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U.S. Army Corps of Engineers, Regulatory Branch
Attn: Melody White
Post Office Box 2946
Portland, OR 97208-2946

Sent Via Email to: Melody.J.White@usace.army.mil.

RE: Comments on NWP-2014-177/2 (Kalama Manufacturing and Marine Export Facility) and NWP-2015-111 (Kalama Lateral Project).

Dear Ms. White,

Columbia Riverkeeper ("Riverkeeper") submits these comments to the U.S. Army Corps of Engineers ("Corps") regarding the Joint Public Notice ("JPN") for NWP-2014-177/2, the Kalama Manufacturing and Marine Export Facility (hereinafter, "the methanol refinery"), and NWP-2015-111, the Kalama Lateral Project (hereinafter, "the pipeline"). Riverkeeper's comments relate to the Corps' responsibilities and decisions under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and the National Environmental Policy Act ("NEPA").

Riverkeeper is a nonprofit public interest group with approximately 8,000 members and supporters working to protect and restore the water quality of the Columbia River and all life connected to it, from the headwaters to the Pacific Ocean. To achieve these objectives, Riverkeeper operates scientific, educational, and advocacy programs aimed at protecting water quality and habitat in the Columbia River Basin. Riverkeeper's members and supporters fish, boat, swim, work, and live in and along the Columbia River near and downstream from Kalama, the location of NWIW's proposed methanol refinery and export terminal.

Riverkeeper is concerned by Northwest Innovation Works LLC's ("NWIW") plans to construct a 90-acre methanol refinery, export terminal, pipeline, and associated facilities in and along the lower Columbia River. NWIW requires the authorizations described in the JPN in order to construct and operate its project. NWIW's proposed methanol refinery is the latest in a disturbing trend of fossil fuel export terminals that would industrialize and pollute the lower Columbia River. For the reasons explained below, Riverkeeper requests that the Corps prepare a full Environmental Impact Statement ("EIS") detailing the significant direct, indirect, and cumulative impacts of the proposed new berth, methanol refinery, and pipeline. Riverkeeper also asserts that the activities described in the JPN do not comply with Section 404 of the Clean Water Act and, in the case of NWP-2014-177/2, Section 10 of the Rivers and Harbors Act.

1. THE COLUMBIA RIVER ESTUARY.

NWIW proposes building a methanol refinery and export terminal in the Columbia River estuary, an area at the center of a regional and national effort to restore endangered and threatened salmonids. This effort includes the Corps' obligations under the Federal Columbia River Power System ("FCRPS") Biological Opinion ("BiOp"). The Columbia River estuary is a federally-designated Estuary of National Significance under the Clean Water Act's National Estuary Program.¹ In 2006, the U.S. Environmental Protection Agency ("EPA") designated the Columbia River as one of seven Priority Large Aquatic Ecosystems.² The Columbia River estuary is an "ecologically critical area," 40 C.F.R. § 1508.27(b)(3), that is essential to the survival juvenile salmon and steelhead, waterfowl, and many other species.³

Public and private entities have invested billions of dollars to restore endangered and threatened salmonids in the Columbia River Basin.⁴ This includes significant investment in riparian and wetland restoration projects in the estuary. The National Marine Fisheries Service ("NMFS") has described the ecological value of the Columbia River estuary, stating:

"The lower Columbia River estuary provides vital habitat for anadromous salmonids throughout the Columbia River basin, and is of particular importance from a threatened and endangered species recovery perspective. The estuary is designated as critical habitat for 17 species of ESA-listed fish and EFH [Essential Fish Habitat] for Pacific salmon."

The federal government has funded—and will continue to fund for the foreseeable future—a significant portion of the salmon restoration efforts in the Columbia River estuary. NWIW's project would compromise this investment in order to ship fracked North American natural gas overseas as methanol.

2. NEPA REQUIRES THE CORPS TO PREPARE AN EIS.

The National Environmental Policy Act ("NEPA") is America's basic "charter for protection of the environment." 40 C.F.R. § 1500.1(a). NEPA serves two purposes: it (1) ensures that the agency will carefully consider detailed information concerning significant

¹ U.S. Environmental Protection Agency (EPA), National Estuary Program in Region 10 (online at: <http://yosemite.epa.gov/R10/ECOCOMM.NSF/6da048b9966d22518825662d00729a35/c7a2ab5e252f309688256fb600779ea6!OpenDocument>).

² EPA, *Columbia River Basin: State of the River Report for Toxics* (Jan. 2009) (online at: http://www2.epa.gov/sites/production/files/documents/columbia_state_of_the_river_report_jan2009.pdf).

³ NMFS, *Columbia River Estuary ESA Recovery Plan Module for Salmon and Steelhead* (2011); Fresh *et al.*, *NOAA Technical Memorandum NMFS-NWFSC-69: Role of the Estuary in the Recovery of Columbia River Basin Salmon and Steelhead* (2005); 78 Fed. Reg. 2,726 (Jan. 14, 2013) (*Proposed Critical Habitat Designation for Lower Columbia Coho Salmon*).

⁴ Thom, R. *et al.*, *Columbia River Estuary Ecosystem Restoration Program, 2012 Synthesis Memorandum* (Jan. 2013).

environmental impacts of the proposed project, and (2) “guarantees that the relevant information will be made available” so that the public may play a role in the decision-making process. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). By focusing attention on the environmental consequences of proposed actions, NEPA “ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast.” *Id.* An EIS is fundamental for the public, tribes, and state and federal agencies to understand a proposed project’s impact on the environment and public health.

a. The Corps’ NEPA analysis must consider all direct, indirect, and cumulative impacts of NWIW’s terminal, refinery, and pipeline.

The Council on Environmental Quality’s (“CEQ”) regulations governing the scope of NEPA analyses require agencies like the Corps to analyze the direct, indirect, and cumulative impacts of each proposed action. 40 C.F.R. § 1508.25(c). The Project’s direct impacts are generally those that will result from the construction, maintenance, and use of the structures—pipeline, dock, and collector well—over which the Corps has permitting authority.

The Corps’ NEPA document must address the indirect impacts of the pipeline and berth, including the impacts resulting from the construction and operation of the methanol refinery and the procurement and sale of North American natural gas to the refinery. 40 C.F.R. § 1508.25(c)(2). Indirect effects, for NEPA purposes, are those 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(b) (emphasis added). Indirect effects include the ways that human use of an area changes as a result of the proposed action, and the consequential effects of those changed uses on air, water, and ecosystems. *Id.* The reasonably foreseeable indirect impacts of NWIW’s proposal to refine North American natural gas into methanol for export to Asia include:

- Construction and operation of the 90-acre methanol facility at the Port of Kalama and associated air and water pollution that will result;
- Increased Panamax vessel traffic in the Columbia River and Pacific Ocean and associated impacts on salmon habitat, marine mammals, and river users;
- Greenhouse gas emissions and other impacts associated with generating and delivering the electricity that the refinery would use;
- Increased hydraulic fracking to extract natural gas and associated impacts to water quality and quantity, habitat destruction and fragmentation, and greenhouse gas emissions from leaking natural gas during extraction, and;
- Increased domestic natural gas and electricity prices due to decreases in natural gas supply.

Accordingly, the Corps' NEPA review must address these reasonably foreseeable impacts of NWIW's proposal to refine and export methanol.

The Corps must also explain the cumulative environmental impacts of this project *and* the numerous other fossil fuel shipping projects proposed in the Columbia River Estuary. The CEQ's regulations require the Corps to analyze the cumulative environmental impact of each proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. 40 C.F.R. §§ 1508.7, 1508.25(c)(3). In recent years, various companies have proposed or begun shipping fossil fuels—including crude oil, coal, methanol, liquefied propane gas ("LPG"), and liquefied natural gas ("LNG")—through the Columbia River Estuary. These projects include, but are not limited to:

- Global Partners' shipments of Bakken crude oil from the expanded Port Westward dock;
- Ambre Energy's proposed Morrow Pacific Project to export coal;⁵
- Tesoro-Savage's proposal to construct and operate a very large crude oil terminal at Vancouver, Washington;⁶
- NuStar Energy's proposal to construct and operate crude oil terminal at Vancouver, Washington;
- Millennium Bulk Terminal's proposed coal export terminal at Longview, Washington;⁷
- Oregon LNG's proposed LNG export terminal at Warrenton, Oregon;⁸
- Waterside Energy's proposal to build a crude oil refinery at Longview, Washington;
- Waterside Energy's proposal to build an LPG export terminal at Longview, Washington;
- NWIW's proposal to construct a methanol refinery at Port Westward, Oregon, that would be largely identical to the proposed refinery at Kalama.⁹

⁵ See Section II, *supra*.

⁶ The Columbian, *Port of Vancouver runs afoul of meetings law* (July 30, 2013) (online at: <http://www.columbian.com/news/2013/jul/30/vancouver-port-meetings-law-oil-terminal-tesoro/>).

⁷ Letter from Millennium Bulk Terminals LLC to the Corps (Feb. 13, 2012) (online at: <http://millenniumbulk.com/wp-content/uploads/2012/05/February-13-2012-Letter-to-Michelle-Walker.pdf>).

⁸ 77 Fed. Reg. 59,603 (September 28, 2012) (FERC notice of intent to prepare an EIS for Oregon LNG's proposed LNG export project.).

⁹ See Port of St. Helens, *Resolution 2014-13* (February 12, 2014) (Authorizing a lease option agreement for property at Port Westward with NWIW).

