not complete. Until they are complete, analysis in the FEIS is incomplete and premature." NOAA June 8 FEIS comment at 2. Eelgrass is important rearing habitat for green sturgeon as well as other species, but FERC concludes that sturgeon will be unaffected because "after pipeline construction, eel-grass areas affected by construction would be replanted to increase recovery of this important habitat for rearing fish." FEIS at 4.6-63. FERC's conclusions are premature and its analysis is cursory, given the incomplete nature of its mitigation plans for key fish habitats. By relying on incomplete and inadequate mitigation measures, FERC falsely concludes that mitigation measures for fish proposed in the BA and FEIS will be adequate.

Additionally, according to NOAA June 8 comment, "NMFS proposed to list the southern distinct population segment of eulachon (*Thaleichthys pacificus*) as a threatened species under the Endangered Species Act (74 Fed. Reg. 10857, March 13, 2009). This species occurs in Coos Bay and the Pacific Ocean and will be affected by the proposed project. The environmental impacts to this species need to be analyzed in the FEIS." NMFS June 8 FEIS comment at 2. Clearly, FERC has failed to provide a complete analysis of impacts to species that are proposed for listing – including eulachon and green sturgeon. Furthermore, there is a pending lawsuit regarding expansion of leatherback turtle designated critical habitat which would affect shipping routes off the Oregon coast. FERC must complete its analysis of impacts to species proposed for listing in a SEIS.

- **AIR POLLUTION & CLIMATE CHANGE IMPACTS:** Jordan Cove has failed to provide adequate information regarding the air pollution impacts of the proposed project.

According to FERC:

Jordan Cove *should* revise its worst-case emissions estimates (both hourly and annual) for criteria pollutants, hazardous air pollutants, and GHG in accordance with the FERC staff's March 23, 2009 data request and file

these calculations with the Secretary for review and approval of the Director of OEP, prior to construction of the LNG terminal. The revised estimates should incorporate the maximum worst case number of trips, to reflect the facility's maximum sendout design capacity of 1.0 Bscfd of natural gas.

FEIS at 5-33. This information should have been included in the FEIS so that the public and FERC can adequately understand, analyze and comment on the impacts. The information requested, but notably not required by FERC, is significant and affects the impact of the project to a degree requiring issuance of a SEIS.

PG&E will be a major recipient of the LNG from Jordan Cove. Should this project be built, it will increase PG&E's overall greenhouse gas emissions by up to 1.5 million tons per year since PG&E buys very little coal power, leaving domestic natural gas as PG&E's most carbon intensive fuel. According to several studies, including research by Carnegie Mellon University, the lifecycle "add-on" of LNG is up to 25% greater than that of piped domestic natural gas. By comparison, the PG&E "Climate Smart" program has offset 257,000 tons of greenhouse gases since it began in 2007, or about 17% of what the Pacific Connector would add into PG&E's current emissions portfolio. This would be a serious setback to PG&E's efforts to reduce greenhouse gas emissions. FERC should evaluate the impact of the Jordan Cove/Pacific Connector project on meeting regional greenhouse gas emission goals.

The FEIS should include complete information regarding dispersion modeling of air pollutants. FEIS at 4.11-9, 5-34. The FEIS clearly states that air pollution estimates are incomplete and are in need of revision. The public cannot comment on the impacts of the project on human health and the environment without an accurate accounting of vessel emissions, including security vessels.

- **IMPACTS TO STREAMS, RIVERS, & OTHER WATER RESOURCES:** The FEIS does not include complete information regarding impacts from stream crossings, and recommends further study of impacts in several areas. The State of Oregon has commented: "FERC's staff recommends additional studies at stream crossings on Indian Creek, West Fork Trail Creek, and North Fork Little Butte Creek, all of which have high scour potential. ODFW recommends an additional stipulation that these studies be completed and the

Additionally, information regarding these and other stream crossings – including the crossings of the Umpqua and Rogue rivers – should be provided to the public for comment in a supplemental EIS. For instance, the proposed Rogue River crossing lacks an adequate contingency plan for the failure of the HDD crossing. On the South Umpqua River, the Pacific Connector has proposed a dry open cut crossing, yet ODFW and others have repeatedly raised concerns about the inadequacy of this plan and the lack of adequate mitigation measures for this crossing. The State of Oregon notes in its comments that operating equipment in-stream is inappropriate, that all work should be completed in the in-water window, and the fish salvage measures are incomplete. State of Oregon comments at 38-39. The flaws in FERC’s analysis of stream crossings are systemic in the FEIS, as FERC chronically underestimates the disturbance to streams and the cumulative impact to sensitive watersheds of crossing multiple waterbodies.

