July 20, 2018

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North Bend Field Office
2201 North Broadway, Suite C
North Bend, OR 97459-2372

Chris Stine
401 Water Quality Certification Project Manager
Oregon Department of Environmental Quality
165 E. 7th Avenue, Suite 100
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Re: NWP-2017-41 Clean Water Act Sections 404 and 401, Section 408, Public Comment Requesting Denial of All Applications

Dear Mr. Krug and Mr. Stine:

We write representing the League of Women Voters of Coos County (LWVCC), LWV of Umpqua Valley (LWVUV), LWV of Rogue Valley (LWVRV), and LWV of Klamath County (LWVKC). We are grassroots nonpartisan, political organizations operating in the four counties in Oregon that will be directly affected by the construction and operations of the proposed Jordan Cove Liquefied Natural Gas (JCLNG) and Pacific Connector Gas Pipeline (PCGP), commonly referred to collectively as the Jordan Cove Energy Project (JCEP). Our detailed review of these proposed activities and documents for the JCEP shows that the projects are in direct conflict with many of the state and national League of Women Voters policies. These policies are based on study documents and resultant positions regarding natural resources, water quality and quantity, climate change, offshore and coastal management, land use, energy conservation, and seismic risks.

Our comments are provided in sections that have headings to address the United States Army Corps of Engineers (USACE) permitting criteria in general, and then specifically as these relate to Section 404 of the Clean Water Act, the criteria to evaluate proposed dredging of the federal navigation channel under Section 408, proposed mitigation under both 404 and 408 considerations, and finally safety issues and cumulative impacts.

Since the 1950s, the League has been in the forefront of efforts to protect air, land, and water resources. The League of Women Voters of the United States (LWVUS) "*believes that natural resources should be managed as interrelated parts of life-supporting ecosystems. Resources should be conserved and protected to assure their future availability. Pollution of these resources should be controlled in order to preserve the physical, chemical and biological integrity of ecosystems and to protect public health*." The League of Women Voters of Oregon (LWVOR) " . . . *opposes degradation of all of Oregon's surface and ground water. . . .*" and declares that climate change is the greatest environmental challenge of our generation. And

finally, at the 2018 National LWV Convention, the following resolution passed: "*The League of Women Voters supports a set of climate assessment criteria that ensures that energy policies align with current climate science. These criteria require that the latest climate science be used to evaluate proposed energy policies and major projects (*emphasis added*) in light of the globally-agreed-upon goal of limiting global warming to 1.5 degrees C, informed by the successful spirit of global cooperation as affirmed in the UN COP 21 Paris agreement*." We, as local Leagues, are part of the national and state LWV. Based on these positions and our understanding of the likely impacts of the proposed JCEP on critical environmental resources and communities in our areas, the LWVCC, LWVUV, LWVRV, and LWVKC submit jointly this comment on JCEP's applications for a Clean Water Act Section 404 and Section 408 of the Rivers and Harbors Act permits under consideration by the USACE. Herein we will also provide some initial information pertinent to the Clean Water Act Section 401 permit JCEP seeks from the Oregon Department of Environmental Quality (DEQ); we will submit an additional, separate comment to that agency by August 20, 2018, as well.

For reasons we provide in this comment, we respectfully but strenuously urge that the USACE and DEQ deny the abovenamed permit applications.

USACE PERMITTING CONSIDERATION CRITERIA

According to the Corps' "Permitting Process Information" publication, in considering whether to approve or deny an application the USACE must consider: *"1. The relevant extent of public and private need for the proposed work; 2. Where unresolved conflicts of resource use exist, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work; and 3. The extent and permanence of the beneficial and/or detrimental effects the proposed structure or work is likely to have on public and private uses to which the area is suited."* The publication goes on to state that, "No permit is granted if the proposed project is found to be contrary to the public interest."[1] **After carefully reflecting on each of these required points of consideration (restated below), we contend that the JCEP is contrary to the public interest and all applications should be denied.**

"#1. Relevant extent of public and private need for the proposed work."

We believe, pursuant to consideration criterion #1, that the JCEP is intended to serve the needs of a private, foreign corporation and it is inappropriate for the resources and interests of the State of Oregon, federal public lands, businesses, private landowners, and the public to be sacrificed to that end. Any public need the project may serve is incidental and temporary and—in comparison to the detriments and costs to the state, its resources, and its people—inconsequential.

As per the USACE Public Notice, the stated Project Purpose for the JCEP construction activities is ". . . to export natural gas derived from a point near the intersections of the Gas Transmission Northwest Pipeline system and Ruby Pipeline system."[2] In other words, the Project Purpose is to execute all of the activities described on pp. 2-9 of the Public Notice [and in JCEP's application to the Federal Energy Regulatory Commission (FERC)], is to facilitate the export of natural gas for the benefit of a private, for profit corporation whose goal is to enrich its

[1] "U.S. Army Corps of Engineers Permitting Process Information." https://www.lrl.usace.army.mil/Portals/64/docs/regulatory/Permitting/PermittingProcessInformation.pdf., p. 2.
[2] Ibid.

shareholders. We believe there is *no public interest* or common good *need* intended to be served here.

Additionally, the Project Purpose does not include providing energy to any Oregon or U.S. residents. It is all destined for export to foreign countries. Furthermore, the natural gas could be sourced, from partially to fully, from Canadian plays. There is nothing in the JCEP application to FERC to prohibit Pembina, the Canadian parent company, from booking up to 100 percent of the pipeline's capacity from the land-locked Montney gas field in British Columbia. This means that, even if U.S. decision-makers believe it is acceptable to retain a national energy policy focused on fossil fuel development—despite clear evidence that this is neither a wise nor a prudent course—JCEP is potentially *not in the national interest*. But regardless of where the fracked gas is sourced, JCEP offers very little in terms of short-term benefits, and even less for the long term, to balance against the extensive detriments to the people of Oregon and the American people.

***"# 2.* Practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work."**

Pursuant to consideration criterion #2, the Public Notice is devoid of information needed for meaningful response to this criterion as we attempt to participate in this opportunity for comment. We intend to discuss several of the many unresolved conflicts of resource use that exist, as will other commenters. But the Public Notice provides nothing to reflect, or allow consideration of, "alternative locations or methods." We are aware that the National Environmental Policy Act (NEPA) process requires full discussion of alternatives, but for unexplained reasons, for the current iteration of the Jordan Cove Energy Project application, a decision has been made to put a number of state and federal permit applications out for public comment before the Applicant has even finished submitting required information for the NEPA process, including regarding alternatives.

"# 3. The extent and permanence of the beneficial and/or detrimental effects the proposed structure or work is likely to have on public and private uses to which the area is suited."

We believe that the JCEP application is contrary to the public interest and that the USACE's "Public Interest Review" should result in denial of relevant permit applications.

The USACE's "Permitting Process Information" publication stresses the "central role" of public involvement in the Corps' regulatory program and states that, "The Corps public interest review is the main framework for the overall evaluation of projects . . . . [which evaluation] requires the careful weighing of all public interest factors relevant to each particular permit application."[3] The Public Notice to which we are responding verifies that those same factors will be utilized by the USACE in its consideration of JCEP's application for a permit under Section 404 of the Clean Water Act. Project evaluation under Section 408 of the Rivers and Harbors Act of 1899, states that, "If the potential detriments are found to outweigh the potential benefits, then the [U.S. Army Corps of Engineers Portland] District may determine the proposed alteration [of a Federally Authorized project] is injurious to the public interest."[4] We offer the following discussions pertinent to many of the factors outlined in the USACE's "Public Interest Review:"

[3] Ibid., p. 3.
[4] Ibid., p. 11.

- **Navigation.** While the application notes "Navigational Reliability Improvements" to be attained by dredging of the Federal Navigational Channel, there is no evidence that a deeper and wider channel is necessary for any purpose other than to allow the Applicant to accomplish their commercial goals. If constructed, the enormity and unique needs of an LNG export operation of this nature can be expected to take precedence over all other uses of the channel. The only two other LNG facilities in the U.S. are situated in ports with less complex multiple uses and without the limited geography of Coos Bay. Navigation in and around the project facilities in the Coos Bay by all other users will necessarily be curtailed and disrupted to make way for the tanker and facility operations. As a result of the proposed alterations in the channel and berthing areas, there will be deballasting and movement of tankers that will likely complicate the hydrological features of the bay near the facility. With the explosive nature and risks to safety, existing recreational and commercial shipping in the area would be affected. This proposed dredging and construction, as well as operation of the facility will restrict in significant ways all other commercial and recreational water uses including fishing, a public trust right in Oregon.[5] We will discuss matters related to dredging of the Federal Navigation Channel associated with the current application in more detail below at "SECTION 408 (33 U.S.C. 408)"

- **General environmental concerns.** These will be addressed in various places in this comment. Many of the environmental impacts of the terminal and associated facilities must be dealt with separately from the pipeline, but the cumulative effects must consider both components. We note here that this project has impacts at multiple scales—from local to state, national to global—by creating 36.8 million metric tons (MMT) of lifecycle greenhouse gas (GHG) emissions annually for at least 30 years of projected operations.[6] Oregon is far from being on track to meet its GHG emissions goals of 10 percent below 1990 levels by 2020 and 75 percent below 1990 levels by 2050.[7] That projection is based on the assumption that the Boardman Coal Power plant will be closed in 2020. It does *not* take into account the 2.6 MMT per year of "new," in-state emissions that would be generated if the JCEP were to be built. It is sobering to realize that, if JCEP were to be built and if Oregon were to manage to meet its GHG goal for 2050 of 14.1 MMT/year, 16% of Oregon's GHG emissions would be squandered to support this corporate enterprise's operations without delivering one kilowatt hour of energy to Oregonians. While Jordan Cove spokespersons continue to suggest that there *could* be natural gas service to Oregonians residing near the pipeline, it appears that their application to FERC does not request authorization for that. There is little on a cost-benefit balance sheet to weigh against the momentous environmental detriments—from GHG emissions to water degradation to harm to fish and wildlife to increased risk of wildfire to risks of spreading of invasive species to disruption of water rights, and other deleterious effects that this project would pose.