All of these projects are either presently occurring or reasonably foreseeable, and all have the potential to impact the Columbia River in similar ways. Accordingly, NEPA compels the Corps to assess and describe the cumulative impact that all of these fossil fuel shipping activities would have on the Columbia River.

Riverkeeper recognizes that the Port of Kalama and Cowlitz County are compiling an EIS for the methanol refinery pursuant to Washington's State Environmental Policy Act ("SEPA"). See RCW 43.21C.030(c). The information and analyses in the SEPA EIS may be useful to the Corps when preparing the Corps' NEPA document. However, the Port and County's review does not replace the Corps obligation under federal law to produce a single NEPA document that discusses and discloses the full range of impacts that would occur as a result of NWIW's proposal.

Riverkeeper is also aware that the Federal Energy Regulatory Commission ("FERC") has prepared and published a NEPA Environmental Assessment ("EA") and recommended Finding of No Significant Impact ("FONSI") for the pipeline over which FERC has primary regulatory authority. Riverkeeper is not asking the Corps to re-do analyses conducted by FERC, and relying on information contained in the pipeline EA may be appropriate. Riverkeeper strongly disagrees, however, with the FERC's use of an EA/FONSI to authorize the pipeline. The pipeline's indirect and cumulative impacts are extensive, and the fact that FERC largely ignored those impacts will not excuse the Corps from addressing them in the Corps' NEPA document.

b. The Corps must prepare an Environmental Impact Statement to evaluate the environmental impacts of the methanol refinery and export project.

An EIS is the appropriate way to study and describe the significant and far-reaching impacts of NWIW's proposal. An agency must prepare an EIS when substantial questions exist about whether the proposed project "may" significantly degrade the environment. *Native Ecosystems Council v. U.S. Forest Service*, 428 F.3d 1233, 1239 (9th Cir. 2005) (emphasis in original); see also 42 U.S.C. § 4332(2)(C). "This is a low standard." *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549, 562 (9th Cir. 2006); *California Wilderness Coalition v. U.S.*, 631 F.3d 1072, 1097 (9th Cir. 2011).

The CEQ's NEPA regulations contain ten 'intensity' factors that the Corps must consider when evaluating whether a project's impacts may be significant, requiring an EIS. 40 C.F.R. § 1508.27(b); *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 361 F.3d 1108, 1124 (9th Cir. 2004). These factors include:

- The degree to which the proposed action affects public health or safety. 40 C.F.R. § 1508.27(b)(2).

- The unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. 40 C.F.R. § 1508.27(b)(3).
- Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. 40 C.F.R. § 1508.27(b)(7).
- The degree to which the action may cause loss or destruction of significant scientific, cultural, or historical resources. 40 C.F.R. § 1508.27(b)(8).
- The degree to which the action may adversely affect an endangered or threatened species or its designated critical habitat. 40 C.F.R. § 1508.27(b)(9).
- Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment. 40 C.F.R. § 1508.27(b)(10).

40 C.F.R. § 1508.27(b). As explained below, these factors apply to methanol refining, terminal construction, and shipping in the Columbia River Estuary. The presence of just one of these factors may compel the preparation of an EIS. *Ocean Advocates v. U.S. Army Corps of Engineers*, 402 F.3d 846, 865 (9th Cir. 2005).

i. Impacts are ‘significant’ because the proposed action affects public health and safety to a high degree.

The Corps should prepare an EIS because the direct, indirect, and cumulative impacts of this proposal would significantly affect public health and safety. CEQ’s second ‘intensity’ factors is “[t]he degree to which the proposed action affects public health or safety.” 40 C.F.R. § 1508.27(b)(2).

The direct impact of the proposal with the most immediate threat to public safety is the construction of a 24-inch high-pressure gas pipeline line through residential areas, farms, and under Interstate 5. Pressurized natural gas is flammable and explosive. The proposed pipeline would run within one or two hundred feet of several homes, and the Mt. Pleasant Cemetery.

The indirect impacts of the proposal on human health and safety include air and water pollution from the refinery,¹⁰ as well as water pollution associated with increased fracking to supply the terminal with natural gas. Increased vessel traffic from this project and others like it would also subject workers and local residents to dangerous air pollution from immense Panamax-class vessels.¹¹

¹⁰ Washington state agencies have not drafted air or water permits or SEPA documents for the refinery. The Corps’ EIS must nevertheless explain what air and water pollution will occur.

¹¹ See Section 4.c, *infra*.

The indirect and cumulative impacts of this proposal on human health and safety include the effects of global warming, discussed at Section 4.k, below.

ii. *Impacts are ‘significant’ because the project may adversely affect the Columbia River Estuary’s unique ecological, cultural, and historic resources.*

The Corps should prepare an EIS because the project could devastate the Columbia River Estuary and its unique ecological and cultural resources. CEQ’s third and eighth ‘intensity’ factors counsel in favor of preparing an EIS when the proposed project would negatively impact unique ecological, cultural, or historic resources. 40 C.F.R. § 1508.27(b)(3), (8). Specifically, intensity factor three contemplates an EIS when a project is proposed in an area close “to historic or cultural resources, park lands, prime farmlands, wetlands, . . . or ecologically critical areas.” 40 C.F.R. § 1508.27(b)(3). Similarly, intensity factor eight considers the degree to which the proposed project “may cause loss or destruction of significant scientific, cultural, or historical resources.” 40 C.F.R. § 1508.27(b)(8). Building and operating a pipeline, methanol refinery, and new dock in the midst of the Columbia River Estuary’s unique ecological, social, and cultural resources deserves analysis in an EIS.

The Columbia River supports a vibrant tradition of subsistence, commercial, and sport salmon fishing. Salmon fishing in the estuary and lower Columbia River is a cultural and economic practice with a rich history reaching back many generations. Building a massive new dock and increasing Panamax-class vessel transit will degrade important salmon habitat and disrupt fishing practices, damaging these significant cultural and historical resources. The Corps should therefore use an EIS to analyze the impacts of dock construction and Panamax ship traffic on salmon and salmon fishing in the lower Columbia. 40 C.F.R. §§ 1508.27(b)(3) & (8).

The lower Columbia River and estuary is an “ecologically critical area,” 40 C.F.R. § 1508.27(b)(3), that is essential to the survival juvenile salmon and steelhead, waterfowl, and many other species.¹² The lower river is lined with wetlands, riparian areas, and park lands¹³ which could all be impacted by increased vessel traffic or invasive species brought in by methanol tankers. Further, a fuel oil spill at the dock, or from a Panamax vessel in the river, could devastate the ecologically critical areas downstream and upstream from Kalama. Before subjecting the unique and irreplaceable Columbia River Estuary to these threats, the Corps should analyze the potential impacts in an EIS. 40 C.F.R. §§ 1508.27(b)(3) & (8).

¹² NMFS, *Columbia River Estuary ESA Recovery Plan Module for Salmon and Steelhead* (2011); Fresh *et al.*, *NOAA Technical Memorandum NMFS-NWFSC-69: Role of the Estuary in the Recovery of Columbia River Basin Salmon and Steelhead* (2005); 78 Fed. Reg. 2,726 (January 14, 2013) (Proposed Critical Habitat Designation for Lower Columbia Coho Salmon).

¹³ *E.g.* Julia Butler Hansen Refuge for the Columbian White-Tailed Deer, Lewis and Clark National Wildlife Refuge.

The pipeline aspect of the project would also disrupt 18.4 acres of prime farm lands in the Kalama area, roughly from Milepost 2.4 to 2.8.¹⁴ FERC's EA downplays the impacts to prime farmland. But FERC's ignores the likelihood that this prime farmland—like much of the farmland along the lower Columbia—contains a system of underground drainage tiles and pipes. Using trenching or HDD to bring a large natural gas pipeline through an area containing an underground drainage system could be massively disruptive to this area of prime farmland.

iii. *The cumulative impact of this project and other, similar projects is 'significant.'*

NWIW's proposed methanol refinery is just one of many proposed and existing fossil fuels shipping projects in the Columbia River. Even if the Corps somehow concludes that the direct and indirect impacts of constructing and operating the dock, methanol refinery, pipeline were not 'significant' for NEPA purposes, the cumulative impact of NWIW's proposal and all of the similar proposals along the Columbia River is undoubtedly significant. CEQ's seventh 'intensity' factor directs agencies to prepare an EIS when the cumulative impacts of a proposed project would be significant. 40 C.F.R. § 1508.27(b)(7). As explained in Section 2.a. above, there are numerous proposals for crude oil, coal, methanol, LPG, and LNG shipping in the lower Columbia. Cumulatively, these projects would drastically increase the shipping traffic on the Columbia River, in- and over-water construction in the Columbia, dredging in the Columbia, greenhouse gas emissions, and the probability of an accident or spill in the Columbia River. These projects would also cumulatively harm to U.S. energy independence goals, increase domestic energy prices, and further weaken the U.S. manufacturing sector's ability to compete with foreign manufacturing. Taken together, the impact of all those projects in addition to NWIW's proposal will result in a cumulatively significant impact on the human environment in the lower Columbia.