Moreover, the FEIS fails to justify why specific crossings will be allowed outside of in-water work windows – is this because of conflicts with terrestrial species and nesting seasons? The FEIS should specify why work outside of in-water work windows is necessary, as well as scientifically and legally defensible.

- **IN WATER WORK WINDOWS:** FLOW continues to oppose the construction of the Pacific Connector outside of in-water work windows. Though we and others raised this concern in DEIS comments, the FEIS states: “Pacific Connector proposes to install equipment bridges outside the ODFW recommended in-water construction windows.” FEIS at 2-96. The ECRP is inadequate to prevent impacts to fisheries and other resources during times that are specifically targeted for protection of those resources. Construction of the Pacific Connector will adversely impact fish-bearing streams during times when fish are likely to be present; implementation of the ECRP is too vague and likely will be unsuccessful in preventing harm to listed fish species and water quality of key fish-bearing streams.

Furthermore, FERC’s FEIS does not appear to include a coordinated plan to avoid impacts to a suite of resources, particularly when terrestrial species’ nesting seasons conflict with in-water work windows. According to comments from the State of Oregon, “there is no discussion in the FEIS of conflicting timelines, as requested by ODFW in comments on the

DEIS, i.e., conflicts between seasonal restrictions for bird nesting, winter range habitat, in-water work periods, and T & E species.” State of Oregon FEIS comments at 35. The ODFW goes on to comment that the FEIS “fails to address in-water timing, ODFW Fish Passage Rules, and compliance with ODFW's Fish and Wildlife Habitat Mitigation Policy, all of which ODFW repeatedly mentioned in earlier comments.” State of Oregon FEIS comments at 37.

Without a detailed analysis of how construction will unfold, and which species’ protective windows will be violated, FERC is simply guessing at the impacts to sensitive species, including aquatic species that would be harmed by construction outside of the in-water work window. These issues apply, for instance, to both Umpqua River crossings, where the FEIS does not require that work occur in the in-water work window. FERC’s analysis of impacts to streams and rivers – including the Umpqua River – is inadequate and further analysis should occur in a SEIS. *See* State of Oregon comments at 39-40.

- **RISKS OF HORIZONTAL DIRECTIONAL DRILLING (HDD):** The HDD Contingency Plan and Failure Procedure is inadequate, and the FEIS falsely concludes that the impacts of HDD will be effectively mitigated by implementing these measures. For instance, the Oregon Department of Fish and Wildlife has repeatedly commented that the HDD contingency plan for the Rogue River crossing is inadequate, and that a wet open-cut crossing of the Rogue River is not currently permissible. The ODFW commented, “ODFW does not consider a wet open-cut to be an acceptable alternative due to the impacts to fish, fish habitat, the river, as well as impacts to the sport fishery and the economy of upper river communities. ODFW strongly disagrees with the wet open-cut as an alternative crossing method on the Rogue River.” State of Oregon FEIS comments at 40.

Generally, HDD contingency plans involve cessation of drilling, and potentially relocating the drill at some sites. Mitigation for HDD measures are completely inadequate, and the Williams pipeline company’s (the proposed operator of the Pacific Connector) own data show that HDDs for 36-inch pipelines fail often. *See* FLOW DEIS Comments at 102-103. In its own experience, recent HDDs for this size of pipeline have failed one out of every three attempts. *See* Williams Sept. 2007 Presentation, Williams Sept. 2007 documentation of its HDD Experience (attached to our DEIS comments). The FEIS should give much more analysis to potential fallback measures for failed HDDs, and it does not adequately address

comments on areas – such as the Rogue River crossing – where non-HDD methods may be inappropriate.

- **STREAM CROSSING IMPACTS:** The FEIS lacks adequate information regarding stream crossings. Thirty-four of the waterbodies crossed by the pipeline are water quality limited and prevention and mitigation of impacts of stream crossings is important for determining compliance with the Clean Water Act. *See* 33 U.S.C. § 303(d) (list of water quality limited waterbodies). More importantly, the conclusion that “impacts to these waterbodies should be temporary and of small magnitude” is unfounded because SPCC, SWPPP and ECRP plans are incomplete and inadequate. The FEIS should be supplemented to include stream crossing mitigation plans, and a revised effects analysis that fully accounts for potential damage to streams from pipeline construction. We have already discussed in these and our DEIS comments the lack of complete mitigation measures, the problematic timing of in-water work, and other issues with specific stream crossings (particularly of the Rogue and Umpqua Rivers). We incorporate those comments by reference.