- **Wetlands.** USACE's "Permitting Process Information" states that, **"**A fundamental principle of the Section 404(b)(1) guidelines is that dredged or fill material should not be discharged into wetlands and other waters, *unless it can be demonstrated that the*

[5] *Oregon Shores Conservation Coalition v. Oregon Fish and Wildlife Commission*, 62 Or 481, 493 (1983).
[6] Oil Change International, *Jordan Cove LNG and Pacific Connector Pipeline Greenhouse Gas Emissions Briefing,* January 2018, http://priceofoil.org/2018/01/11/jordan-cove-lng-and-pacific-connector-pipeline-greenhouse-gas-emissions/.
[7] Oregon Global Warming Commission, *Biennial Report to the Legislature, 2017*, p. 24, http://www.keeporegoncool.org/reports/.

discharge will not have unacceptable adverse impacts on those waters."[8] (Emphasis added.) DEQ must concern itself with this matter as well. Historically and to date, the Applicant has not only failed to demonstrate the absence of adverse impacts, they have not provided adequate information to allow the public, state, or federal agencies to identify and assess project impacts to wetlands. To underscore the deficiency, we note that the Oregon Department of State Lands (DSL) has just recently found it necessary to grant the Applicant's request for "suspended awaiting revision" status until the end of August 2018 on their Removal and Fill Application precisely because their Kentuck Slough and Eelgrass mitigation strategies are still inadequate. A total of six miles of wetlands will be impacted across all four affected counties. Resource Report 2 of JCEP's application to FERC inadequately describes the wetlands that will be impacted and misses entirely the fact that wetlands are ecosystems that are highly subject to disruption, degradation, and destruction. The Applicant acknowledges cumulative disruption of 169 acres of wetlands via construction of the Jordan Cove LNG Terminal and Liquefaction Facility, but dismisses that impact as "temporary," without regard for the fact that, even done right, living communities of flora and fauna disrupted by dredging, filling, earth-moving, draining, etc., may never recover. Their answer to these risks and certain negative impacts is the contention that all will be well under their Mitigation Plan. The USACE and DEQ must not assume that this plan provides an appropriate trade-off. See below at "Mitigation for Loss of Wetlands" for a detailed discussion of issues related to wetlands and JCEP's dredging and mitigation plans.

- **Economics.** We believe there is ample reason to find that, on balance, JCEP is likely to result in more economic detriments than benefits. The Applicant cites jobs as a benefit and we would agree that there is a need for good jobs in our state and local communities. However, we are not confident that this project will result in employment circumstances the Applicant describes. The number of temporary jobs claimed has been elevated from 2,000 in the previous submittal to up to 8,000 in the current application. The reason for the increase is unclear, since this project lacks the jobs associated with potential of construction of the power plant sector included in the earlier version. Around 100 permanent jobs are claimed. The Applicant implies, and supporters appear to believe, that these jobs will go to local, or at least state, residents. Over the decades, communities across the nation have learned that oil and gas projects don't necessarily deliver on those promises. One of the primary reasons is that the necessary skill sets workers need for a project of this magnitude and complexity must be gained by specialized training and experience. We question why Pembina would hire and pay the costs to train thousands of Coos County residents or southern Oregonians to lay 229 miles of 36-inch pipe through extremely challenging terrain when there are thousands of experienced pipefitters, welders, etc., in North and South Dakota, Pennsylvania, eastern Colorado, Texas, and so on who are looking for work? But full discussion of the claimed job creation benefit must also include factor in jobs lost as a result of the JCEP.

  In the review of economics, many existing industries have potential to be harmed, e.g., oyster and other fishing, tourism, and private timber companies. The recreational fishing industry in Oregon has broadscale economic impact and is tied to trips out of regional bays. Recreational angling for finfish contributes substantially to coastal economies. Trip spending generated $66.7 million in 2013 of total personal income to coastal economies and $68.9 million in 2014. These numbers do not include shellfish harvesting trips that

[8] "Permitting Process Information," p. 4.

are more tied to the bays.[9] In addition, the commercial fisheries and working waterfronts are essential sources of jobs and economic growth, according to the Oregon Coastal Zone Management Association (OCZMA), which conducts studies of Oregon's coastal economy and provides information to an extensive network of government and other agencies, aiming to improve the region's standard of living. "Fisheries also provide part of the overall ambience folks want to experience when visiting the Oregon coast or opting to live there. They help attract artists, writers and others, including a growing number of retirees, who in turn make their own contributions to an ever-changing diverse economy and culture. Travelers spend time watching and photographing the fishing fleets, and visitors often show up at the coast seeking fresh, locally caught seafood."[10] According to a recent report by Travel Oregon, visitor spending in Coos County supports more than 3,300 jobs—more jobs than Bay Area Hospital and the forestry/wood products industry combined. It generates $1.5 million in local tax revenues.[11] To the extent that the JCEP would disrupt the above activities, the area would suffer losses in both jobs and tax revenues.

Tax revenue to counties is the other project benefit cited by the Applicant. No doubt, additional money will help the affected counties. However, the equation is far more complicated than just dollars-in. The costs to county government directly related to JCEP activities—especially Coos County where the majority of construction will occur—will be significant; these must be factored into any responsible balancing of benefits and detriments. Socioeconomic studies and law enforcement records show that boom projects of this type can lead to community disruption of many sorts that put strains on local and state government budgets and service capacity, e.g., domestic violence, drug and alcohol abuse, increased crime, and homelessness. Communities that host boom and bust economic events such as in Wyoming, Utah, Colorado, the Dakotas, and Louisiana, have found their economic development has down sides. During the boom phase, they struggle, often unsuccessfully, to meet adequately the shared and disparate needs of both temporary and permanent residents. When boom projects end, there are employment constrictions and other economic complications.[12] And project-wide, the expected costs can include lost forest and agricultural productivity on the pipeline route, decreased property values, increased fire danger and costs, landslide events and road repair, water resource loss and quality degradation, invasive species risks, and damage to fish and other ecosystem services. There is the potential for additional costs later in the life of the project that may have to be borne by local governments, as well. One notable example is costs to eventually decommission and clean up the site. We have not seen evidence that JCEP has completed binding agreements with local governments and other government agencies to accomplish that. Those costs could exceed tax revenues and even constitute a sizable net loss to communities and tax payers.

We noted above that the JCEP will provide no energy to U.S. customers; it may also raise domestic gas prices. Industrial Energy Consumers of America (IECA) has

[9] *Oregon Marine Recreational Fisheries Economic Contributions in 2013 and 2014, Revision 2.2,* prepared by The Research Group, LLC for Oregon Department of Fish and Wildlife and Oregon Coastal Zone Management Association, September 2015.
[10] Terry Dillman, "Oregon Ports Stimulate Coastal, State Economy," *Fisherman's News,* May 1, 2013.
[11] Nicolas, A. Johnson, "Visitor spending data released by Travel Oregon," *The World,* July 16, 2018.
[12] Numerous studies support this contention, for example Bret A. Weber, Julia Geigle, and Carenlee Barkdull, "Rural North Dakota's Oil Boom and Its Impact on Social Services," *Social Work,* January 2014, pp. 62-72 and Ruth Seydlitz, Shirley Laska, "Social and Economic Impacts of Petroleum 'Boom and Bust' Cycles," U.S. Department of the Interior, Minerals Management Service University Research Initiative, June 1994.

submitted detailed communications to FERC in opposition to the project, including this concern. IECA is an association of energy-intensive, trade-exposed (EITE) manufacturing companies. They stated in one filing, "EITE industries use 75 percent of the natural gas and 73 percent of electricity consumed by the manufacturing sector and would be negatively impacted if natural gas prices increase as a result of exporting LNG. EITE industries account for over 40 percent of all manufacturing jobs."[13]

- **Fish and wildlife values**. The Corps in its "Public Notice" stated that its "preliminary review indicates the described activity may affect threatened or endangered species or their designated critical habitat." (p. 12). The presence of federally protected species in the area of impact will require consultation with federal partners, as well as Indian tribes. The JCEP project will disrupt the critical habitat of federally protected aquatic species, including Coho Salmon (*Oncorhynchus kisutch*) and Green Sturgeon (*Acipenser medirostris*). Indian Tribes, NOAA fisheries, and the State of Oregon have worked hard to restore the salmon populations in the south coast. The State has invested significant amounts of Oregon taxpayer money to restore water quality and salmon in all six of the sub-basins that would be affected by the JCEP—the Coos, Coquille, South Umpqua, Upper Rogue, Upper Klamath, and Lost River sub-basins. The Western Environmental Law Center (WELC) determined total expenditures by the Oregon Watershed Enhancement Board (OWEB) of over $37 million. The *ESA Coho Salmon Recovery Plan* produced by NOAA National Marine Fisheries Service outlines major threats, "Degraded water quality, reduced water quality, including high water temperatures, and increased fine sediment levels affect Coho Salmon production in several populations. Increased water temperature is the primary source of water quality impairment for Oregon Coast Coho Salmon, and rising water temperatures due to climate change could add to this problem. Land use activities have contributed to increased water temperatures in coastal streams by removing riparian vegetation, disconnecting streams from floodplains, and reducing streamflow through water diversions."[14]