The EIS cannot ignore the cumulative contribution of this project, and others like it, to climate change. NEPA requires a quantification of the "incremental impact[s] that [the proposed project's] emissions will have on climate change ... in light of other past, present, and reasonably foreseeable actions." *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008); *see also Center for Biological Diversity v. National Highway Traffic Safety Administration*, 508 F.3d 508, 550 (9th Cir. 2007) ("The impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct."). Even if NWIW's project has an "individually minor" effect on the environment—which it probably does not—it and other similar projects are "collectively significant actions taking place over a period of time" that contribute significantly to climate change. 40 C.F.R. § 1508.7. NEPA requires analysis of the "actual environmental effects" resulting from those cumulative emissions. *Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1216 (9th Cir. 2008).

¹⁴ See FERC, *EA for the Kalama Lateral Project*, Docket No. CP15-8-000, p.30 (July 2015).

Accordingly, the Corps must quantify and evaluate, in an EIS, the cumulative and incremental effects of climate change resulting from NWIW's proposal along with the effects of other fossil fuels shipping projects currently proposed and operating along the Columbia.

iv. Impacts are 'significant' because the project is likely to adversely affect threatened and endangered species.

The Corps should prepare an EIS because the project may seriously impact threatened or endangered species. CEQ's ninth 'intensity' factor favors the preparation of an EIS when a proposed project would substantially adversely affect an endangered or threatened species or its designated critical habitat. 40 C.F.R. § 1508.27(b)(9). The project has the potential to harm listed species of salmon and steelhead that rely on a healthy estuary environment for rearing and migration.

Multiple studies and publications have identified shallow-water and off-channel habitats in the Lower Columbia River and Estuary as vitally important for salmonid rearing and species recovery.¹⁵ Development or destruction of shallow-water habitats, and the construction of over-water structures like piers and docks, has significantly degraded the lower Columbia River's ability to support juvenile salmonids.¹⁶ Most recently, the NMFS issued a BiOp to the Corps on dock construction at Port Westward, Oregon.¹⁷ Although NWIW's proposed dock would be much larger than the Port Westward dock expansion, and entail significant dredging, that BiOp contains significant, current information about the impacts of dock construction and Panamax-class vessel traffic on endangered salmon.

Increased Panamax vessel traffic could lead to the wake-stranding, and death, of endangered juvenile salmonids, which frequent shallow, near-shore habitats in the estuary. Additionally, a fuel oil spill at the dock or elsewhere could negatively impact the estuary's salmon habitat. Along with ESA consultation, an EIS is the proper analytical tool to discuss the risks to threatened salmon and steelhead posed by this project.

v. The Corps should prepare an EIS because the proposal threatens to violate Federal laws protecting the environment.

NWIW's proposal for major new industrial development in and near the Columbia River may run afoul of federal environmental laws, including the Clean Water Act, the Rivers and Harbors Act, and the Endangered Species Act. An EIS is the appropriate analytical tool when a project's impacts are significant enough that the project threatens to violate a federal law imposed for the protection of the environment. 40 C.F.R. § 1508.27(b)(10). For instance,

¹⁵ See Note 12, *supra*.

¹⁶ *Id.*

¹⁷ See NMFS, *Endangered Species Act Biological Opinion for the Columbia Pacific Bio-Refinery Barge Dock Expansion* (June 8, 2015).

constructing a new 44,943 square-foot dock, increasing Panamax-class vessel traffic, and dredging 16 acres of the lower Columbia River may cause “take” of threatened or endangered salmon and steelhead in violation of Section 9 of the Endangered Species Act and may cause adverse modification of designated critical habitat in violation of Section 7 of the Endangered Species Act. Additionally, the project may violate the Clean Water Act Section 404(b)(1) guidelines’ requirement if there is a practicable alternative to the proposed discharge that would have a less adverse effect on the aquatic ecosystem—for instance, using or expanding the existing dock just upriver from the proposed new dock. *See* 40 C.F.R. § 230.12(a)(3)(i). Whether or not the Corps ultimately determines that NWIW’s proposal would violate a federal environmental law, the project nevertheless presents a close question on this issue. Therefore, the proposal’s serious impacts to the Columbia River ‘threaten’ to violate laws imposed for the protection of the environment within the meaning of 40 C.F.R. § 1508.27(b)(10), and the Corps should prepare an EIS.

3. NWIW’S PROJECT FAILS TO COMPLY WITH THE 404(b)(1) GUIDELINES.

The purpose of the Clean Water Act, 33 U.S.C. § 1251 *et seq.*, is to restore and maintain the chemical, physical, and biological integrity of waters of the United States. Section 404 of the Clean Water Act prohibits dredging or discharging fill material in a U.S. water without a permit from the Corps. 33 U.S.C. § 1344. The Environmental Protection Agency has promulgated regulations, called the “404 Guidelines,” that govern how the Corps issues Section 404 permits program. *See* 40 C.F.R. §§ 230.1–230.80.

The 404 Guidelines provide that “dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern.” 40 C.F.R. § 230.1(c). For the reasons described in Section 4, below, the discharges of dredged and fill material contemplated by NWIW’s project would have an “unacceptable adverse impact” on the Columbia River ecosystem within the meaning of 40 C.F.R. § 230.1(c). The Corps must therefore deny Section 404 permit applications.

There appear to be less environmentally damaging alternatives to the massive dock and dredging project that NWIW, through the Port of Kalama, has proposed. The 404 Guidelines prohibit the Corps from issuing any permit “if there is a practicable alternative . . . which would have less adverse impact on the aquatic ecosystem.” 40 C.F.R. § 230.10(a). An alternative is “practicable” if it is “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” 40 C.F.R. § 230.10(a)(2). The permit applicant—not the Corps or public commenters—has the legal burden to explain why there are no practicable alternatives to the proposed action with less adverse impacts on the aquatic ecosystem. *Northwest Environmental Defense Center v. Wood*, 947 F. Supp. 1371, 1374

(D. Or. 1996). Failure to adequately explain why there are not practical alternatives with less adverse environmental impacts is grounds for a court to void the 404 permit.

While it is not Riverkeeper's duty to do so, Riverkeeper points out that there appears to be a fully serviceable deep-water dock (the "Steelscape Dock") just a few hundred feet upstream from the dock proposed by NWIW. The Port of Kalama describes the Steelscape Dock as "one berth with a length of 600 feet (900 feet with mooring dolphins), and connected to land via two trestles. Water depth at the terminal is 48 feet below Mean Lower Low Water (MLLW)."¹⁸ Using the Steelscape Dock for NWIW's vessels would necessarily have a "less adverse impact on the aquatic ecosystem," 40 C.F.R. § 230.10(a), than building a larger new dock and dredging 16 acres of new berth space. Alternatively, NWIW could use the berth recently permitted by the Corps for construction at Port Westward, Oregon.¹⁹ Unless the applicant can "clearly demonstrate[]," *Northwest Environmental Defense Center*, 947 F. Supp. at 1374, why using the Steelscape dock in its current condition (or with some modifications that entail less in- and over-water construction and dredging than the current proposal) would be impracticable, the Corps may not issue the 404 permit. 40 C.F.R. § 230.10(a).

Finally, the JPN provides no commitment to any particular dredge spoil disposal site.²⁰ The applicant's failure designate a preferred dredge spoil disposal site and methodology makes it impossible for the Corps to engage in the alternatives analysis required by 40 C.F.R. § 230.10(a). It will also make it difficult, or at least cumbersome, for the Corps to describe the environmental impacts of the dredge spoil disposal as required by NEPA.

4. NWIW'S PROJECT IS CONTRARY TO THE PUBLIC INTEREST.

Issuing the requested permits for NWP-2014-177/2 and NWP-2015-111 would be "contrary to the public interest." 30 C.F.R. § 320.4(a)(1). Pursuant to the Corps' regulations, a permit "is issued following a case-by-case evaluation of a specific project involving the proposed discharge(s) . . . and a determination that the proposed discharge is in the public interest pursuant to 33 CFR part 320." 33 C.F.R. § 323.2(g).

To determine whether a project is contrary to the public interest, the Corps balances the "benefits which reasonably may be expected to accrue from the proposal" against the "reasonably foreseeable detriments" "of the proposed activity *and its intended use . . .*" 30 C.F.R. § 320.4(a)(1). (emphasis added). When assessing whether the impacts of this "proposed activity" (dock expansion, dredging, and pipeline construction), and its "intended use" (methanol

¹⁸ Port of Kalama, *Comprehensive Plan and Scheme of Harbor Improvements*, p. 64 (June 1, 2015) (online at: <http://portofkalama.com/wp-content/uploads/2015/06/Port-of-Kalama-Comp-Plan-2015-Final.pdf>).

¹⁹ See Authorization for Corps No. NWP-2007-998-1.

²⁰ See JPN, pp.3-4.

refining and export), are contrary to the public interest, the Corps must consider “[a]ll factors which may be relevant” *Id.*

The public interest review is broad, capturing all issues that could impact the environment, human health, and natural resources, including but not limited to: “conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.” 30 C.F.R. § 320.4(a)(1). In making these public interest determinations, the Corps must consider “[a]ll factors which may be relevant to the proposal,” including “the cumulative effects” of the project. 33 C.F.R. § 320.4(a)(1).

NWIW’s proposal to construct a massive new dock and dredged berth in the Columbia River, and a 3-mile pipeline, near Kalama to facilitate refining natural gas into methanol for export is contrary to the public interest because the foreseeable detriments to the public far outweigh any potential benefits. Before completing the public interest determination, the Corps must fill in the informational gaps in about NWIW’s project. The JPN lacks basic information about the project’s size, design, and scope. The JPN fails to disclose how much natural gas, electricity, and water the refinery would consume, and what type of air and water pollution would result from refinery operations. The JPN also lacks information—fundamental to the public interest determination—about how this and other proposals to export natural gas to Asia would impact U.S. gas markets, energy prices, and U.S. manufacturing. Finally, the Corps must obtain reliable information about the global warming impacts of this project and other like it.