The FEIS should identify all areas where water quality limited streams will be crossed outside of in-water work periods, and should also include analysis of impacts to streams that are currently proposed for HDD crossings but where fall-back measures would require other crossing techniques if HDD attempts fail. These actions are likely to contradict existing beneficial uses and resource protections in place for water quality limited streams. In areas where CWA Total Maximum Daily Loads (TMDLs) are already reached or exceeded, or where TMDLs are yet to be established, work outside of specified in-water work windows represents an added threat to protected uses such as fish, fishing, and fish habitat. This includes the HDD crossing of the Rogue River. *See* DEIS comments of Rogue Riverkeeper, Umpqua Watersheds and Klamath-Siskiyou Wildlands Center.

- **EROSION CONTROL & REVEGETATION:** The Erosion Control and Revegetation Plan (ECRP) is not adequately site-specific to address many areas of potential erosion, particularly those in close proximity to streams and rivers. Submitted on September 4, 2007, the ECRP fails to evaluate strategies for erosion control in areas of the pipeline where the pipeline has been re-routed for at least 10 miles since issuance of the DEIS. The implementation of the plan is inadequately described, and fails to incorporate adequate detail

According to ODEQ, descriptions of measures to be employed in the ECRP are inadequately site-specific, and fail to take into account resource conditions in areas that will be impacted by pipeline construction. For instance, implementation of the ECRP in riparian areas may not comply with the Clean Water Act and may not adequately limit temperature, sediment, and nutrient loading into sensitive waterbodies, some of which are included in the CWA §303(d) list of impaired waterbodies. ODEQ and the Coalition raised the lack of site-specificity in DEIS comments, yet FERC declined to provide adequate detail in the FEIS. According to ODEQ: “baseline measures may not be sufficient. Some streams/water bodies may need or cannot tolerate additional stream loading for heat, bacteria, nutrients/fertilizers, sedimentation etc. and therefore site specific details on impacts are needed for DEQ to evaluate possible impacts.” State of Oregon FEIS comments at 23.

Furthermore, FLOW provided DEIS comments asking FERC to describe how sediment and erosion control measures would be effective in meeting standards for turbidity under the Clean Water Act. The Pacific Connector poses a risk to water quality, not only during construction, but also during years after construction when destabilized slopes and soils are exposed to high rainfall events. Oregon DEQ provided comments questioning FERC’s approach to problems of turbidity and sedimentation, and FERC simply removed mention of the State’s turbidity standards from the FEIS instead of actually addressing this valid and legally significant concern. *See* FEIS response to comment SA2-159. The State of Oregon’s original concerns remain, however – downstream impacts from construction and operation of the Pacific Connector pipeline will impact turbidity and increase sedimentation in streams, which in addition to violating the CWA, may well impermissibly impact threatened and endangered species. The FEIS does not provide adequate analysis of how these problems will be avoided and mitigated.

In summary, we concur with the ODFW that “the Erosion Control and Revegetation Plan (ECRP) does not address or mitigate for all impacts associated with stream crossings under the ODFW Fish and Wildlife Habitat Mitigation Policy nor under Oregon's fish passage laws and rules.” State of Oregon comments at 40. Furthermore, we agree that FERC likely underestimates erosion and sediment control difficulties throughout the pipeline route.

According to ODEQ, the FEIS “does not provide a description of mitigation actions that will be undertaken in response to impacts that are greater than anticipated.” State of Oregon Comments at 24. The ECRP is inadequate, and should be revised to reflect how the project will comply with Oregon’s water quality standards.

- The FEIS does not adequately evaluate the potential for erosion and scour in areas along the pipeline. Conditions pertaining to route variations require future study of the impacts of these alterations to the project, yet the FEIS makes sweeping conclusions about erosion and scour along the pipeline. Lacking complete information on routing of the pipeline, timber removal plans, and necessary road improvements, the FEIS’ conclusions are arbitrary. FERC responded to our request that information for mitigation erosion and sediment control be site-specific:

We do not require that the applicant’s erosion and sediment control plan be site-specific for the purpose of completing our EIS. Pacific Connector’s ECRP applies to all areas of the proposed pipeline, including pipeline reroutes. The ECRP incorporates the FERC staff’s Plan and Procedures, and it has been demonstrated that pipeline projects built following the Plan and Procedures can be constructed and operated with acceptable environmental impacts.

FEIS response to comment CO11-40.

We disagree that the FEIS demonstrates that pipeline projects can be constructed with acceptable environmental impacts. In contrast, recent construction of the Coos County pipeline caused major erosion and sedimentation into streams such as the East Fork of the Coquille River. While this project did not employ FERC’s plans, FERC simply underestimates the difficulty of constructing a pipeline through highly rugged, erosive terrain. Most importantly, the FEIS provides little evidence that the ECRP measures described will lead to “acceptable environmental impacts”, particularly considering the fact that the pipeline route continues to change.