  The LWV of Umpqua Valley conducted a study of water issues on the Umpqua River in 2009.[15] The South Umpqua River is one of the nearly 500 waterways that would be impacted by the PCGP. The League found that over the last 100 years of forest management of both private and public lands, the South Umpqua River riparian zones have been severely degraded. The Umpqua is one of Oregon's most important producers of Spring Chinook, Fall Chinook, Winter and Summer Steelhead, Coho, and sea-run Cutthroat Trout. The Umpqua system accounts for more total and wild Coho spawners than any other river system in Oregon and about 15% of Coho spawners coast-wide.[16] Anadromous fish, such as Coho and Chinook Salmon and Steelhead (and resident Rainbow and Cutthroat) Trout, swim, feed and spawn in the rivers and streams of the Umpqua National Forest. In the 1930s, the entire South Umpqua watershed was inventoried, and the data were vastly different from present conditions. Historically, the South Umpqua was a larger producer of salmon than the North Umpqua. By the time of the study, the South Umpqua was too warm to support salmon in the summer. Coho, once abundant there, had declined significantly. Juvenile salmon must spend two to three years in their natal stream before going to the ocean. They must have adequate

[13] Paul N. Cicio, President, Energy Consumers of America to FERC (filing), June 1, 2016.
[14] NOAA National Marine Fisheries Service, *ESA Coho Salmon Recovery Plan*, p. 6.
[15] League of Women Voters of Umpqua Valley, *Local Water Study, Phase One Report,* June 2009.
[16] *Partnership for the Umpqua Rivers Action Plan,* June 2007, p. 3.

stream flows and acceptable quality of fresh water.[17] Any construction associated with the PCGP in the South Umpqua River basin will almost certainly further degrade this already at-risk river and watershed and place the fish in even greater jeopardy.

Coos Bay is considered part of the critical habitat for the threatened distinct population of Green Sturgeon and provides important summer habitat for subadult and adult Green Sturgeon. According to the NOAA plan for recovery of sturgeon, "Road building (resulting in sedimentation), a proposed liquefied natural gas (LNG) project, dredging, urbanization (resulting in pollution and increased peak flows), commercial shipping, stream channelization, wetland filling and draining, and development and silviculture (resulting in the loss of large woody debris and forested land cover) . . . . " are threats to recovery.[18]

The Oregon Department of Fish and Wildlife (ODFW) has articulated on many occasions its numerous concerns about detrimental potential impacts of the JCEP to fish and wildlife. In its segment of the State of Oregon's Scoping Comment to FERC last fall, ODFW provided a list of issues related to various species of fish, mule deer, elk, and wolves and described its responsibilities and protective plans for each. They mentioned that mitigation plans would likely be needed for many issues, a practice we find troubling and will discuss below. However, we note ODFW's unique approach to potential negative impacts to Category 1 habitats. These are defined as, "coniferous old growth and late successional forest (a portion of this acreage with spotted owl and marbled murrelet use); vernal pool wetlands; mature oak woodlands; and rare plant habitat." Citing "The Fish and Wildlife Habitat Mitigation Policy," ODFW states, "The Department shall act to protect Category 1 habitats described in this subsection by recommending: (A) *avoidance* of impacts through alternatives to the proposed development action; or (B) *no authorization* of the proposed development action if impacts cannot be avoided."[19] (Emphasis added.)

Other fish and wildlife values are at risk with this development and are addressed in other sections of this comment.

- **Land use**. "The League of Women Voters of Oregon supports the Land Conservation and Development Commission (LCDC) as the statewide planning agency . . . . [and] the 19 statewide land use goals. . . . The League . . . supports policies that promote both conservation and development of land as a natural resource, in accordance with Oregon's land use goals."

  The Applicant describes land use as follows: "Approximately 61.86 percent of the land crossed by the Pipeline is classified as Forest Land; 13.68 percent is classified as Agricultural Lands; 14.43 percent as Rangelands and 8.05 percent as Urban or Built-up Lands. The other land classifications combined (Water, Wetlands, Barren Lands) comprise about 2 percent of the Pipeline."[20]

[17] LWVUV, p. 6.
[18] NOAA National Marine Fisheries Service Final Green Sturgeon Critical Habitat Biological Report – September 2009.
[19] Ellen F. Rosenblum, Oregon Department of Justice to Kimberly D. Bose, Federal Energy Regulatory Commission, August 15, 2017, pp. 11-34.
[20] PCGP Resource Report 8: Land Use, Recreation, and Aesthetics, p. 8.

Throughout the history of this project, there have been land use conflicts in at least two of the four affected counties—Coos and Douglas. Most recently, the Land Use Board of Appeals (LUBA) rejected Coos County's earlier approval of JCEP's application, finding that the County erred with respect to 1) its treatment of the public benefit and trust standard for the estuary, 2) impacts to Henderson Marsh bordering the terminal site, 3) dredge and fill impacts, 4) impacts of dewatering at the terminal site, 5) approval of the Southwest Oregon Regional Safety Center; and 6) reliance on suspended FERC permits.[21] There are currently three cases brought by four landowners against Douglas County pending in the Douglas County Circuit Court. The lawsuits are contesting the PCGP Conditional Use Permit extensions by the County and an amendment to the original permit to allow the pipeline to be used for export, rather than import, purposes.[22] The USACE is aware that the LUBA decision and other Land Use cases may have implications for a number of state and federal permits.

- **Conservation**. The control of invasive species is a required practice for all public land managers. A U.S. Forest Service directive states, "The Executive Order on Invasive Species, signed by the President on February 3, 1999 states that, federal agencies will use relevant programs and authorities to prevent the introduction of invasive species, and *not authorize or carry out actions* that are likely to cause the introduction or spread of invasive species *unless the agency has determined and made public documentation that shows that the benefits of such actions clearly outweigh the potential harm* and all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."[23] (Emphasis added.) Construction of this 229-mile, 36-inch pipeline that would require denuding a 95-foot-wide swath of vegetation promises the spread of invasive species. Seneca Jones Timber Company LLC owns 3,600 acres of private forest lands and believes their property and operations will be negatively affected in several ways by the PCGP. They discussed invasive species along with other detrimental consequences in a filing to FERC, "Pipeline corridors quickly become brushy areas with a high level of invasive species, such as scotch broom and blackberries. This project proposes reestablishing the pipeline right-of-way with grass. During the dry season, these grasses and brush varieties can contribute a substantial slash component that will be susceptible to forest fires . . . and will increase the risk to Seneca Jones Timber Company, LLC's forest land. The potential for invasive species to spread to our property requires mitigation to maintaining tree growing sites and increases our operational costs."[24] This discussion by Seneca corroborates our contention that invasive species may proliferate and add to the negative cumulative project impacts on timber values, as well as underscores the potential for negative economic impacts of the project on existing industries, in this case, private timber companies. The recurring requirement for this action—that benefits outweigh the detriments—is called into question by the Seneca example.

[21] Oregon Shores Conservation Alliance, "Land Use Board Blocks Jordan Cove Permit," 2016.
[22] Communication with Stacey McLaughlin, Plaintiff, July 13, 2018.
[23] USFS, "Direction for the development of noxious weed prevention and management practices," National Policy Forest Service Manual (FSM) 2080 Noxious Weed Management, citing Executive Order on Invasive Species (Feb. 3, 1999) and "Stemming the Invasive Tide, Forest Service Strategy for Noxious and Nonnative Invasive Plant Management." PCGP, Resource Report 7.
[24] "Motion to Intervene of Seneca Jones Timber Company, LLC," FERC Dockets CP17-494-000, CP17-495-000.

Another conservation issue relates to prevention of timber and habitat loss due to destructive wildfire.[25] The substantial increase in human and equipment activity in heavily timbered areas during pipeline construction can by itself be expected to increase the risk of fire; 62 percent of the pipeline route is forested. As the Public Notice indicates, PCGP plans to construct 229 miles of pipeline simultaneously in five sectors. For various reasons, the Applicant indicates that pipeline construction would take place during the "dry season" (apart from some areas of Klamath County where the Applicant has agreed to construction during the winter months to avoid disrupting irrigation practices). In an average year in southern Oregon, that would put the construction phase for the bulk of the pipeline from mid-May or early June through October. However, the Applicant has committed to avoid construction activities in certain areas along the pipeline route during critical bird nesting and other wildlife protection periods. That will push the construction period further into the summer. It seems unavoidable to conclude that, in order to meet company timelines and stay within budget, pipeline construction—involving the use of feller-bunchers, chainsaws, bull-dozers, track-hoes, and other heavy equipment, as well as blasting—would need to take place across four southern Oregon counties under high to extreme wildfire risk conditions. The various entities that work to prevent, control, and fight wildfires have restrictions on far less aggressive and concentrated activities than pipeline construction during a growing number of summer months. Will these restrictions be waived for this project? Once the pipeline is installed, will their presence inhibit standard wildfire fighting practices? Oregon and other western states are already facing increasing wildfire occurrence and intensity and are suffering increasing monetary, resource, and private property losses, as well as negative health consequences and loss of life due to fires exacerbated by current drought and rising temperatures. Governor Kate Brown has declared drought emergencies for a number of Oregon counties in 2018, including Douglas and Klamath Counties.[26] How is it acceptable to allow this project that so clearly would dramatically increase the risk of wildfire to go forward?