The impacts of NWIW’s proposal, described below, demonstrate that the project is not in the public interest:

a. Dredging Impacts.

Additional dredging in the lower Columbia River is the antithesis of salmon recovery and restoring estuarine habitats, as described in every local, state, and federal salmon recovery management plan. The FCRPS BiOp identifies the estuary as a significant survival bottleneck for upriver stocks of salmon, and is key rearing and migration habitat for lower river (originating below Bonneville) fish. Changes in currents, habitat, or food resources could adversely affect survival during passage as the fish transition from brackish to marine waters. Dredging of the navigation channel and harbors has already significantly altered the historical geomorphic and

ecological state of the lower Columbia River,²¹ and NWIW's project would continue that trend, to the detriment of Columbia River salmon and steelhead.

Dredging for NWIW's project would result in the permanent degradation of at least 16 acres²² of designated critical habitat for salmon and steelhead. NWIW's project will degrade habitat for 13 ESUs of Columbia River and Snake River salmon that are listed as threatened under the ESA, in addition to multiple other non-listed salmon and other listed species that rely on the estuary for rearing and migration.

Dredging to facilitate NWIW's proposed refinery will not occur in a vacuum. The Lower Columbia River is subject to extensive and ongoing dredging activities, including those conducted by the Corps to deepen and maintain the Columbia River navigational channel. Dredging projects within close proximity to the proposed new Kalama dock, include, but are not limited to, the following:

- Port of Longview Emergency Dredge and Disposal Project
- Weyerhaeuser Dredging Project (NWS-2011-00181)
- Port of Longview Berth Maintenance and Deepening (NWP-2000-39)
- Longview Fibre Dredging Project (NWS-2011-00637)
- Northwest Alloys' and Millennium Bulk Terminals' applications to dredge berths for coal export facilities.

The Corps must evaluate NWIW's proposal by accounting for the cumulative impacts of these and other past, present, and future dredging projects in the Lower Columbia River.

b. Dock Construction and Use.

Pile driving can have substantial adverse impact on underwater organisms. NWIW's proposed terminal would require the installation of approximately 320 24-inch concrete piles, 12 12-inch steel pipe piles, and 4 18-inch steel pipe piles.²³ These piles will be installed by impact hammer or by vibratory hammer.²⁴ The JPN fail to show that harm will not occur to organisms

²¹ Thom, *et al.*, *Columbia Estuary Ecosystem Restoration Program, 2012 Synthesis Memorandum* (January, 2013); see also NMFS, *Factors Contributing to the Decline of Chinook Salmon: An Addendum to the 1996 West Coast Steelhead Factors for Decline Report*, pp.9–10 (June, 1998) ("Land and water use practices, including . . . dredging. . . have, and will continue to substantially altered [sic] watershed functions and features necessary for productive use by anadromous salmonids.").

²² JPN at 3.

²³ JPN at 2.

²⁴ JPN at 3.

in the vicinity, especially pinnipeds and salmonids. Specifically, the JPN does not discuss using bubble curtains or other methods to mitigate or attenuate acoustic impacts on aquatic organisms. Given that the pile driving is estimated to last for approximately 120 days,²⁵ many endangered fish and other animals could be killed, or at the very least harmed, by this activity.

“Acoustic disturbances associated with pile driving are likely to disrupt the foraging behavior and reduce forage efficiency of juvenile salmonids. * * * Fishes with swimbladders (including salmonids) are sensitive to underwater impulsive sounds, i.e., sounds with a sharp sound pressure peak occurring in a short interval of time (Caltrans 2001). As the pressure wave passes through a fish, the swimbladder is rapidly squeezed due to the high pressure, and then rapidly expanded as the under pressure component of the wave passes through the fish. The pneumatic pounding may rupture capillaries in the internal organs as indicated by observed blood in the abdominal cavity, and maceration of the kidney tissues (Caltrans 2001). The injuries caused by such pressure waves are known as barotraumas, and include hemorrhage and rupture of internal organs, as described above, and damage to the auditory system. Death can be instantaneous, can occur within minutes after exposure, or can occur several days later. A multi-agency work group determined that to protect listed species, sound pressure waves should be within a single strike threshold of 206 decibels (dB), and for cumulative strikes either 187 dB sound exposure level (SEL) where fish are larger than 2 grams or 183 dB SEL where fish are smaller than 2 grams.

Deployment of a bubble curtain is likely to attenuate the peak sound pressure levels by approximately 10 to 20 dB. However, a bubble curtain may not bring the sound pressure levels below biological thresholds, and some death or injuries of ESA-listed salmonids are still likely to occur. Even with the use of the bubble curtain, adverse effects to salmonids are expected in the vicinity of the pile driving. Yelverton et al. (1975) found a direct correlation between smaller body mass and the magnitude of injuries and mortalities from underwater blasts. Large juvenile and adult fishes are likely to be present during the summer in-water work window, rather than small juvenile fishes. Based on conservative estimates of sound exposure level and number of pile strikes per day, injury to juvenile listed salmonids could occur up to 368 feet from the pile driving (NMFS 2008). There may also be effects to salmonid behavior due to underwater noise up to 7,067 feet upstream and downstream from the pile driving (NMFS 2008).”²⁶

Overwater structures like NWIW’s proposed dock degrade habitat for, and directly increase the mortality of, juvenile salmonids. NWIW’s terminal will result in 44,943 square feet of new solid overwater coverage.²⁷ NMFS has explained to the Corps that: “[a]n effect of overwater structures is the creation of a light/dark interface that allows ambush predators to

²⁵ JPN at 4.

²⁶ NMFS, *Columbia Pacific Bio-Refinery Barge Dock Expansion BiOp* (Corps No. NWP-2007-998), pp.82–83 (June 8, 2015).

²⁷ JPN at 3.

remain in a darkened area (barely visible to prey) and watch for prey to swim by against a bright background (high visibility). Prey species moving around the structure are unable to see predators in the dark area under the structure and are more susceptible to predation.”²⁸ These impacts are significant and measurable: “Predation on ESA-listed salmon and steelhead is reasonably certain to increase with the addition of structures. Juvenile fish abundance has also been found to be reduced under piers and overwater structures when compared to open water or areas with piles but no overwater structures (Able *et al.* 1998), likely due to limitations in prey abundance and increased predation under structures.”²⁹ The Corps must consider the effect of constructing a new dock on juvenile salmonid survival, in addition to the cumulative impacts of the numerous existing and proposed overwater structures in the Columbia.

c. Water Pollution and Consumption

i. Stormwater

Stormwater pollution is a leading cause of water quality degradation in the United States. According to the National Research Council, “[s]tormwater runoff from the built environment remains one of the great challenges of water pollution control, as this source of contamination is a *principal contributor* to water quality impairment of waterbodies nationwide.”³⁰ Stormwater from construction sites can lead to discharges of sediment, turbidity, nitrogen, phosphorus, metals, trash and debris, nutrients, organic matter, pesticides, petroleum hydrocarbons, polycyclic aromatic hydrocarbons, other toxic organics, substances that can modify pH, and pathogens.³¹ EPA acknowledges that the cumulative effects of these pollutants are significant.³²

The Corps’ public interest analysis must consider the detrimental impacts of polluted stormwater from refinery and dock construction. The 90-acre proposed refinery site is mostly pervious surfaces.³³ Constructing the refinery and dock would convert most or all of those 90 acres into impervious surfaces.³⁴ Stormwater pollution caused by construction of the refinery and dock will contribute to degraded water quality in the lower Columbia River. The Corps must afford careful consideration to the degraded state of the Columbia River estuary, 303(d) listings, and ESA listings. The Corps must consider the public interest in additional polluted stormwater when weighing the benefits and harms caused by NWIW’s proposal.

²⁸ NMFS, *SLOPES IV In-water and Over-water Structures BiOp*, p.85 (April 5, 2012).

²⁹ *Id.* at 86.

³⁰ National Research Council, *Urban Stormwater Management in the United States* (Oct. 15, 2008) (online at: http://www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf (emphasis added)).

³¹ See EPA, *Environmental Impact and Benefits Assessment for Proposed Effluent Guidelines and Standards for the Construction and Development Category*, pp.3–6 (Nov. 2009) (online at: <http://www.epa.gov/guide/construction/>); see also 74 Fed. Reg. 62996, 63010–11 (December 1, 2009).

³² *Id.*

³³ See JPN Enclosures for NWP-2014-177/2, p.3.

³⁴ *Id.*

ii. Process wastewater

The Columbia River, and the communities that depend on it, face serious threats from toxic pollution and elevated temperature. Every day thousands of pipes buried under and along the Columbia River discharge toxic and other pollution from cities, industry, stormwater, and other sources. Pesticides and heavy metals also enter the river from non-point source pollution, such as runoff from agricultural lands and air deposition. NWIW's operations would almost certainly increase toxic and temperature pollution to an already overburdened river system. The public interest in fishable, swimmable rivers weighs in favor of denying the permits.