- **STORMWATER POLLUTION PREVENTION:** The FEIS states the Stormwater Pollution Prevention Plan (SWPPP) is not complete, but falsely asserts that it is appropriate to defer development of the SWPPP until a later time, closer to construction. The FEIS states:

Pacific Connector would also prepare and submit a *Stormwater Pollution Prevention Plan* (SWPPP) to authorize stormwater discharge under the ODEQ

General Stormwater Discharge Permit (Permit No. 1200-C). ODEQ has recommended this permit application be submitted six months to one year prior to the start of construction, therefore Pacific Connector has not provided a draft SWPPP.

FEIS at 2-75.

We submitted comments to FERC regarding the inadequacy of deferring key studies and plans until after the FEIS, yet this plan remains absent from the FEIS. We incorporate our DEIS comments in their entirety, and reiterate that the public cannot comment on the impacts of a project for which key project elements – such as the prevention of stormwater pollution – are incomplete and inadequate. Some areas affected by the Pacific Connector pipeline route receive in excess of 80 inches of rain per year, and the absence of a plan to deal with stormwater problems is a glaring omission in the FEIS.

Worse yet, FERC repeatedly draws conclusions about the impacts of the project based on a plan that is not yet complete. The FEIS states: “stormwater runoff from the disturbed portions of the site would be managed in accordance with a site-specific ECRP, which incorporates stormwater pollution prevention.” FEIS at 4.3-21. Simply put, the FEIS cannot base conclusions on the purported effectiveness of mitigation plans that have not yet been written, such as the SWPPP.

- **TIMBER EXTRACTION:** The Coalition commented extensively on the lack of adequate planning regarding timber extraction along the proposed pipeline route. The FEIS includes a draft Timber Extraction Plan that was submitted in April 2009 – weeks prior to the issuance of the FEIS. The public has been provided an inadequate opportunity to review this important element of the proposed action. Furthermore, the Plan is still clearly lacking adequate specificity to address how soils, plant, and water resources will be negatively impacted by timber operations. The plan outlines “available timber extraction” techniques, but fails to clearly describe how and where timber will be removed from public and private lands. Indeed, the FEIS notes the incompleteness of the proposed timber plan:

However, as timber cruises have not been conducted yet, the draft Timber Extraction Plan still requires additional information such as the dollar value of timber, logging system(s) to be used for each harvest segment, yarding locations, the location of landings and decks, etc. Therefore, *we recommend that: Pacific Connector should file a final timber extraction plan with the Secretary prior to pipeline construction.*

FEIS at 4.4-63 (emphasis added). The implementation of key mitigation measures – such as the ECRP and SWPPP – cannot be adequately site-specific until Pacific Connector identifies the project area. The timber removal plans remain incomplete, and the impact analysis provided by FERC in the FEIS is perfunctory and inadequate, including the degree to which the removal plans will avoid bird nesting seasons.

- **IMPACTS OF NGL EXTRACTION & TRANSPORTATION:** The FEIS fails to adequately consider the impacts of NGL extraction at the Jordan Cove facility. The FEIS characterizes as “non-jurisdictional” issues that are directly linked to the development of an NGL extraction facility at the Jordan Cove LNG site:

The transportation of NGL is non-jurisdictional and addressed in section 2.2.1 of this EIS. In the event that the railroad is not operational at the time that the LNG terminal is constructed, Jordan Cove would not recover NGL during its regasification process. If NGL is not recovered at the terminal, there would be no need to transport it to another facility, and the Project would have no impact on any existing or proposed railroads.

FEIS at 4.9-8.

The FEIS fails to provide an analysis of the air impacts of the facility and later emissions of shipping NGL, particularly in a “worst case” scenario where imported LNG is rich in heavier gas impurities. Without a firm requirement that all “hot gas” would be stripped of impurities in an NGL extraction process, the FEIS must consider the air quality impacts of combustion of hotter-burning gas, which we discuss in detail in our DEIS comments. We hereby incorporate those comments by reference.