- **Historic properties/Cultural resources.** The Karuk Tribe, Klamath Tribes, Yurok Tribe, Round Valley Tribe, and the Confederated Tribes of Coos, Lower Umpqua, and Suislaw Indians have all expressed deep concerns about cultural resources that would be endangered, destroyed, or otherwise harmed by the JCEP. They have also noted repeated failures of governmental entities and the Applicant to properly and lawfully consult them regarding the project. For example, the Karuk Tribe said this to FERC in their request for formal, government-to-government consultation: "For the Karuk Tribe, cultural resources need to be understood in the context of a living culture, of all species and not just humans within the environment, and within a defined Klamath Riverscape. The Klamath River is on course to be substantially restored by 2021 by the removal of four dams upstream. The Pacific Connector project would cross under the Klamath River in the vicinity of Klamath Falls. It threatens the integrity of Karuk cultural resources, and of the lifeways of the Karuk people, by threatening the fish on this vital salmon-rearing watershed."[27] The Klamath Tribal Council stated that ". . . the Klamath Tribes strongly oppose the Pipeline because a significant portion of the proposed construction would take place on lands that are within the traditional territory of the Klamath Tribes, where there are located many significant cultural resources and waters of current and historical

[26] Oregon Governor's Office, "Governor Kate Brown Declares Drought Emergencies for Baker and Douglas Counties," Press Release, June 18, 2018. Holly Dillemuth, "Gov. Brown signs drought declaration," *Herald and News,* March 14, 2018.
[27] Alex R. Watts-Tobin, Ph.D., Karuk Tribe THPO/Archaeologist to Kimberly Bose, FERC, May 3, 2018.

and spiritual importance to the Tribes. The Klamath Tribes have a long-standing policy that all cultural and traditional sites are sacred, and therefore any risk of disturbance to human remains and cultural sites is unacceptable."[28] To our knowledge, the Confederated Tribes of Coos, Lower Umpqua, and Suislaw Indians have not formally opposed the JCEP, but they stress the ". . . specific problems faced by the Confederated Tribes, and by our neighboring Tribes, as we have struggled to compel FERC and USACE to consult openly and willingly with our Tribes, and to compel FERC and USACE to adequately address the many concerns we have raised about the archeological resources, human burials, and sacred places that will be utterly destroyed if the Jordan Cove LNG project is approved as currently designed."[29] Tribal spokespersons for the Confederated Tribes of Coos, Lower Umpqua and Siuslaw, the Klamath Tribes, the Yurok Tribe, and the Cow Creek Band of Umpqua Tribe of Indians shared their concerns about the impacts of the JCEP at the June 8, 2018 meeting of the Oregon Environmental Justice Task Force in Klamath Falls. At the end of the meeting, the Task Force concluded that the project is not in the best interests of the State of Oregon and indicated that they would convey that finding to the Governor and other decision-makers.[30] The destruction and disrespect for the needs and values of these sovereign nations are not in the public interest.

- **Water supply and conservation.** The JCEP is incompatible with water conservation and will reduce the supply available for other purposes. It is unclear whether there are adequate available water rights in the pipeline corridor that could be appropriated for purposes of this project. Construction of the 229-mile pipeline will require water for dust control. In addition, hydrostatic testing of the completed pipeline will use an estimated 60 million gallons of water.[31] We find these uses of water, especially under current drought and weather conditions, to be contrary to the public interest.

- **Water quality.** As noted above, in addition to these comments and comments regarding associated water quality from dredging operations, we will submit separate comments to DEQ regarding project activities that could degrade Oregon's water quality and violate the state's water quality standards. We have studied past and current applications and documents submitted by the Applicant; followed and participated in state and federal permitting processes; read comments and other communications by Oregon state agencies, federal agencies, elected officials, organizations, tribal leaders, landowners, industry, the public, and other interested parties. We conclude—and will amplify in our supplementary comment to DEQ—that the proposed JCEP would have the following impacts that are against the public interest: 1) Further degrade stream segments that are already water quality impaired for temperature, dissolved oxygen, pH, turbidity, and sedimentation. 2) Increase water temperature to unacceptable and harmful levels by removing riparian vegetation that shades streams, causing stream heating along a minimum 95-foot wide construction easement. 3) Unacceptably increase turbidity by causing a more than 10% increase in natural turbidity levels in stream segments impacted by pipeline installations. 4) Impair beneficial uses in the Rogue, Umpqua, and

[28] Donald C. Gentry, Chairman, Klamath Tribes of Oregon to Kimberly D. Bose, FERC, May 2, 2018.
[29] Mark Ingersoll, Chairman, Confederated Tribes of Coos, Lower Umpqua, and Suislaw Indians to Larry Roberts, Assistant Secretary – Indian Affairs (Acting), U.S. Department of the Interior, November 30, 2016, pp. 3-4.
[30] "Oregon Physicians for Social Responsibility (PSR) Partial Summary of June 8, 2018 Public Meeting of Oregon Environmental Justice Task Force (EJTF) and Confederated Tribes of Coos, Lower Umpqua and Siuslaw, The Klamath Tribes, The Yurok Tribe, and The Cow Creek Band of Umpqua Tribe of Indians."
[31] PCGP FERC application, "Appendix V.2, Hydrostatic Test Plan, September 2017, p. 5.

Klamath Basins by engaging in blasting activities that will adversely impact surface water and groundwater used for drinking and commercial and recreational fishing. 5) Foul surface and groundwater by failing to adequately prevent herbicides from entering Impaired Waterways or their tributaries, as well as wetlands, again harming the habitat of endangered animals and fish and contributing to the overall degradation of Oregon waters. 6) Foul surface and groundwater by failing to adequately prevent fertilizers from entering Impaired Waterways or their tributaries and other waterbodies. 7) Expose through dredging and filling and other construction activities—both in the bay and along the pipeline—significant amounts of contaminated soils from various current and historical industrial activities, such as timber processing and mining. 8) Risk jeopardizing six major rivers with numerous important values, five by using hydraulic directional drilling (HDD) and one with an open cut across already impaired water.

- **Considerations of property ownership**. These make up a central issue in the JCEP, particularly as it relates to the PCGP. Within its positions on Land Use, "The League of Women Voters of Oregon supports protection of private property rights commensurate with overall consideration of public health and environmental protection."[32] The fact that only a small percentage of private landowners had signed easement agreements by 2016 was a primary reason FERC denied the project's application. An unknown number of landowners have since signed, but many have still refused. The record is replete with landowner concerns specific to the negative impacts the project would have on them and their families and communities. Examples of landowner objections are loss of property and disruption of current and planned use; unwanted use of herbicides on their property; degradation of visual and ambient values; loss of trees and other vegetation; reduction in property value; loss of property marketability; introduction of invasive species; health impacts of methane leakage; risk of explosion and wildfire; risk of erosion and landslides; unwanted encroachment on their property of company employees for pipeline maintenance, and damage to water resources including irrigation; and pollution and interruption of drinking water sources.

  An important matter to property ownership is eminent domain. There is significant resistance to the use of eminent domain for a totally private corporate purpose—by affected landowners, but the view is more widely held. Eminent domain as it would be used for JCEP, plus the length of time landowners have been held in limbo because of the project, motivated the Jackson County Commission to make a formal declaration of opposition in 2016. The Board of Commissions stated, ". . . Jackson County opposes the use of eminent domain for private economic gain. . . . Our stance opposing eminent domain for private economic benefit is so strong that we have adopted an Ordinance, codified as Section 216.23 of the Codified Ordinances of Jackson County, specifically opposing it as a practice. Further, in passing Measure 39 in 2006, the people of the entire State of Oregon also made it clear that the entire state was opposed to using eminent domain for private gain."[33] The Shady Cove City Council, serving a small city just south of where the pipeline would cross the Rogue River, has passed three resolutions against the pipeline project, most recently on July 19, 2018. One of several concerns outlined in the resolution is negative impacts on landowners.[34] A recent public

[32] http://lwvor.org/home/take-action/current-positions/.
[33] Jackson County Board of Commissioners to [FERC] Commissioners Bay, LeFleur, Clark, and Honorable, and Director Miles, March 17, 2016.
[34] Georgia Lawson, "Shady Cove states opposition to proposed pipeline," July 19, 2018, https://ktvl.com/news/local/shady-cove-states-opposition-to-proposed-lng-pipeline. City of Shady Cove, Resolution

opinion poll of Oregonians statewide by Policy Interactive found that 57percent of respondents somewhat or strongly opposed the JCEP, but 66 percent, 9 percentage points higher, said they opposed the use of eminent domain to accomplish the project.[35]

SECTION 404 OF THE CLEAN WATER ACT

Jordan Cove Terminal and Liquefaction and Associated Facilities

The project description in the Public Notice discusses proposed temporary and permanent alterations in the Coos Bay area. Each of these actions has associated short term and longer term effects on the water quality, the water currents, and functions of the wetland areas. The export terminal permit request specific to Corps of Engineers Authority addresses a number of alterations of the bay and associated wetlands that are the result of the request for the terminal and liquefaction facility, the ship access channel from the Federal Navigation Channel, a slip and berth for two vessels and tugs, an offloading facility utility corridor, a barge berth for temporary access, and the South Dunes Site that will house their administrative buildings, gas metering, and housing. The South Dunes site includes filling 2.8 acres of palustrine wetlands and the access and utility corridor affects approximately 0.6 acres of palustrine wetlands. The proposed access channel connecting the slip to the Coos Bay Channel is a massive alteration that is more than seven football fields wide and 22 acres in coverage. The project proposes to dredge this slip and access channel to a depth of 45.2 feet with a 1.7 foot over dredge allowance (46.9 feet). Why is this additional depth necessary for the project? There is no justification for this depth and the ship sizes are not addressed in the document. What do they know about the composition of the bottom sediments? There is a likelihood that they may reach bedrock and this substrate cannot be dredged without hard rock drilling and/or blasting. What sort of management is planned for the sediments? The proposal indicates that a total of 4.3 million CY would be dredged in wet sediments. The process of dredging and the dewatering of sediments to a spoil location will create large areas of impact that are short-term and longer-term. Sediments that are easily suspended will result from erosion at the spoil location even after dewatering. These spoils need to have a detailed management plan as to how to control the release suspended sediments to the area where they are dewatered. In the location of dredging, nearly two acres of submerged eelgrass exists. What sort of recovery program will be used for the eelgrass that is removed, as this should be used as a donor source for any additional restoration planned, such as near the airport.