NWIW probably cannot demonstrate compliance with water quality standards for temperature. NWIW proposes that its "process wastewater will be treated on-site and discharged to the Columbia River" ³⁵ Most of the water NWIW would use would likely be for cooling, and therefore that water will contain temperature pollution at the time of discharge. Both Oregon and Washington consider the Columbia River to be water quality limited for temperature (*i.e.*, on the EPA-approved 303(d) lists) at the project site. As a new discharger into an impaired water body, NWIW's temperature discharges would fail to comply with the Clean Water Act, given the Ninth Circuit's ruling in *Friends of Pinto Creek v. EPA*, 504 F.3d 1007 (9th Cir. 2007).

iii. Water Consumption

The Corps' public interest analysis must account for the significant amount of water used by NWIW's refinery. According to the Water Supply Agreement between NWIW and the Port of Kalama, operating the refinery will consume up to 2.92 billion gallons of water each year. ³⁶ NWIW's use of billions of gallons of water every year to operate the methanol refinery must be accounted for in the public interest analysis. The Corps should assess and describe the source of this water, and whether the continuous use of this volume of water for energy export is in the public interest, especially in light of documented water shortages throughout the Columbia Basin as a result of climate change.

c. Air Pollution.

Numerous activities during the construction and operation of NWIW's refinery, terminal, and pipeline will cause increases in air pollutant levels in the region. These activities include operating construction equipment (including dredge ships), refinery operations, and increases in vehicle and vessel traffic. There is no publicly available analysis about how much, and what kind of, air pollution NWIW's refinery would generate, and no evidence about whether the project will exceed National Ambient Air Quality Standards.

³⁵ Exhibit 1, Port of Kalama, *Project Overview for Kalama Manufacturing and Export Facility*, p.5 (2014).

³⁶ Exhibit 2, *Water Supply Agreement between NWIW and the Port of Kalama*, p.2 (April 9, 2014).

Tanker vessels emit substantial amounts of air pollutants, including sulfur oxides (“SOx”), nitrogen oxides (“NOx”), and particulate matter (“PM”). PM consists of tiny particles suspended in air. PM has been linked to respiratory and cardiovascular problems, including coughing, painful breathing, aggravated asthma attacks, chronic bronchitis, decreased lung function, heart attacks, and premature death. Sensitive populations, include the elderly, children, and people with existing heart or lung problems, are most at risk from PM pollution. PM also reduces visibility,³⁷ and may damage important cultural resources.³⁸ NOx and SOx emissions can also have serious environmental impacts, nitrogen nutrient loading, acidification, smog caused by NOx and other precursor gases, and changes in visibility. Ships also emit substantial amounts of greenhouse gases, including black carbon—a component of PM emitted by older diesel engines—which contributes to climate change. Marine shipping was responsible for 3.6 percent of the United States’ black carbon emissions in 2002.³⁹

d. Noise & Light Pollution.

Noise and light levels during construction of the proposed pipeline, refinery, and terminal will reach levels that could be a nuisance to humans and cause harm to animals. Noise will originate from a variety of sources during construction, including increased vehicle traffic, engine driven construction equipment, pile driving, and blasting activities. Noise and light impacts from the operation of the refinery have not been disclosed to the public, but nevertheless must be evaluated in the Corps’ public interest determination. For instance, it appears that the refinery may intend to flare natural gas—as serious degradation of the Columbia River’s scenic beauty.⁴⁰

e. Energy Consumption & New Energy Infrastructure.

NWIW’s project would require huge amounts of energy to refine natural gas into methanol—at least 200 megawatts (“MW”), and possibly much more. For comparison, the proposed Jordan Cove LNG terminal would require a 420 MW gas-fired power plant, which the Oregonian concluded would be one of the biggest sources of greenhouse gases in Oregon.⁴¹ NWIW has not disclosed where this power would come from, but the Corps must evaluate the environmental impacts of generating the power that would fuel the methanol refinery. In

³⁷ EPA, *Visibility – Basic Information* (online at: <http://www.epa.gov/visibility/what.html>).

³⁸ See Bureau of Land Management, West Tavaputs EIS, p.3-19 (online at: [http://www.blm.gov/style/medialib/blm/ut/price_fo/oil_and_gas_2.Par.85007.File.dat/Chapter%203%20WTP%20FIS\[1\].pdf](http://www.blm.gov/style/medialib/blm/ut/price_fo/oil_and_gas_2.Par.85007.File.dat/Chapter%203%20WTP%20FIS[1].pdf)).

³⁹ Battye, W. and K. Boyer, *Methods for Improving Global Inventories of Black Carbon and Organic Carbon Particulates* (2002) (online at: <http://www.epa.gov/ttn/chief/conference/ei11/ghg/battye.pdf>).

⁴⁰ See Enclosure to JPN for NWP-2014-177/2, p.3.

⁴¹ Oregonian, *Jordan Cove LNG in Coos Bay could quickly become one of the largest greenhouse gas emitters in Oregon* (Nov. 18, 2014) (online at: http://www.oregonlive.com/business/index.ssf/2014/11/jordan_cove_lng_in_coos_bay_co.html).

addition, the Corps' public interest analysis must evaluate the impact of NWIW's required electric transmission line upgrades and associated impacts to terrestrial and aquatic ecosystems.

The Corps' public interest analysis must evaluate the impacts of NWIW's power source and transmission line upgrades. This includes air pollution, climate change, and other impacts caused by the generation of power for NWIW's refinery. If NWIW requires uninterrupted power to operate, the Corps must fully evaluate the impact of operating the facility with diesel or future gas-fired generation in the local area.

f. Pipeline Construction and Operation

i. Habitat Fragmentation

The Corps must assess the cumulative impacts of NWIW's proposed Pipeline route and existing and reasonably foreseeable future transmission, road, and pipeline right-of-ways that threaten habitat quality and wildlife. The Pipeline would impact aquatic and terrestrial wildlife habitat in numerous ways. Clearing forestland along the Pipeline right-of-way directly removes habitat, provides a conduit for the spread of wildfires, and provides increased access to off-road vehicle users (ORVs). The Corps must weigh the public interest in protecting fish and wildlife habitat in considering whether to issue permits for Pipeline construction.

Habitat fragmentation is one of the most pervasive and difficult-to-control threats to native ecosystems in the United States. It occurs when land uses break up contiguous blocks of habitat into smaller patches or when roads, transmission lines, pipelines, or other corridors penetrate blocks of habitat. The Pipeline will contribute to and create new habitat fragmentation, compromising the integrity of habitat interior in wetlands, forests, and other ecosystems. For example, habitat fragmentation can have negative effects on wildlife and ecosystems through direct habitat loss or indirectly through changes that occur as a result of the adjacent habitat type and the particular land use associated with it.

In addition, the Corps must consider the effects of Pipeline construction and right-of-ways on habitat disturbance, including increased exotic and invasive species. Impacts include, but are not limited to: providing access for plants and animals that thrive in disturbed environments and the associated detriment to species that require contiguous habitat; opening access to previously remote areas via the new roads and pipelines and the impact of increased human access on fish and wildlife; the spread of invasive plant species; disturbance of sensitive habitats and species of conservation concern, including threatened and endangered species; the increase in car, truck, and heavy machinery traffic; and the impact of pipelines and roads as acting as barriers to movement for many amphibian species and some small mammals.

ii. Road Construction & Long-Term Impacts.

Oregon LNG fails to address adequately the aquatic impacts from road use, road modifications, temporary extra work area construction and temporary and permanent access roads. Roads contribute to the disruption of hydrologic function and increase sediment delivery to streams. Roads also provide access to otherwise isolated habitat, and the activities that accompany access magnify their negative effects on aquatic habitats.

Road construction has the potential to produce myriad impacts to waters of the U.S., including:

- Soil erosion, compaction, loss of forest productivity;
- Pollution: sedimentation, thermal loading;
- Rapid water runoff: peak flows;
- Impaired floodplain function;
- Barrier to movement of wood and spawning gravel;
- Fragmentation: wildlife dispersal barrier;
- Human disturbance: weed vector, hunting pressure, loss of snags, litter, human fire ignition, etc.

Roads are also a conveyor belt for delivering chronic sediment to streams.⁴²

In recent decades, studies in a variety of terrestrial and aquatic ecosystems have demonstrated that roads aggravate many of the most pervasive threats to biological diversity, including habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals. EPA describes the impacts of roads as follows:

“Stormwater discharges from logging roads, especially improperly constructed or maintained roads, may introduce significant amounts of sediment and other pollutants into surface waters and, consequently, cause a variety of water quality impacts. ...

⁴² Derrig, M., *Road Improvements for Watershed Restoration* (online at: <http://www.fsl.orst.edu/geowater/PEP/calfed/derrig/index.html>).

[S]ilviculture sources contributed to impairment of 19,444 miles of rivers and streams [nationwide]. ... forest roads can degrade aquatic ecosystems by increasing levels of fine sediment input to streams and by altering natural streamflow patterns. Forest road runoff from improperly designed or maintained forest roads can detrimentally affect stream health and aquatic habitat by increasing sediment delivery and stream turbidity. This can adversely affect the survival of dozens of sensitive aquatic biota (salmon, trout, other native fishes, amphibians and macroinvertebrates) where these species are located. Increased fine sediment deposition in streams and altered streamflows and channel morphology can result in increased adult and juvenile salmonid mortality where present (e.g., in the Northwest and parts of the East), a decrease in aquatic amphibian and invertebrate abundance or diversity, and decreased habitat complexity.