- **IMPACTS TO WELLS:** The FEIS does not incorporate complete information regarding impacts to public and private wells. The FEIS states that Pacific Connector would attempt to identify any unregistered wells in the vicinity of its proposed pipeline, and relies on future state permitting processes to ensure that water resources will be protected. *See* FEIS response to comment SA2-27. Furthermore, the pre-construction surveys are not timely for the purposes of analyzing impacts to private wells for the purposes of NEPA and provide no enforceable protection for private landowners whose unregistered water sources will be impacted. The Pacific Connector’s Groundwater Supply Monitoring and Mitigation Plan cannot be considered complete, either, until the pipeline route is finalized. The lack of specific information on well and groundwater impacts prevents the public from identifying

Additionally, pipeline construction is likely to impact surface water intakes in many areas along the proposed route that have yet to be identified in the FEIS. The public cannot comment meaningfully on impacts to surface water supplies without more detailed information. The information regarding impacts to surface water sources should be included and analyzed in the FEIS. FERC's approach violates NEPA by deferring consideration of these issues until after the environmental analysis and after the agency's public benefit determination and conditional licensing decision.

- **HYDROSTATIC TESTING IMPACTS:** The FEIS contains incomplete information regarding impacts from hydrostatic testing. We commented on this issue in the DEIS, and FERC failed to respond adequately. Additionally, the State of Oregon has commented that these testing procedures will require state water rights, and that “hydrostatic testing of the pipeline could have large impacts on nesting birds as well as amphibians and reptiles.” State of Oregon comments at 35. NMFS agrees that the analysis of hydrostatic testing water discharges is inadequate: “discussion of hydrostatic test water discharge still does not address concerns with chemicals inside the pipeline and inter-basin transfer of non-native species.” NOAA June 8, 2009 FEIS comment at 2. We continue to be concerned that appropriation of water will disturb surface water resources, discharge of the hydrostatic water will exacerbate negative impacts to habitat, and the process as a whole will harm fish and wildlife. We discuss this issue further in our DEIS comments, and incorporate those comments by reference.
- **NOXIOUS WEEDS:** The Noxious weeds and invasive species plans are unclear and incomplete, relying on general planning from the State of Oregon and others rather than site-specific analysis. The FEIS acknowledges that multiple comments requested additional information regarding impacts from noxious weeds, yet the FEIS' conclusions are made in the absence of even a draft plan for noxious weed prevention. FEIS at 4.4-59. We concur with the State of Oregon that plans for noxious weeds should require “more detail,” and that the recommendation is inadequate because it defers development of plans until sometime prior to construction. This effectively removes the opportunity for meaningful public

- The FEIS lacks adequate information regarding prevention of the spread of Port Orford Cedar Root Disease (POCRD). We commented on this extensively in the DEIS, along with Umpqua Watersheds and Oregon Wild. The spread of POCRD is closely related to the construction of roads and other construction and timber removal activities. We incorporate our previous comments by reference, and note that the FEIS lacks adequate information about the impacts of the spread of POCRD, a likely occurrence given the large amount of construction activity, stream crossings, and soil disturbance proposed in the proposed project.
- **TRANSPORTATION & RISKS TO AVIATION:** The Coalition and others have commented extensively regarding the potential risks to transportation in Coos Bay, particularly disruption of the Coos Bay airport. Conditions 22 and 23 of the FEIS do not provide a clear picture of how potential conflicts will be resolved, and the FEIS does not present an analysis of how negative economic impacts will be avoided in the event that security and safety requirements for the LNG terminal disrupt Coos Bay area transportation.

The State of Oregon noted in its comments on the FEIS:

Condition 22 implies a degree of uncertainty regarding the final traffic management plan and OOOT approval of various transportation related components. These issues should be fully resolved in order to have certainty regarding the project design and environmental effects. ODOT and county transportation requirements should be consistent... Condition 23 implies some degree of uncertainty regarding the FAA Part 77 requirements applicable to the project. *These issues should be fully resolved before FERC approval and not addressed through a broadly worded condition.*

State of Oregon Comments at 29 (emphasis added).

We agree with Oregon DLCD's assessment that the FEIS is too vague to provide a clear picture of potential transportation delays. The Coos Bay/North Bend airport is a critical economic lifeline for the South Coast region, and FERC should provide supplemental analysis of the economic impacts to this resource in light of a completed study of aviation impacts.

- **CULTURAL & HISTORIC RESOURCES:** The FEIS openly states that Pacific Connector and Jordan Cove have not completed surveys or consultations regarding historic

We are *recommending* that Jordan Cove and Pacific Connector not construct or use any of their proposed facilities, including related ancillary areas for staging, storage, temporary work areas, and new or to-be-improved access roads, until we have completed all studies and consultations necessary to complete compliance with the NHPA.

FEIS at 5-21 (emphasis added). Without this information, the FEIS is legally inadequate.

- **IMPACTS TO LANDOWNERS:** The FEIS does not adequately evaluate impacts to landowners. The FEIS must disclose these impacts, but the project continues to be altered in its design and location, preventing private citizens living in affected properties from being able to evaluate the impacts of the project and comment meaningfully. The FEIS states:

We are *recommending* that Pacific Connector provide additional information including the results of a civil survey of the entire pipeline route that identifies all residences and commercial structures within 50 feet of the construction right-of-way, a plan outlining measures that would be implemented to mitigate pipeline construction impacts on domestic water supply systems and septic systems, and additional measures that would be implemented for any residence closer than 25 feet to the construction work area.