Moreover, the filling of the upland areas at the Roseburg Laydown area, utility corridor, and South Dunes with dredge materials from the site is not detailed in any fashion to address the dewatering process of the material that is moved. The composition and stability of the area of deposition are to be questioned. A portion of these areas are already wetlands and no mention is made of mitigation for the effects of fill and sloping controls related to those. The slip area is adjacent to a private property called the Henderson Property. What is the anticipated effect of building the barge berth and the slip for ships on the existing wetlands on private property?

Horizontal directional drilling: Horizontal Directional Drilling (HDD) operations are proposed at several locations beneath the Coos Bay and Estuary and under portions of the Coos River (Drawings 38 and 40). Although not expressed in the application, given the size of the pipe (36-inch diameter) and the areas estimated for HDD, likely a minimum of > 3,900 CY of sediments

18-19, July 19, 2018.

[35] Policy Interactive, *Jordan Cove LNG (Jan/Feb 2018*, http://www.policyinteractive.org/public/JordanCoveFacilityProposalOpinionSurvey2.14.18.pdf.

will need to be excavated for the pipe lines proposed in the vicinity of the bay. The HDD operations along the pipeline are not detailed to any extent, and at each location, potential risks to the water quality and environment exist from placement of the spoils, and from risks inherent in drilling operation. Where will these sediments be brought to the surface and placed? HDD operations generally require a suite of drilling fluids and the location of drilling places the water quality and organisms in the environment at risk. Moreover, in these drilling operations, there are risks of failure that can lead to release of contaminated sediments and drilling fluids.

Pacific Connector Gas Pipeline Issues

Contaminated and Toxic Hazards Caused by Dredging and Fill: The matter of toxic and contaminated materials that would potentially find their way into the numerous water bodies to be crossed by the PCGP is largely dismissed as insignificant by the Applicant. We contend that their investigation and description of potential contaminants is insufficient. The Applicant acknowledges that contamination exists, but claims use of Best Management Practices (BMP) will eliminate significant impacts. As we explain below, our review of project information indicates that they understate, underreport, and under-evaluate numerous potential issues.

"Attachment E: Contaminated Substances Discovery Plan" (of the Section 404 Permit Application for the PCGP) has the stated intent: "to outline practices to protect human health and worker safety and to prevent further contamination in the event of an unanticipated discovery of contaminated soil, water, or groundwater during construction of the [PCGP]."[36] We have several concerns with the thrust of this document and believe USACE should find reason thereby to deny the 404 Water Quality permit JCEP seeks.

First, although in Attachment E, PCGP purports to have evaluated "sites within construction areas" and "sites in proximity to pipeline project area" by consulting DEQ's Environmental Cleanup Site Information Database (ECSI), they conclude "no risk of impact" for each one. The rationale most often provided is that the areas will only be used as pipe yards. We contend that this approach disregards the realities of how dangerous and harmful contaminants are acted upon by ongoing forces such that they can be released to cause deleterious impacts. Contaminated soils do not suddenly become stable and inert once a construction period is over. If that were the case, why would the EPA and DEQ concern themselves at all with contaminated sites, as long as human activity that created that situation has ceased. In fact, the massive disturbance the construction phase of this project would generate is just the beginning of a potential set of cascading and long-term circumstances that likely will degrade our water quality far into the future. Every hard rainfall that sends water, if not mud, rushing across a clear-cut easement and eroding its way down a steep embankment begins a chapter in the story of how this project would exact an unacceptable cost on the waters of the state and nation. And looking only at the construction phase, we are not assured by the Applicant's promise at 5.0 that, when "unanticipated contaminated soil, water and/or groundwater is encountered during construction . . . . All construction work in the immediate vicinity of areas where hazardous or unknown wastes are encountered will be halted" and a long list of measures will be implemented before construction resumes.[37]

More concerning is that Attachment E is silent on other egregious sites of known contamination in close proximity to the pipeline construction route. Human-induced soil contaminants have

[36] Pacific Connector Gas Pipeline, "Section 404 Permit Application, Attachment E: Contaminated Substances Discovery Plan," October 13, 2017, FERC, Docket CP17-494, p. 1.
[37] Ibid., pp. 7-8.

been found wherever industrial activity has been done historically. The Applicant has not investigated and reported on the most enduring industry, timber and wood products, beyond the former Weyerhaeuser Containerboard/Mill property in the Jordan Cove area (ECSI Site #1083). In the past, DEQ has found mineral spirits, hydraulic oil, diesel, heavy-oil-range petroleum hydrocarbons, heavy metals, butylated tin compounds, polynuclear aromatic hydrocarbons, polychlorinated biphenyls, and dioxins. The Applicant claims that "The Jordan Cove Meter Station (MP 0.00) is the only location associated with the Pipeline where excavation would have the potential of encountering known contamination." They go on to list nine ESCI or Leaking Underground Storage Tank (LUST) sites, none of which they expect will pose problems. Whether or not they are correct in that warrants further investigation, but what is missing is any mention of seriously contaminated sites that have been under investigation by the EPA and DEQ for decades to the east of the last site JCEP addresses, the Thomason Mining Property near MP 109-10, leaving almost 100 miles (over 40 percent of the total pipeline) without analysis.[38]

There are conceivably several unknown sites of contamination within that segment of proposed pipeline, but there is at least one known site of significance JCEP failed to discuss. A 660-acre site in Klamath Falls formerly owned by Weyerhaeuser and now owned by Collins Company is on DEQ's database (ECSI #655). It is located near MP 198 and bounded on the south side by the Klamath River. The site of concern includes an old landfill, storm water outfall, a sawmill and powerhouse, and sediment. Limited testing has been done and most is over a decade old. But extant test results show that all areas contain multiple contaminants that DEQ summarizes as "petroleum hydrocarbons and constituents; volatile organic compounds; metals." Named contaminants include lead, chromium, manganese, nickel, copper, selenium, zinc, TPD, acetone and methyl-ethyl ketone, methylene chloride, solvents (including trichloroethylene - TCE and perchloroethylene - PCE), 1,1-dichloroethene, TCE, PCE, vinyl chloride, Bis(2-ethylhexyl)phthalate, and arsenic. An excerpt from the ESCI states, "It should be noted that this segment of the Klamath River is listed as water-quality-limited. In particular, total maximum daily load (TMDL) limits for pH, dissolved oxygen, temperature, ammonia toxicity, and chlorophyll-a are exceeded. The primary reasons for this are thought to be unrelated to point sources, and include algae entering the river from Lake Ewauna and Upper Klamath Lake, agricultural runoff, and historic storage and transfer of logs on the river. The Klamath River National Wildlife Refuge is across the river from the plant."[39] The ESCI database entry for the site indicates that appropriate cleanup measures have not been executed due to a disagreement over distribution of responsibility between the former and current owner. The alignment maps are not entirely helpful because MP 198.6-198.8 are missing, but the fact that the Applicant presents no information about this only marginally tested, but clearly contaminated ESCI site, is deeply concerning.

Additionally, the PCGP will be routed near the Red Cloud, Mother Lode, Nivinson, and Elkhorn mining groups, posing the potential for mercury contamination from historic cinnabar mines. The Applicant's consultant, GeoEngineers, conducted sampling and produced a report on their findings in 2007. At 6.2.2 Ecological Health Risk Screening, the report notes, "Mercury was detected in soil and stream sediment samples at concentrations that exceed ecological risk screening criteria at each of the sampling areas, except in presumed background areas. However, the proposed construction should not alter or adversely affect ecological health at the site or downstream areas because appropriate erosion and sediment control measures at

[38] Ibid., pp. 1-6.

[39] Oregon Department of Water, Environmental Cleanup Site Information (ECSI) Database Site Summary Report - Details for Site ID 655, Weyerhaeuser - Klamath Falls.

upland and in-stream areas will be rigorously implemented in accordance with the PCGP Erosion Control and Re-vegetation Plan (ECRP) and the site-specific erosion and sediment control plan." GeoEngineers concluded: "It is our opinion that the relatively low concentrations of mercury in sediment in the EFCC channel at the proposed pipeline crossing, along with the limited disturbance area (less than 95 linear feet), does not pose a significant risk to downstream human and ecological receptors." [40] We cannot assess the accuracy of Geoengineers findings or conclusions. However, the extent of disturbance required for this project coupled with factors such as the terrain, the potential for collapsing mining structures, and weather conditions over time suggest that at least more thorough study and consideration of operations and cumulative impacts is needed before any water quality permits are issued for this project. GeoEngineers' work was done over a decade ago and some of the information they relied on is quite a bit older.

Hydraulic Directional Drilling (HDD) Hazards: HDD is planned for use at several crossings and raises a number of concerns. The Rogue River is known to contain mercury and arsenic from the surrounding soils. The consequences of a frac-out in any location can be significant. If one were to occur at the Rogue crossing near Shady Cove, Oregon, drilling pollutants and the naturally occurring toxic substances could easily find their way into this critical river. Shady Cove is a community of approximately 3,000 residents, most of whom obtain drinking water from private wells. These wells (and many others along the PCGP route) provide the only source of drinking water to residents. There are an estimated 150 wells within a mile of the planned HDD crossing. Several hundred residents obtain drinking water from a private water company that takes water from the Rogue to serve its customers. The Rogue River is also the back-up water supply for the City of Medford. Historically, Shady Cove has had challenges with private wells going dry as the population grew. The aquifer into which private wells are drilled has pockets of water that are interconnected in ways that are difficult, if not impossible, to discern. Drilling or fouling a well in one location could have widespread detrimental effects on wells throughout the system. The Rogue is also home to several species of endangered fish we discuss elsewhere in this comment. Fouling the water of the Rogue and aquifer could have devastating consequences to the drinking water supply and to the local economy which depends on tourism, fishing, rafting and recreation.