The physical impacts of forest roads on streams, rivers, downstream water bodies and watershed integrity have been well documented but vary depending on site-specific factors. Improperly designed or maintained forest roads can affect watershed integrity through three primary mechanisms: they can intercept, concentrate, and divert water (Williams, 1999).”⁴³

Temporary roads present most of the same risks posed by permanent roads.

iii. Waterway Crossings

Pipeline construction will require numerous stream and wetland crossings. The Corps’ public interest analysis must account for the direct, indirect, and cumulative impacts of Pipeline construction on water quality. The applications propose crossing waters using a combination of conventional trenching and HDD. Even when successful, these techniques have impacts in areas adjacent to rivers where staging and construction areas occur, and HDDs also require the disposal of materials extracted from the drill hole.

Additionally, HDD attempts frequently fail, causing drastic impacts to water quality and fish habitat. HDD failure includes the potential for hydraulic fracturing, or a “frac-out.” A frac-out occurs when an HDD fails, fractures a streambed or riverbed, and releases drilling lubricants into the stream. Because the proposed pipeline would use HDDs to cross perennial streams, the Corps must fully assess the potential and impacts of HDD failures.

For example, many HDD attempts along the 12-inch Coos County pipeline failed, resulting in “frac-outs,” situations in which large amounts of sediment and bentonite clay (used as a drilling lubricant) were released into streams. *See picture below.* Bentonite clay and sediment released through frac-outs can disrupt fish spawning habitat, increase turbidity, and potentially introduce other contaminants to impacted waterways.

⁴³ 77 Fed. Reg. 30474 (May 23, 2012) (EPA’s Notice of Intent to Revise Stormwater Regulations).



The Corps must also evaluate the biological impacts of a frac-out. Even if the HDD drilling lubricants, particularly bentonite clay, are non-toxic (which is dubious), it does mean these substances are not harmful. For example, as NMFS cautioned in a comment on the prior natural gas pipeline proposal, “a frac-out from horizontal directional drilling will cause bentonite, a very fine clay, to be released into the water column that has the potential, if fish are present, to clog their gills, causing them to suffocate. Whether it is a toxic compound or not, the particle size of the clay is of concern for fish.”⁴⁴ Bentonite clogs fish gills and fish habitat, leading to fish mortality and loss of spawning habitat.

iv. Pipeline Safety

The Corps must account for the risk of a natural gas pipeline explosion in the public interest analysis. The proposed pipeline will use odorless gas and have an as-yet-undescribed high-impact blast radius. As recent natural gas pipeline explosions demonstrate, even with modern safety standards and inspections, deadly pipeline explosions continue to occur. The picture below shows a natural gas pipeline, also owned by Williams, that exploded in Appomattox, VA, in 2008:

⁴⁴ NMFS, *Comment to FERC regarding Oregon LNG*, p.11 (July 18, 2008).



The Corps must account for the risks of loss of life, property destruction and damage, and wildfires from a pipeline explosion. In addition, the Corps must also account for the psychological impacts on local landowners and nearby residents.

g. Impacts to Tribes & Other Environmental Justice Communities.

On February 11, 1994, President Clinton issued Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” The Executive Order makes it the responsibility of each Federal agency to “make achieving environmental justice part of its mission in identify and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” Accompanying this order was a Presidential Memorandum stating that “each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the [National Environmental Policy Act].”

From air pollution to impacts on subsistence fishing, Oregon LNG’s project raises significant environmental justice issues. The Corps must address these significant impacts in the public interest analysis. First and foremost, the Corps has treaty and constitutional duties to

consider the project's impacts on Columbia River treaty tribes. Riverkeeper will leave comments on these duties and obligations to the sovereign tribal nations.

The Corps' public interest analysis must evaluate how the construction of the refinery, terminal, and pipeline will impact cultural resources. This includes impacts to Native American cultural resources, and other cultural sites near the terminal, along the shipping route, the pipeline route, and in natural gas extraction areas. The Corps' public interest review will benefit from government-to-government consultation with Columbia River tribes and other tribes impacted by NWIW's project.

h. Impacts of Gas Export

The effect of NWIW's Kalama proposal will be to export North American gas to Asia. There is strong evidence that exporting gas—whether that gas has been condensed into LNG or refined into methanol—impairs the public interest. These impairments include: (1) regional and national economic dislocations and disruptions caused by natural gas extraction, including by the industry's boom-and-bust cycle, (2) national increases in gas and electricity prices and resulting shifts to more polluting fuels, (3) and environmental impacts of many sorts. These interests would be impaired by gas export stemming from NWIW's Kalama proposal, but these impairments are likely to be even more significant when considered cumulatively with NWIW's other gas export proposals at Tacoma and Port Westward, and with the LNG export terminals proposed at Warrenton and Coos Bay, Oregon. The Corps must examine the direct, indirect, and cumulative impacts of gas export as part of the NEPA and public interest analyses for NWIW's project.

i. Increased Shale Gas Production

The U.S. Energy Information Administration ("EIA"), and other informed commenters agree that exporting North American gas to Asia induces increased domestic gas production. Studies suggest that production increases closely correspond with the volume of exported gas. For example, the EIA, in a study of effects of U.S. exports commissioned by the DOE, estimated that **the majority of exported gas would come from increased production, primarily from shale gas.**⁴⁵ Specifically, the EIA predicts that "about 60 to 70 percent" of the volume of exported gas would be supplied by increases in domestic production, with the remainder supplied reductions in domestic consumption of current production, and that "about three quarters of this increased production is from shale sources."⁴⁶ The Corps should use these figures to calculate how much domestic gas production NWIW's Kalama project will induce individually, and the cumulative amount of domestic gas production that would be induced by NWIW's three

⁴⁵ EIA, *Effect of Increased Levels of Liquefied Natural Gas Exports on U.S. Energy Markets*, pp.6, 11 (2014) (online at: <http://www.eia.gov/analysis/requests/fe/pdf/lng.pdf>).

⁴⁶ *Id.* at 6.

proposed methanol export projects and the two LNG export facilities currently proposed on the Oregon Coast.

Increased shale gas production in the U.S. will have significant and predictable negative impacts on the environment and the public interest. As the supreme court for Pennsylvania, a state at the epicenter of the U.S. shale gas boom, explained: “By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and future generations, and potentially on the public purse” *Robinson Township v. Commonwealth*, 623 Pa. 564, 687 (2013). The basic impacts of extracting gas through fracking shale and other tight media are fairly well understood. They include, but are not limited to, massive water consumption, groundwater and drinking water contamination, increases in air toxics, the use of carcinogenic and toxic fracking chemicals, the release of significant amounts of methane (a pernicious global warming gas), and habitat fragmentation.⁴⁷

ii. Increased Gas and Energy Prices

NWIW’s Kalama project, especially when considered cumulatively with other gas export proposals, will increase domestic gas and energy prices. EIA concluded that LNG export would cause increases in domestic gas prices under a wide range of future.⁴⁸ While NWIW is proposing to export gas as methanol rather than LNG, EIA’s predictions about the resulting price hikes for domestic gas would appear to hold true. EIA further predicted that higher domestic gas costs would result in higher consumer electricity prices overall, as well as increased reliance on coal-fired energy combustion⁴⁹—with predictably negative health and environmental outcomes.

i. Flood Control Structure Impacts.

As the Joint Public Notice acknowledges, under the Rivers and Harbors Act, private parties such as NWIW or Northwest Pipeline LLC cannot alter federal flood control structures without permission from the Corps. 33 U.S.C. § 408 (Section 408). Most of the dikes and flood control structures along the Pipeline route were built, or are owned by, the Corps. Accordingly, Oregon LNG must secure permission under Section 408 from the Corps in order to construct the proposed pipeline segments. Section 408 permits and can require significant data collection and risk analysis by the Corps and the applicant. The Corps must incorporate information from the 408 process into the public interest analysis.

⁴⁷ See Earthworks, *Hydraulic Fracking 101* (last viewed October 30, 2015) (online at: https://www.earthworksaction.org/issues/detail/hydraulic_fracturing_101#.VjPJg7erTIV).

⁴⁸ EIA, *Effect of Increased Levels of Liquefied Natural Gas Exports on U.S. Energy Markets*, p.7 (2014).

⁴⁹ *Id.* at 12.

j. Vessel Traffic.

i. Engine Cooling & Ballast Water

The Corps must examine the impacts of methanol tanker engine cooling and ballast water on aquatic life. The Corps' analysis must also account for the financial and ecological costs of invasive species and examine the potential for introduction of invasive species from tankers.

Methanol tankers may harm or take ESA-listed species through entrainment. Entrainment occurs when fish are sucked into mechanical equipment, such as an ocean-going ship's ballast or cooling water systems. The Oregon Department of Fish and Wildlife and NMFS recommended maximum intake screen water velocities of 0.4 foot per second (fps) for fry and 0.8 fps for fingerlings to protect juvenile salmonids. Larval eulachon could also be entrained in the cooling water intakes of methanol tankers. The Corps must consider the impact on these fisheries resources from entrainment, and describe whether NWIW's vessels will comply with agency recommendations for cooling water intake structures and velocities.