FEIS at 5-16 (emphasis added). Again, this unenforceable recommendation does not protect the rights of citizens and violates the purpose and substance of NEPA.

Finally, there are many additional project elements, plans, and mitigation measures that are lacking in the FEIS. The FEIS recommends that these measures be completed sometime in the future, but they should have been included in the FEIS. We detail the other measures that are lacking in our DEIS comments, including a list of elements that are missing from this environmental analysis. We incorporate those comments by reference here.

- Detailed final pipeline alignment sheets
- Description of number, distribution and role of Environmental Inspectors (EI) (one per pipeline spread is likely to be inadequate)
- Location and impacts of extra workspace
- Completion of all required surveys and reports
- Environmental complaint resolution procedure
- Plan for environmental monitoring during construction
- Description of enforcement of conditions

- Breakdown of LNG carrier water uses, including cooling water intake, discharge, and related thermal effects in Coos Bay.
- Mitigation measures necessary to eliminate excessive erosion and fish stranding.
- Fish screen final design
- Complete transportation impact analysis, transportation plan
- Revised vapor cloud dispersion assumptions
- Information on revised routing, where FERC allows adjustments post-FEIS.
- Site-specific hazard analyses, including liquefaction and lateral spreading hazards
- Specific plans for hydrostatic testing, with mitigation
- Management plan for construction in Marbled Murrelet suitable habitat
- Completed avoidance, minimization and mitigation plans for impacts to Northern Spotted owls
- Completed surveys and avoidance, minimization and mitigation plans for impacts on federally listed plant species, including "Plant Contingency Plan."
- Measure to avoid or mitigate use of Old Ferry Road
- Transportation Plan for non-federal lands
- Complete information on construction of access roads
- Visual resource protection design and mitigation measures
- Analysis of location and impacts of non-jurisdictional facilities
- Independent review of tsunami risk analysis
- Compensatory mitigation plan for eelgrass
- Concurrence of compliance with CZMA, CAA, and CWA
- Plan for unanticipated discovery of contaminated soils, sediment, and groundwater
- Logging systems for each harvest, and timber extraction plans
- Danger tree plan, identification of danger tree removal impacts
- Completed Aquatic Species Nuisance Prevention Plan
- Civil survey to identify landowner impacts and impacts to domestic drinking water supplies
- Mitigation for Upper Rock Creek Area of Critical Environmental Concern
- Noise mitigation for Butte Falls Compressor and metering stations, including specific measures if proposed plans fail
- Documentation of easement agreement, and revised thermal exclusion zones as suggested by Dr. Havens
- Emergency Response Plan, including evacuation
- Cost-Sharing Plan

Many additional measures outlined as conditions in FEIS section 5.2 require further study and development of mitigation measures as environmental conditions. The incomplete nature of these elements of the project render FERC's environmental analysis incomplete and inadequate. As described above, many of these issues are significant and fundamental to an accurate

assessment of the direct, indirect, and cumulative impacts of the proposed project, as well as to whether the project can be deemed in the public interest.

VI. THE FEIS FAILS TO ADEQUATELY ADDRESS CONCERNS EXPRESSED BY THE PUBLIC AND FEDERAL AND STATE AGENCIES IN THEIR DEIS COMMENTS

The responses to the DEIS comments submitted by the Coalition are inadequate, fail to address the grave concerns expressed by the Coalition, and neglect to answer many of the questions posed by the Coalition. The Coalition submitted well over one hundred pages of DEIS comments, including dozens of questions directed at FERC. FERC's response to the Coalition's DEIS comments, like its responses to the comments of many federal and state agencies and other organizations and individuals, are inadequate, failing to address significant concerns and raising serious new questions and concerns. Glaring uncertainties, scores of missing studies, reports and plans, and myriad unsupported statements render the FEIS wholly inadequate. Additionally, on several occasions, in response to DEIS comments pointing to missing information, FERC points to sections in the FEIS implying that new analysis is contained therein, where in fact, the text of the DEIS is repeated verbatim, leaving the DEIS comments entirely unaddressed. Here we point to just some of the glaring examples of inadequate responses to our DEIS comments.