Klamath County offers an equally disturbing example of impacts from pipeline activities and an HDD frac-out. Above, we discussed soil contaminants at the Collins Company on the banks of the Klamath River and under a mile from the HDD location for the river crossing. The USACE and DEQ should not consider approving Section 404 and 401 Clean Water Act permits, respectively until a thorough investigation of potential interplay between planned activities and known and unknown potential contaminants has been conducted in any case, but especially given the proximity of a planned HDD crossing. We are uncomfortable with the "self-reporting" approach taken by the Applicant in its "Contaminated Substances Recovery Plan." State agencies are not adequately staffed to conduct monitoring to guard against violations. Responding to degradations with fines and enforcement actions after the fact is not a prudent approach to protect ecosystem services. The critical importance of our water resources and the threats posed by the JCEP are a central reason for our opposition to this project.

Hydrostatic Testing Hazards: All 229 miles of pipeline would need to be tested for integrity and leaks. This would be done by hydrostatic testing, i.e., pumping water at high pressure through a run of pipe segments to check for leaks. The Applicant's plans for the hydrostatic

[40] "Mine Hazards Evaluation and Mercury Testing at the Red Cloud, Mother Lode, Nivinson, and Elkhorn Mining Groups, Jackson and Douglas Counties, Oregon, August 23, 2007." At Appendix R.2 of PCGP FERC application.

discharge structures do not address removal-fill requirements in the construction process. The Applicant proposes to withdraw millions of gallons of water from Oregon waters (including Lake of the Woods, which is protected from water withdrawal by ORS 538.190). It is reasonable to expect that two or more tests could be required in some areas to ensure that the PCGP is leak-free. Some of the water acquired for hydrostatic testing would come from Impaired Waterways and their tributaries. It is also probable that the water table would be significantly impaired, harming wetlands and habitats of endangered species of fish and other animals. The Applicant does not address the impacts of removing such a significant amount of water from Impaired Waterways and their tributaries, such as increased temperature. They are nonspecific regarding the manner and location for removing and returning water used in hydrostatic testing to the watershed. The statement of work includes deliberate contamination with chlorine which will further degrade Oregon's Impaired Waterways and the habitat of endangered species of fish that the State of Oregon has spent so much time, money and commitment to restore.[41]

SECTION 408 (33 U.S.C. 408)

To address their Federal responsibilities with regard to the project, the USACE must consider how the proposed action affects the Federal navigation channel in Coos Bay and Coos River, as well as Federal Dike and multiuse real estate easement within the LNG terminal tank site under 33 U.S.C.408.

The Jordan Cove LNG project proposes to enlarge the Federal Navigation Channel at four locations and the Applicant refers to this as Navigational Reliability Improvements (NRI). The USACE Public Notice states that approximately 700,000 CY of material would be initially dredged to facilitate NRI (p. 4). In their details they account for dredging at four areas. The quantity of sediments indicated by the Applicant in each area does not equal the 700,000 first mentioned, but the quantity adds up to 583,400 as follows: 350,200 CY of sand and soft sandstone at RM 2; 184,000 CY of soft siltstone, sandstone, and sand from an area at RM4.5; an additional 25,200 CY of loose to dense sand to hard sandstone at RM 6; and 24,000 CY of loose to medium dense sand at RM6.8. We are not sure where the remainder of the estimated benthic mass was considered. The method of removal by hydraulic dredging and placement of spoils from these sites includes a complex assembly of pipeline, booster pumps, and positioning within the bay. The Applicant proposes to lay a temporary pipeline along a total distance of ~ 8 miles to the proposed dredge material management area. The removal and disposal of wet sediments will require extensive dewatering, and the project provides no estimate of the proposed methods of dewatering or management of the area where the proposed spoils will be placed. These disposal areas (APCO Sites 1 and 2) are referenced with no clarification of the feasibility of dewatering and moving this quantity of sediment safely to this area at the bend of the bay. Moreover, the Applicant proposes to place future dredged materials during operations that would be part of maintenance of this enlarged Federal Navigation Channel at this same site. The Applicant estimates (p. 7) that maintenance dredging of these areas and other areas of the slip and access channel may yield approximately 37,900 to 49,800 CY every three years. The stability of this area, and the capacity for that area to receive and hold sediments is not considered, and the two sites are surrounded by wetland areas, as well. Has the Applicant considered the potential height of this and how the spoils will be contained and slopes of the placement of the materials? What will happen with storms and rain events on this pile of unconsolidated dredge spoil?

[41] Appendix V.2., p. 16.

The removal with dredging will disrupt the water quality and the natural ecosystem of the sand/silty benthos of the bay. There are considerable areas near the target sites that are index areas for several species of clams and these populations are part of the monitoring program by ODFW (Fig. 1). They report high densities of cockle, gaper, cockle and littleneck clams. In addition to the mollusks, these areas support beds of eelgrass as shown in the Fig. 2 below (p. 18) using data from ODFW in 2014.[42]

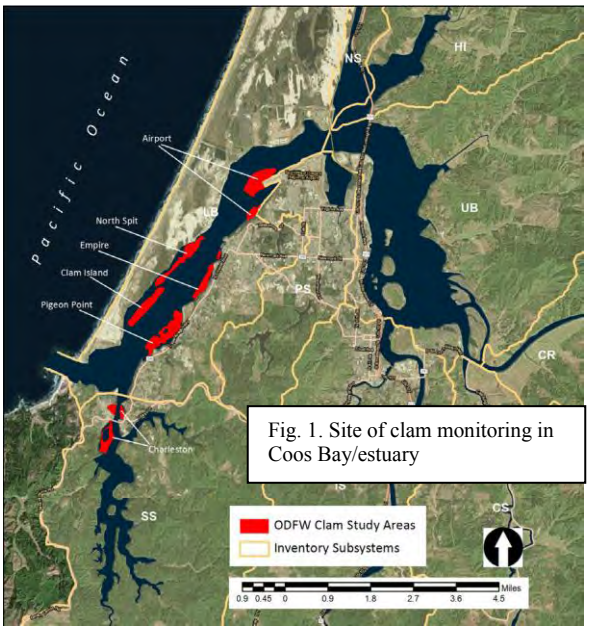

Fig. 1. Site of clam monitoring in Coos Bay/estuary

[42] Oregon Department of Fish and Wildlife (ODFW), "Status of Oregon bay clam fisheries, stock assessment, and research." [Information Report Series draft June 2014]. Oregon Department of Fish and Wildlife Marine Resources Program, 113 pp.

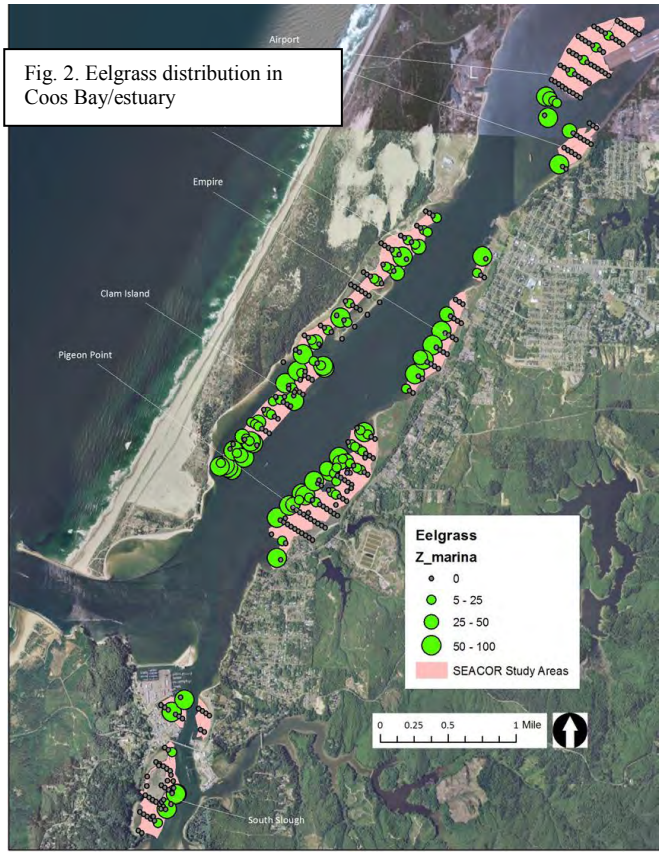

Fig. 2. Eelgrass distribution in Coos Bay/estuary

The vessels used for dredging are not identified, only the size of the pipeline to transfer the mass.

These proposed dredge areas are associated with recreationally harvested species of crabs (Fig. 3 below), as well as areas of migration and temporal feeding of fish species.

Many of the regions that are proposed for dredging are important parts of the food base for fish and wildlife as well as human harvest. The direct impact of habitat disruption and elimination will be substantial, and the cumulative impacts of creating deep water habitats where there were more shallow beds and sandy shoals are not addressed at all. These shallow areas are used for a variety of fish species including flatfish and migrating salmonid smolts.