Ballast water also has the potential to harbor non-native, nuisance organisms, which have the potential to cause economic and ecological degradation to affected nearshore areas. These organisms also could arrive on the hulls and exterior equipment (e.g., anchors and anchor chains) of methanol tankers. The Corps' public interest analysis must account for the deleterious impacts of ballast water and engine cooling water on in the Columbia River estuary.

ii. Wake Stranding

The Corps' public interest analysis must consider the increased risks of juvenile salmonid wake stranding caused by methanol tankers. Wake stranding occurs when waves from ship wakes lift young fish above the water line, stranding them on the shoreline and killing them. A 2013 U.S. Geological Survey report on wake stranding in the lower Columbia River describes the negative impacts of large vessels, stating: "Long period wake waves from deep draft vessels have been shown to strand small fish, particularly juvenile Chinook salmon, *Oncorhynchus tshawytscha*, in the lower Columbia River."⁵⁰ NMFS recently stated that increased in deep-draft ocean going vessel transits "will likely increase the incidence of stranding and death of all populations of juvenile salmonids and eulachon. Ship wake stranding is identified as a limiting factor for LCR Chinook salmon, Columbia River chum, LCR coho salmon, and LCR steelhead. Wake stranding is more severe for smaller individuals, and as such, ocean-type Chinook

⁵⁰ Kock, T., *Review of a model to assess stranding of juvenile salmon by ship wakes along the Lower Columbia River, Oregon and Washington* (2013) (online at: <http://pubs.er.usgs.gov/publication/ofr20131229>).

originating from LCR tributaries and CR chum are particularly vulnerable”⁵¹ In fact, one study showed that wake strandings occurred during 53% percent of the large ocean-going vessel transits past Barlow Point, just downstream from the project area.⁵² The Corps’ public interest analysis must factor in the loss of ESA-listed salmonids and other aquatic life from wake stranding caused by LNG tankers.

iii. Methanol Tanker Ship Strikes.

Ship strikes are a major cause of death for numerous marine species, including ESA-listed whales and turtles. A 2003 report identified 292 confirmed or possible ship strikes between 1975 and 2002, finding fin and humpback whales are the species most commonly found struck.⁵³ Sea turtles are also struck by ships. Most ship strikes to large whales result in death.⁵⁴ In its most recent Stock Assessment Report, NMFS has also documented numerous vessel-related mortalities and serious injuries for humpback whales, fin whales, killer whales, and other species on the West Coast, including some off of Oregon and Washington.⁵⁵ However, the number of documented ship strikes grossly underestimates actual incident and mortality numbers, as many of animals sink, are scavenged, or are otherwise never seen.⁵⁶ Recent studies have estimated that only 2 percent of cetaceans killed are ever recovered, and thus mortality estimates based on stranded animals vastly underestimate actual mortality.⁵⁷ Based on annual census records of Southern Resident killer whales, carcasses from confirmed deaths of known individuals are recovered only 6 percent of the time.⁵⁸

Riverkeeper encourages the Corps to fully consider the increased risk of marine mammal vessel strikes as a result of shipping associated with this project. The NMFS’ BiOp for construction of a Panamax-class vessel berth at Port Westward provides a baseline level of information about ship strikes.⁵⁹ While NMFS’ analysis only relates to ESA-listed species, Riverkeeper incorporates that document, which as prepared for and delivered to the Corps

⁵¹ NMFS, *Endangered Species Act Biological Opinion for the Columbia Pacific Bio-Refinery Barge Dock Expansion*, p.86 (June 8, 2015).

⁵² *Id.* at 85.

⁵³ Jensen and Silber, *Large Whale Ship Strike Database* (2003) (online at: www.nmfs.noaa.gov/pr/pdfs/shipstrike/lwssdata.pdf).

⁵⁴ *Id.*

⁵⁵ Caretta, *et al.*, *U.S. Pacific Marine Mammal Stock Assessments* (2011) (online at: <http://www.nmfs.noaa.gov/pr/pdfs/sars/po2011.pdf>).

⁵⁶ *Id.*

⁵⁷ Williams *et al.*, *Underestimating the damage: interpreting cetacean carcass recoveries in the context of the Deepwater Horizon/BP incident*, 4 *Conservation Letters* 3, p.288 (June/July 2011).

⁵⁸ Fisheries and Oceans Canada, *Recovery strategy for the northern and southern resident killer whales (Orcinus orca) in Canada* (2008) (online at: www.cbc.ca/bc/news/bc-081009-killer-whale-recovery-strategy.pdf); *see also* Kraus *et al.*, *North Atlantic right whales in crisis*, 309 *Science* 561–62 (2005) (online at: <http://www.sciencemag.org/content/309/5734/561>) (estimating that only approximately 17 percent of ship-struck North Atlantic right whale are detected).

⁵⁹ *See* NMFS, *Endangered Species Act Biological Opinion for the Columbia Pacific Bio-Refinery Barge Dock Expansion*, p.88–92 (June 8, 2015).

Northwest Portland Division, by reference. Riverkeeper also encourage the Corps to consider NWIW's project's shipping impacts cumulatively with other upcoming shipping-related projects, including proposed coal export, methanol, oil, LNG and propane terminals.

iv. Underwater Noise

Over the past 50 years, there has been a dramatic increase in ocean noise pollution from human sources including Navy active sonar, seismic surveys used for research and oil and gas exploration, and commercial shipping. Vessel traffic is the largest source of noise pollution in the marine environment, and the intense, low frequency noise pollution generated by ships can travel great distances through the water.⁶⁰ This low frequency propeller noise is also in the same lower-frequency range used for communication by whales, dolphins, and other marine animals.⁶¹

Numerous studies have documented the potential impacts of increasing ocean noise, which can mask communication and impede reproduction, feeding, navigation, and ultimately survival of marine animals.⁶² Further, a recent study documented that chronic stress in North Atlantic right whales is associated with exposure to low frequency noise from ship traffic, which can cause long-term reductions in fertility and decreased reproductive behavior, increased vulnerability to diseases, and permanent cognitive impairment.⁶³ Reducing ship speed can reduce noise levels.⁶⁴

k. Global warming.

Natural gas extraction is leaky, and natural gas is mostly methane—a highly potent greenhouse gas with eighty to one hundred times the global warming potential of carbon dioxide. In turn, even small leaks in the natural gas production and delivery system can have a large climate impact.

Refining natural gas into methanol and shipping it overseas for use in distant countries is energy-intensive. The Corps must examine climate change impacts of energy produced to power the refinery's significant energy demands. The applications fail to specify a source of, or necessary amount of, electricity generation for the refinery, but NWIW has indicated that the

⁶⁰ Hildebrand, J., *Impacts of anthropogenic sound*, In: Marine Mammal Research Conservation Beyond Crisis, Johns Hopkins University Press, Baltimore, Maryland, pp.101–24 (2005).

⁶¹ *Id.*

⁶² See NOAA, *Final Report of the NOAA International Symposium: Shipping Noise and Marine Mammals: A Forum for Science, Management, and Technology* (May 2004) (online at: www.nmfs.noaa.gov/pr/pdfs/acoustics/shipping_noise.pdf) (summarizing studies).

⁶³ Rolland, *et al.*, *Evidence that ship noise increases stress in right whales*, Proceedings of the Royal Society B (Feb. 8, 2012); Rolland, *et al.*, *The inner whale: hormones, biotoxins and parasites*, In: *The Urban Whale: North Atlantic Right Whales at the Crossroads*, Harvard University Press, Cambridge, MA (2007).

⁶⁴ Southall and Scholik-Schlomer, *Final report of the NOAA International Conference: "Potential Application of Vessel-Quieting Technology on Large Commercial Vessels,"* pp.1–2 (May, 2007) (noting the correlation between vessel speed and noise).

refinery would use at least 200 megawatts per day. The Corps must describe how this power would be generated and the global warming consequences of generating that electricity.

The Corps' public interest analysis must consider the lifecycle greenhouse gas emissions of NWIW's project and the attendant impacts on climate change. This includes greenhouse gas emissions from:

- producing natural gas and the resulting methane leakage in gas fields;
- fugitive emissions from piping and compressing natural gas;
- emissions for the refinery;
- emissions from generating the electricity necessary to operate the refinery, and;
- pollution from shipping methanol overseas in tankers powered by bunker fuel.

The impacts of climate change caused by greenhouse gases include “increased air and ocean temperatures, changes in precipitation patterns, melting and thawing of global glaciers and ice, increasingly severe weather events, such as hurricanes of greater intensity and sea level rise.”⁶⁵ A warming climate will also lead to loss of coastal land in densely populated areas, shrinking snowpack in Western states, increased wildfires, and reduced crop yields.⁶⁶ More frequent heat waves as a result of global warming have already affected public health, leading to premature deaths. And threats to public health are only expected to increase as global warming intensifies. For example, a warming climate will lead to increased incidence of respiratory and infectious disease, greater air and water pollution, increased malnutrition, and greater casualties from fire, storms, and floods.⁶⁷ Vulnerable populations—such as children, the elderly, and those with existing health problems—are the most at risk from these threats.

Global warming is one of the greatest ecological and humanitarian threats of the modern era. In 2007, the United Nations' Intergovernmental Panel on Climate Change (“IPCC”) released its frequently cited report reflecting the new scientific consensus that unrestrained greenhouse gas (GHG) emissions are causing global warming. As summarized by a United Nations press release:

The IPCC, which brings together the world's leading climate scientists and experts, concluded that major advances in climate modeling and the collection and analysis of data now give scientists “very high confidence”—at least a nine

⁶⁵ 76 Fed. Reg. 52,791–22 (Aug. 23, 2011).

⁶⁶ *Id.* at 66,532–33.