FERC responds to our comments regarding the numerous NEPA violations by stating:

We disagree that the draft EIS violates either the letter or intent of the NEPA. The EIS adheres to the CEQ regulations for complying with the NEPA and is a disclosure document that identifies environmental impacts in adequate detail. Federal, state and local permitting needs are identified in section 1.5 of the EIS. If the FERC authorizes the Project, the applicants would apply for additional federal, state, and local permits or approvals. See response to comment SA3-10.

FEIS response to comment CO11-9. As detailed supra, both the DEIS and FEIS fail to meet many of the requirements of NEPA, and FERC stating the opposite is not a response, but is merely argumentative. Our point, made in our DEIS comments, is that without the analysis necessary for the federal, state, and local permits, the environmental analysis in the EIS is incomplete and inadequate. FERC fails to respond to this comment. Moreover, the FEIS fails to address the issue of need, as particularly required by CEQ NEPA regulations (*see* 40 CFR 1500.1(c)) and the subsequent binding case law interpreting the statute and its implementing regulations.

On several occasions, FERC simply states that it disagrees with our comments, without providing refutation of the evidence we provide or justification of its approach. “We disagree. The need for the project is briefly outlined in section 1.3 of the EIS, in accordance with the CEQ regulations for implementing the NEPA (40 CRF 1502.13). See response to comment PM2-14.” FEIS response to comment CO11-18. The response cited, response to comment PM2-14 is just another statement of disagreement without any analysis or case law citation to refute the law we cited:

Need is not an environmental issue that has to be addressed at length in the EIS to justify the project. Applicants propose projects and present their objectives, and the FERC reviews those proposals, including producing an environmental document to satisfy the NEPA. The CEQ regulations for implementing the NEPA (at 40 CFR 1502.13) only require that the EIS “briefly specify the underlying purpose and need to which the agency is responding....” The Commission order will include a finding of need. See response to comment PM2-7. The EIS is not deficient, and the analysis of alternatives in section 3 meets the CEQ requirements for compliance with the NEPA. See response to comments PM1-8 and PM1-22.

FEIS response to comment PM2-14. FERC continually uses these cross references to other comment responses, though those responses provide no additional information or analysis. The response does not refute the case law or other evidence cited by the Coalition indicating that in fact the project’s stated purpose is impermissibly narrow and the environmental analysis in the DEIS and FEIS are legally inadequate.

When we pointed to the inaccuracy of data cited by FERC when it claims that imported LNG will stabilize prices, and provided more recent and more reliable data on domestic and imported LNC pricing, FERC restated its previous conclusion without addressing the new data or explaining why its information is superior:

As stated in section 1.0 of the EIS, the proposed JCE & PCGP Project would diversify available sources of natural gas in the Pacific Northwest, northern Nevada, and northern California, by importing LNG to meet estimated future demand in the region, which would contribute to regional natural gas price stabilization, and mitigate against the projected decline in Canadian imports. These conclusions are base on projections of future market conditions and existing natural gas supply. See response to comment PM2-14.

FEIS response to comment CO11-20. FERC has ignored significant changes in the price of domestic natural gas and the price being paid for foreign LNG. *See* discussion of prices in section I of these comments.

On the issue of the analysis of erosion and sediment impacts, FERC indicates that a generic plan, that does not include site specific analysis of the impacts of pipeline re-routes, is somehow legally and scientifically justifiable:

We do not require that the applicant's erosion and sediment control plan be site-specific for the purpose of completing our EIS. Pacific Connector's ECRP applies to all areas of the proposed pipeline, including pipeline reroutes. The ECRP incorporates the FERC staff's Plan and Procedures, and it has been demonstrated that pipeline projects built following the Plan and Procedures can be constructed and operated with acceptable environmental impacts.

FEIS response to comment CO11-40. FERC's response assumes that the pipeline will be re-routed, a telling acknowledgment of the lack of finality in the planned project. Re-routes will significantly affect the efficacy of FWS consultation unless re-consultation is triggered with all re-routes. Page 5-27 of the EIS, under recommended mitigation #6, assumes Jordan Cove can re-route the pipeline without re-initiating consultation. Without a finalized route and mitigation plan, citizens are deprived of their rights under NEPA to comment on the action, and the decision-making body is not adequately informed of the impacts of the action. Until the pipeline route is finalized, and the impacts of that route are analyzed in a site-specific manner, issuance of the FEIS is premature and NEPA is violated.