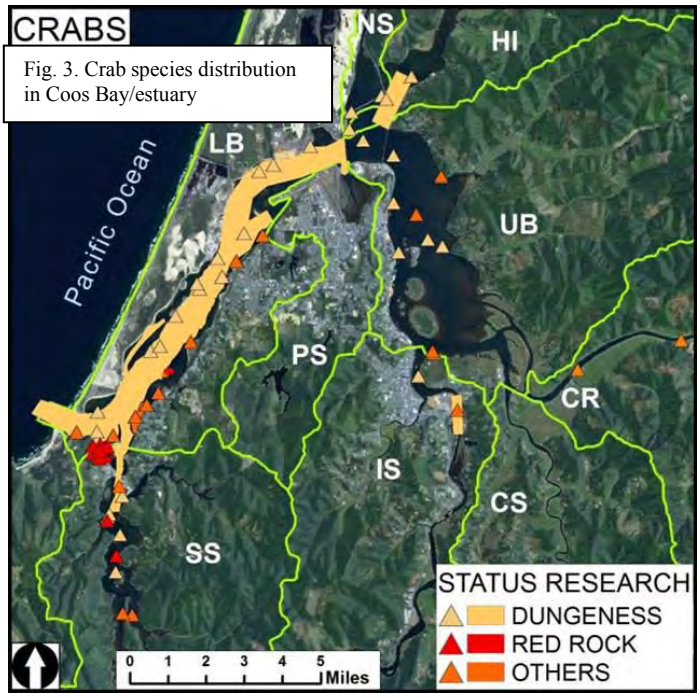

Fig. 3. Crab species distribution in Coos Bay/estuary

MITIGATION

The League's position is to protect air, land, and water resources and prevent water degradation, and thus we are often skeptical of the practice of replacement mitigation. Small projects such as road improvements use culvert improvements nearby the project to offset the need for additional fill. However, a large project such as this is just cause to stop and consider where the benefits and losses are occurring and address alternative approaches and the cumulative effects of the project. If a project like JCEP is allowed via a permit to negatively impact water needed in one place because the Applicant plans to exert a positive impact somewhere else, the disadvantaged area and all who depend on clean, high-quality water in adequate supply still suffer the consequences. We urge the USACE and DEQ to approach the issue of mitigation and Mitigation Plans with extreme caution.

Mitigation for Loss of Wetlands

Two areas in Coos County are addressed as mitigation sites for the loss of wetlands from the entire project of PCGP pipeline and LNG terminal. Those mitigations include a proposed eelgrass mitigation site of 6.03 acres near the airport terminal across the bay from the LNG terminal, and the 100-acre proposed Kentuck mitigation project. Both sites contain wetland values that will be affected or destroyed by the projects. We question why this approach was even considered.

Eelgrass site: Eelgrass beds have an important role in the life cycles of fish, invertebrates and wildlife species. Because eelgrass is a rooted plant, it performs a vital function of stabilizing coastal sediments, preventing erosion. The eelgrass community provides direct and indirect food and cover for many marine species. Because the proposed development permanently destroys 1.9 acres of eelgrass, the developers propose to mitigate this through development of a larger eelgrass habitat across from the project that is currently an estuarine tideflat area south of the western tip of the North Bend Airport runway (Drawings 1, 4, 10, 11). The eelgrass mitigation site chosen already has some eelgrass associated and there are wetland values associated with the mud flats area that is proposed to be altered from its existing slope draining toward the north east (Drawing 12). What about the losses of existing productive habitat that is destroyed to create this new eelgrass area? The proposed removal of sediments to change slope will destroy any biota and infauna in that habitat. What about the eelgrass that is in the mitigation site? Will this be recovered and if so, how? The shape of the structure proposed appears to be more of a pond environment with sharp slopes to a depth of -2 feet below mean tide. Likely that feature would provide a trap for invertebrate or vertebrates with tidal receding. Where will the sediments removed from this be placed? What are the procedures that will be used to change the slope and develop this site? What basis is there for this design? Furthermore, what will be the source of eelgrass used to seed this area as proposed on page 6 of the Public Notice with mention of transplant shoots and plugs from donor sites. Are they going to recover the eelgrass removed from the North Spit area and place it at this location? The biology and habitat requirements and constituents of eelgrass communities is complex and the biologists in the bay have been working to restore and reestablish these communities throughout the bay and estuary. The project needs to consider carefully the cumulative effects of destruction of eelgrass and how restoration practices should be accomplished using a careful scientific approach.

According to the recent documentation provided by the Partnership for Coastal Waters Data Sources in their Chapter 13: Clams and Native Oysters in the Coos Estuary, the area of the mitigation site near the airport is adjacent to an area with native oysters and clams (Fig. 4).

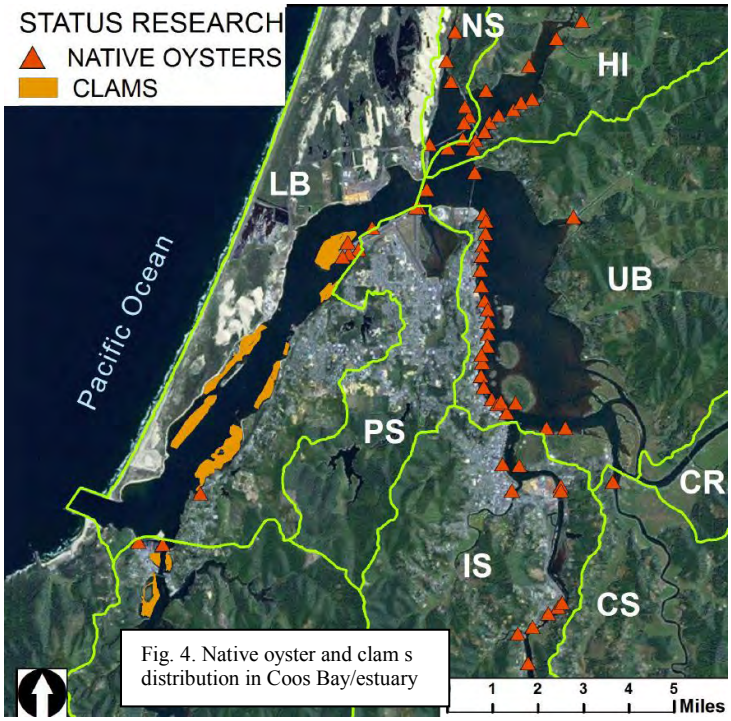

Fig. 4. Native oyster and clam s distribution in Coos Bay/estuary

Kentuck inlet: The mitigation project at Kentuck has been proposed as a way to dispose of massive quantities (300,000 CY) of unconsolidated sand and silty sand sediments from dredging operations in the Coos Bay areas, but also as wetland mitigation for the loss of all wetlands throughout the disruption of wetland, riparian and associated areas as a result of the 229-mile pipeline project across the state. The mitigation put forth in the Public Notice contains no discussions of alternatives to this approach for the project or any other potential mitigation along the pipeline swath. Moreover, the Kentuck site already has substantial existing freshwater wetland values in this palustrine wetland/forest and its vegetative cover is used by migratory and resident wildlife and game, and associated hydrological values. Where is the actual accounting of wetland loss and gain with this proposal? The eelgrass mitigation project at least proposes (p. 6) to provide a mitigation ratio of 3:1 to create 6 acres of eelgrass near the airport within a 9.3-acre site to replace the 1.9 acres of eelgrass destroyed on the north spit. Where is the accounting for this proposed freshwater/estuarine wetland?

The concept of reconnecting Kentuck Creek and slough within the Kentuck watershed to provide a wider wetland area rather than the narrow corridor that exists is a reasonable proposal, but the methods and design of the project fail to capture the full potential of this mitigation opportunity to further upstream mitigation. The fill of 4.3 acres proposed through construction of a high elevation dike or permanent levee around the area is not clear. The Applicant should provide the rationale for the need to reconstruct the dike and impact these wetlands to accomplish a re-connection of this area with the waterway. The Public Notice indicates that the project will be re-graded to allow for re-connection of water flow and distribution (Drawings 14015), but no details are provided as to how this activity will be done. If this change in slopes were to be accomplished using dredge materials, there are significant differences between the sediments from the dredge material and those of the existing wetlands they are altering and reconnecting. There are other confusing components of the proposal such as the new levee approximately 50-foot wide and 1,100-foot long across the NW portion of the Kentuck Project site (Drawing 15). This proposed action appears to be coupled with a plan to

remove an approximately 1,500-foot long segment of the existing Kentuck levee upstream from the proposed new levee (Drawing 15). The Public Notice does not provide any rationale for this proposed action.

Moreover, the entire project poses a large risk from transporting the dredge material across the bay and navigation channel via scow, then through the temporary dredge transfer line, and then hydraulically pumped to the Kentuck mitigation site. There are no details for the protection of water resources during this activity, and a total absence of consideration of alternative sites or methods. The Public Notice (p. 4) states sediments destined for the Kentuck Project site will be transported using scows that will be moved to a location east of the Coos Bay Channel and the sediments on the scows will then be hydraulically pumped to the Kentuck mitigation site via a 1.3-plus mile-long pipeline. The pipeline route will traverse intertidal and shallow sub tidal portions of the estuary between the Coos Bay Channel and the Kentuck Project Site (Drawing 1). The lack of details and inherent risks of water movement and pipelines poses threats to any of the resource values in the region of the transfer. There are mariculture operations in the bay area nearby the Kentuck Inlet, and other fish and shellfish habitats and other wildlife habitats that can be affected by disruptions associated with transfer and logistics of sediment movement and dewatering.

SAFETY ISSUES AND CUMULATIVE IMPACTS

Finally, we address several safety and cumulative environmental aspects of the project proposal of concern to the League of Women Voters that appear to lack sufficient detail regarding management and consideration.