⁶⁷ EPA, *Climate Change, Health and Environmental Effects* (online at: <http://epa.gov/climatechange/effects/health.html>.)

out of ten chance of being correct—in their understanding of how human activities are causing the world to warm. This level of confidence is much greater than the IPCC indicated in their last report in 2001. The report confirmed that it is “very likely” that greenhouse gas emissions have caused most of the global temperature rise observed since the mid-twentieth century. Ice cores, going back 10,000 years, show a dramatic rise in greenhouse gases from the onset of the industrial age. The co-chair of the IPCC working group stated, “There can be no question that the increase in these greenhouse gases are dominated by human activity.”

The United Nations went on to summarize the key findings of the report:

The report describes an accelerating transition to a warmer world—an increase of three degrees Celsius is expected this century—marked by more extreme temperatures including heat waves, new wind patterns, worsening drought in some regions, heavier precipitation in others, melting glaciers and arctic ice, and rising global average sea levels.

More recent scientific analysis has demonstrated that the urgency to act on climate impacts is even greater than it was in 2007. The recent Copenhagen Climate Science Congress, attended by 2,000 scientists, concluded with this “Key Message 1:”

Recent observations confirm that, given high rates of observed emissions, the worst-case IPCC scenario trajectories (or even worse) are being realized. For many key parameters, the climate system is already moving beyond the patterns of natural variability within which our society and economy have developed and thrived. These parameters include global mean surface temperatures, sea-level rise, ocean and ice sheet dynamics, ocean acidification, and extreme climatic events. There is a significant risk that many of the trends will accelerate, leading to an increasing risk of abrupt or irreversible climatic shifts.⁶⁸

Numerous studies predict severe impact from climate change the Pacific Northwest, including dramatic reductions in snowpack, declining river flows, increased deaths from temperatures and air pollution, increased risk of wildfires, loss of salmon and shellfish habitat, lost hydropower generation, and flooding. The Oregon Department of Energy summarized these impacts:

Rain and Snow Patterns

Rainstorms and snowstorms could increase in severity, but less snow would build up in the mountains. Snowpacks might melt faster, increasing flooding. Less water would be

⁶⁸ International Scientific Congress, *Climate Change: Global Risks, Challenges, and Decisions* (Mar. 12, 2009).

available for recreation, irrigation, drinking and fish habitat. The concentration of pollutants in the water could increase during summer and fall.

Sea Level Rise

A rise in sea level could threaten beaches, sandy bluffs and coastal wetlands. Coast towns could experience more flooding, causing increased damage to roads, buildings, bridges and water and sewer systems.

Diminished Water Supplies and Crop Productivity

Oregon's crops and livestock could be affected by warmer temperatures, less water availability and drier soils. Some crops, such as wheat, might thrive in warmer temperatures, while others, such as potatoes, could be harmed. Less water available for irrigation would harm agriculture.

Ecosystems

Native species adapted to Oregon's climate could suffer if temperatures rise. Warmer streams and rivers would harm salmon and other native species and non-native species could replace them. The cultural practices of Oregon's tribes could be affected, as could the businesses and recreation practices of those who rely on the state's native species.

Based on the contribution of GHG emissions from NWIW's proposal, along with the cumulative global warming impacts of all fossil fuels shipping proposals on the Columbia, the project and its intended use are contrary to the public interest. 30 C.F.R. § 320.4(a)(1).

I. Economic & Human Use Impacts.

Dredging and dock construction will adversely affect the commercial and recreational fishing industries. In Oregon, Washington, and Idaho, thousands earn their livelihood from salmon and steelhead fishing.⁶⁹ The recreational fishing industry is worth millions, but the commercial salmon fishery is severely limited due to dwindling populations. The continued success of these industries, and the social and cultural traditions they support, depends on the recovery of healthy populations of fish and continued access to traditional fishing areas. As explained above, NWIW's proposed dredging, dock building, and increasing large vessel traffic would further degrade vital fish habitat. This will, in turn, degrade the opportunities for commercial and recreational fishing, as well as harming tribal fishing rights throughout the Columbia River Basin.

Fishermen, commercial shippers, and recreational boaters use the Columbia River Estuary and the shipping channel in the lower Columbia River extensively, and Panamax-class

⁶⁹ Ecotrust, *Economic Risk of the Morrow Pacific Project: Livelihood, Habitat, and Recreation*, p.4 (Mar. 20, 2014)).

methanol tankers transiting the ship channel would disrupt those uses. The shipping channel in the estuary and near the river mouth is a popular location for salmon and sturgeon fishing, and an important commercial transit corridor. The individual and cumulative impacts of Panamax vessel traffic would disrupt existing uses of the river and are contrary to the public interest.

m. Cumulative Impacts.

The Corps must consider the cumulative impacts of NWIW's project, including the cumulative effects of "conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, . . . considerations of property ownership and, in general, the needs and welfare of the people." 33 CFR § 320.4(a). The Corps' analysis, therefore, is not limited to the region directly adjacent to proposed dock and pipeline. Further, the cumulative impacts analysis must include the proposed WEP Pipeline, which would deliver gas to NWIW's project.

The Corps consideration of cumulative impacts must include the degraded state of the Columbia River. The Northwest Power and Conservation Council Columbia River Basin Fish and Wildlife 2014 Program Report, summarizes the degraded condition of the Columbia River, stating:

Salmon and steelhead runs, along with other native fish and wildlife in the basin, have declined significantly in the last 150 years. Recent years have seen some improvements in the number of adult salmon and steelhead passing Bonneville Dam; however, many of these are hatchery fish. Many human activities contributed to this decline, including land and water developments across the region that blocked traditional habitats and dramatically changed natural conditions in rivers where fish evolved.

These developments included the construction of dams throughout the basin for such purposes as hydroelectric power, flood control, commercial navigation, irrigation, and recreation. Fourteen of the largest multi-purpose dams are on the mainstem Columbia; the mainstem Snake River adds another dozen major projects. Water storage in the Columbia River totals approximately 30 percent of the average annual runoff, which fluctuates from year-to-year depending on the snowpack. With its many major federal and non-federal hydropower dams, the Columbia and its tributaries comprise one of the most intensively developed river basins for hydroelectric power in the world.

Hydroelectric dams in the basin produce, under normal precipitation, about 41 percent (14,000 average megawatts) of all the electricity generated in the Pacific Northwest.⁷⁰

⁷⁰ Northwest Power Planning Council, *Fish and Wildlife Program Fifth Power Plan* (2014) (online at: <https://www.nwcouncil.org/fw/program/2014-12/program/>).

As part of the cumulative effects analysis, the Corps must consider NWIW's impact on fish habitat in light of the already tenuous state of salmonids, green sturgeon, eulachon, and other species impacted by the project. The habitat in the Columbia River is significantly degraded. The Corps must also consider the cumulative economic effect of NWIW's project on the fishing industry and communities dependent upon the fishing economy. The direct harm to fish habitat will harm the fishing industry.

The Corps' cumulative impacts must also account for the reasonably foreseeable industrial development in the estuary. The Columbia River estuary is at the epicenter of a series of high-profile proposals to develop fossil fuel transport projects. These proposals involve transporting coal, crude oil, methanol, and propane through some of the most important salmon habitat in the continental United States, and would add over *1,500 outgoing deep draft vessels annually*, increasing vessel traffic by 117%. Examples of fossil fuel shipping proposals that the Corps must account for in the cumulative impacts analysis for these permits are listed in Section 2.a, above. The Corps' public interest analysis must account for the cumulative impacts of existing industrial development and associated vessel traffic, as well as reasonably foreseeable future projects.

5. NWIW'S PROJECT WILL HARM ESA-LISTED SPECIES AND ADVERSELY MODIFY DESIGNATED CRITICAL HABITAT.

The Corps may not approve the permit if it "jeopardizes the continued existence of species listed as endangered or threatened under the Endangered Species Act of 1973, as amended, or results in likelihood of the destruction or adverse modification of . . . critical habitat." 33 C.F.R § 230.10(b)(3); *see also* 16 U.S.C §1536(a)(2). As discussed in detail above, the proposed dock construction and dredging 16 acres of designated critical habitat would jeopardize the struggling populations of 13 ESUs of salmonids and other ESA-listed species. Additionally, this type of shipping terminal will increase in deep draft ship traffic, which will increase wake stranding of juvenile fish and increase vessel strikes and other harassment of endangered and threatened marine mammals, including several whale species and steller sea lions.⁷¹ For the reasons provided in this comment letter, the NWIW's project does not comply with 33 C.F.R § 230.10(b)(3) or 16 U.S.C §1536(a)(2).

CONCLUSION

Riverkeeper urges the Corps to deny permits for that would facilitate NWIW's project because the applications fail to demonstrate compliance with the Clean Water Act and the Rivers and Harbors Act. NWIW's project threatens the Columbia River estuary and significantly undermines efforts to restore endangered salmonids, including the Corps' obligations under the

⁷¹ NMFS, *Endangered Species Act Biological Opinion for the Columbia Pacific Bio-Refinery Barge Dock Expansion*, pp.85-93 (June 8, 2015).

FCRPS BiOp. Because NWIW's project is not in the public interest, and because there are alternatives that are would be less environmentally harmful, the Corps should deny these applications. Please direct any questions or correspondence to the undersigned.

Sincerely,



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Exhibits:

- Exhibit 1: Project Overview for Kalama Manufacturing and Export Facility.
- Exhibit 2: Water Supply Agreement between NWIW and the Port of Kalama.