In response to the Coalition DEIS comment regarding the adequacy of the timber extraction plan, FERC states that the plans have been filed, implying that these documents are final. *See* FEIS response to comment CO11-41. However, the FEIS on page 5-35 condition #36 states Pacific Connector will file a final timber extraction plan prior to construction. For FERC to rely on the previously filed plans is disingenuous and again deprives the public of an adequate, and legally required opportunity to comment on the proposed plan. FERC's response to our comments is misleading and does not address the concerns we and others expressed. In fact, NOAA highlighted its concern about the still unaddressed impacts of timber extraction on species within its regulatory purview in its June 8 FEIS comment letter to FERC:

Long term losses of large wood from the pipeline corridor where it crosses streams is not correctly analyzed or mitigated. The FEIS states that the desired future condition of late successional riparian forest stands is 40 trees per acre, and presumes this level of stocking is adequate to protect the beneficial influences on salmonid habitat. NMFS knows of no literature that supports this claim. Reference stand characteristics for late successional forests have significantly higher stocking rates. Furthermore, the number of snags and downed logs has to be taken into consideration when analyzing the effects of forest

removal. A stocking rate of 40 trees per acre would never result in density dependent mortality of trees, starving the stream of large wood for up to 200 years.

NOAA FEIS comment letter at 2, June 8, 2009. Clearly, significant impacts have yet to be addressed and, as NOAA stated “until [the studies] are complete, analysis in the FEIS is incomplete and premature.” *Id.*

In response to our concerns about air pollution impacts, specifically about “hot gas,” FERC stated: “section 2.9 of the EIS includes a discussion of gas quality and interchangeability, which addresses the question of ‘hot gas’ being introduced into interconnecting pipelines in the West.” FEIS response to comment CO11-57. However, the text of Section 2.9 is *exactly* the same as the section we were commenting on in the DEIS. No additional analysis has been conducted. Section 2.9 addresses comments made in the scoping period, but *none* of the comments submitted on the DEIS.

For more than 17 pages of our DEIS comments we discuss the absence of final mitigation plans. FERC’s only response to this entire section is: “we note this comment references section 5 of the EIS, which is a summary only. Further explanation of referenced plans can be found in the appropriate sections of section 4 of the EIS.” FEIS response to comment CO11-59. This response suggests that the plans discussed in Section 5 of the DEIS are made mandatory, are further explained elsewhere in the DEIS, or have been completed. In fact, they are not and the plans still remain suggested conditions in the FEIS. *See* FEIS at 5-35 condition #34. FERC ignores the substance of our comments: that the final mitigation plan is yet to exist. Without it no substantive examination of impacts is possible.

In response to our comments regarding analysis of hazardous air pollutant impacts FERC responded: “hazardous air pollutants (HAP) are addressed in section 4.11.1 of the EIS.” FEIS response to comment CO11-78. The condition referenced in section 4.11.1 only suggests that Jordan Cove revise its worst case scenarios for criteria pollutants and file those calculations with the Secretary for review and approval of OEP prior to construction. Once again, this is only a recommendation, with no requirement or recourse for the public if Jordan Cove fails to follow the recommendation. Like in so many other sections of the FEIS, the public and the Commission are left with insufficient data to even effectively comment on, let alone make an informed decision.

While FERC dismisses our comments about inadequate mitigation of stream and river crossings those concerns are shared by the expert agencies. FERC stated “we believe the EIS, in section 4.3.2, includes sufficient data about the impacts of the proposed pipeline crossings of streams and rivers, and proposed measures to avoid, reduce, or mitigate those impacts. FEIS response to comment CO12-1. However, as NOAA asserted in its June 8 comment letter: “the mitigation plans for ... stream crossings are not complete. Until they are complete, analysis in the FEIS is incomplete and premature.” FERC cannot ignore the serious concerns of the expert agencies. Moreover, FERC’s response ignores the 33% risk of HDD failure, the incomplete data on erosion risks and control plans, and the lack of mitigation between the logging (clearing) of the pipeline route and construction (possibly a year – including a spawning season for ESA listed Coho salmon).

The Coalition points to these specific issues as examples of the inadequate answers provided by FERC to our DEIS comments. We in no way imply that the problems mentioned herein are the only remaining issues with the FEIS. We stand by all our DEIS comments and request that FERC address them in their entirety in a legally sufficient and timely manner.

VII. CONCLUSION

Like the DEIS, the Jordan Cove/Pacific Connector FEIS is incomplete and legally insufficient. Without significant supplementation, the FEIS does not satisfy the purpose or the letter of NEPA because it defines the purpose of the project in an impermissibly narrow manner, fails to demonstrate the need for the project, provides an inadequate analysis of the cumulative impacts of the project, fails to provide the requisite information to the public, state and expert agencies, contains fatal informational deficiencies, and fails to address the serious scientific, legal and practical concerns raised in DEIS comments. For the foregoing reasons we urge FERC to rescind the FEIS until an adequate analysis is undertaken, make the clear finding that the project is not in the public interest, and reject the application for a conditional license.

Dated this 23 day of June, 2009.



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