Pipeline Accidents: It is a well-documented fact that pipelines leak methane, a potent greenhouse gas and pipeline accidents occur, as well. An estimated $1.1 billion worth of natural gas (17.55 billion cubic feet) leaked from pipelines in the U.S. between 2010 and 2017, contributing global warming potential equal to that of a coal-fired power plant operating for a year. During that same period, pipeline incidents resulted in almost 100 deaths, injured 500, and forced the evacuation of thousands of people.[43] The fact that almost the entire 229-mile PCGP will be built to Class I standards in terms of pipe gauge and weld standards increases the risks of leaks, explosions, and gas fires which may also spread to structures and ignite wildfires. The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) reported in a letter to Congress in 2013 on a variety of scenarios that raise the likelihood of pipeline incidents, several of which match the Applicant's pipeline construction and routing plans.[44]

The PHMSA letter stated that "Hazardous liquid pipeline operators reported 5,094 accidents from 1991 to 2009 and 2,653 exceeded PHMSA's significant incident threshold. The PHMSA determined that 13 accidents from this time period occurred at inland water crossings. All 13 failures exceeded PHMSA's significant incident threshold. . . . A depletion of cover, sometimes in the waterway and other times in new channels cut by flood waters, has been a factor in all 13 of these failures." Applicant's project anticipates almost 500 stream crossings.[45] The PHMSA Report goes on to identify that one incident occurred in a buried pipeline water crossing that had

[43] Jonathan Thompson, "A map of $1.1 billion in natural gas pipeline leaks," *High Country News,* November 29, 2017.
[44] U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration to U.S. Congress, August 27, 2013.
[45] Ibid., p. 7.

a defective weld. Two incidents resulted from internal corrosion, one was caused by scouring during flooding, and two were caused by failures at the girth weld as a result of external loading caused by exposure to flood conditions.[46] The 36-inch pipeline proposed by Applicant will have thousands of such welds, all of which will be installed at the lowest allowable standard (Class 1), making each weld more susceptible to failure.

Geological and seismic attributes: The Cascadia Subduction Zone in which the JCEP is proposed to be constructed must be seriously considered in evaluation of this project. Regarding the PCGP, Steve Barlett, Associate Professor of Civil Engineering at the University of Utah, stated, "If an earthquake occurs, high-pressure gas lines are one of the most important items to protect. If they rupture and ignite, you essentially have a large blowtorch, which is catastrophic." He noted that pipelines are generally installed to withstand some ground movement, but cannot withstand extreme shaking and instantaneous impacts such as drops of earth of several feet that are characteristic of major earthquakes. [47]

The Coos Bay/ Pacific Ocean adjacent to the Bay is an area that has active seismic events. A summary of those that have occurred between 1969 and 2015 is provided in Fig. 5, left as detailed in the "Physical Description in the Coos Estuary and the Lower Coos Watershed."[48]

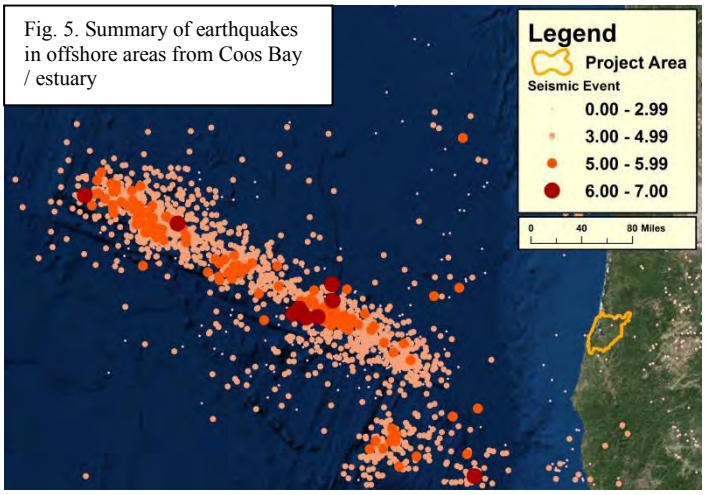

Fig. 5. Summary of earthquakes in offshore areas from Coos Bay / estuary

The bay itself has several faults as shown in the map below. Some have triggered significant earthquakes of 6.0 or more. One fault in particular is located at the proposed location of the LNG facility at Jordan Cove (Fig. 6).

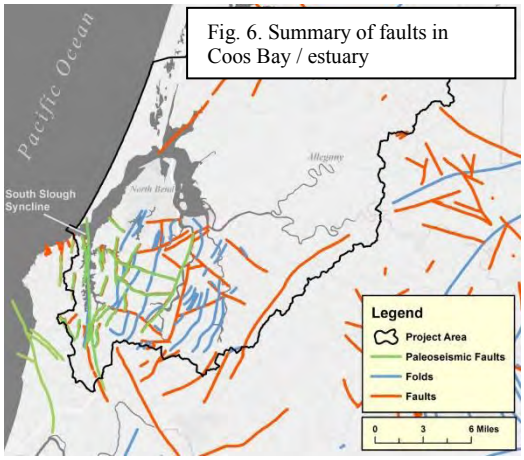

Fig. 6. Summary of faults in Coos Bay / estuary

The underlying geology of the Coos estuary and surrounding watershed results from the tectonic interactions between the Pacific, Gorda, Juan de Fuca, and North American (i.e., North American continent) tectonic plates, and oceanic spreading from two ridges (Juan de Fuca and Gorda) as detailed by Rumrill (2006)[49]. Along the Oregon coast, pressure from these tectonic movements of the earth's crust have resulted in the folded and warped outer continental shelf margin and cycles of long term, incremental uplift of the coastal lands followed by rapid subsidence events as earthquakes.

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[46] Ibid., p. 8.
[47] U News Center, University of Utah, "Protecting Pipelines from Earthquakes," October 2, 2012.
[48] http://www.partnershipforcoastalwatersheds.org/
[49] Rumrill, S. 2006. *Ecology of the South Slough Estuary: Site profile of the South Slough National Estuarine Research Reserve*, South Slough National Estuarine Research Reserve, 259 pp.

According to Brad Avey, Director and State Geologist, Oregon Department of Geology and Mineral Industries (DOGAMI), Resource Report 6 - Geological Resources (of the FERC application) is incomplete. Mr. Avey submitted his comprehensive comments to the Department of Energy on November 6, 2017.[50] His letter outlines 51 individual substantive concerns about information and design deficiencies. It does not appear that the Applicant has responded to date. The same version of the Report Mr. Avey would have reviewed (September 2017) is posted at the company website without update. Appendixes Mr. Avey indicated were missing at the time are still not available. Although we are not geologists, our review of Mr. Avey's letter reveals even very basic deficiencies such as consistent reliance on outdated scientific information, a problem we have observed in other areas of the application, as well. We urge the USACE to ensure that all information necessary to assess important safety and matters such as essential seismic concerns is available, complete, and that issues are adequately addressed before any permits governed by the Public Interest Review are issued.

Access to and from of the Coos Bay and Estuary by vessels and air traffic: Additional constraints regarding access of the proposed facility are of concern as the project is situated on the outside corner of a bend in a navigation channel that supports large deep draft vessel traffic upstream from the proposed facility. The entrance to the bay and navigation channel from open waters has a history of problems since the time of early navigation into the bay due to the nature of shore winds, and sea conditions; these problems continue to the present. There is a 90-degree turn from the entrance into the bay, and then another bend near the proposed site that other ship traffic, including commercial and recreational uses, must navigate past to enter the Coos Bay, North Bend harbor.

The Southwest Oregon Regional Airport that serves the greater Coos Bay/North Bend area is a short distance across the bay from the proposed LNG facility. The flight approach varies with weather, but often the approach is over the bay and north spit area. Commercial flights from San Francisco, Denver occur regularly, and the airport is waiting to hear about a potential grant to restore regular commercial service to Portland. In addition, there is a large number of general aviation flights and freight activities as well as Coast Guard operations that occur at the airport each day. What sorts of safety measures will be in place for flights and flyways after construction and operation of the facility?

Derelict infrastructure and potential for partial completion of projects: There is concern of the potential environmental and human risk of partially completed projects, if there were construction, and unforeseen events that caused for abandonment of the facility or any of the infrastructure to and from the terminal including the pipelines. What would result if any stage of the project were abandoned, and who would assume the risk and responsibility of containment or removal?

IN CONCLUSION

It is essential that USACE, DEQ, and other state and federal agencies conduct comprehensive and collaborative reviews of the potential impacts of the proposed PCGPL project to fully assess whether or not the proposed project complies with the federal Clean Water Act and all other applicable state and federal standards and permitting requirements. Moreover, the League of Women Voters at all levels believes that democratic government depends upon the informed and active participation of its citizens. This requires that governmental bodies protect the people's right to know by giving adequate notice of proposed actions, making public records

[50] Brad Avey, DOGAMI to Sean Mole, Oregon Department of Energy, November 6, 2017.

accessible, and providing adequate and appropriate opportunities for the public to provide input on matters that will affect them. We respectfully request that the USACE and DEQ consider holding public hearings in at least the four counties that will be impacted directly by the JCEP. We request this input option to ensure that people who find offering their comments verbally more effective than Internet-based or in writing are able to do so. Hearing sites should be selected so that they are in close proximity to project activities to allow participation by those who would be most heavily impacted. Given that major impacts of the proposed project would have significant relevance to all Oregonians, we request that at least one public hearing be held in each of the northern and eastern parts of the state.

The League of Women Voters is a volunteer organization without any motive other than to work for the best interest of all our citizens. Thank you for accepting and considering our thoughts and concerns and thank you for your service.

Sincerely,

Susan Thornton, President, League of Women Voters of Coos County
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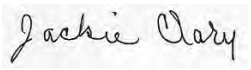

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Douglas County Commissioners Chris Boice, Tim Freeman
Jackson County Commissioners Rick Dyer, Colleen Roberts, Bob Strosser
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