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Western Environmental Law Center

Regional Forester
Objection Reviewing Officer
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Portland, Oregon 97208-3623
https:/cara.ecosystem-management.org/Public/CommentInput?project=28132
Certified Mail #: 7008 1300 0001 1350 7484

RE: 36 CFR 218 Objection Pacific Connector Pipeline Site Specific Plan Amendments for the Umpqua, Rogue River-Siskiyou, and Fremont-Winema National Forests

Dear Forest Service Objection Reviewing Officer: December 31, 2019

In accordance with 36 C.F.R. Part 218, the Western Environmental Law Center and on behalf of Beyond Toxics; Cascadia Wildlands; Center for Biological Diversity; Citizens for Renewables, Inc.; Earthworks; Evans Schaaf Family LLC; FLOW; Great Old Broads for Wilderness; Great Old Broads for Wilderness, Cascade Volcanoes Chapter; Green Springs Inn & Cabins; Hair on Fire Oregon; Klamath-Siskiyou Wildlands Center; Oregon Coast Alliance; Oregon Wild; Oregon Women's Land Trust; Pacific Coast Federation of Fishermen's Associations (PCFFA); Institute for Fisheries Resources (IFR); Rogue Climate; Rogue Riverkeeper; Sierra Club; Umpqua Watersheds, Inc.; and Willamette Riverkeeper hereby object to the project described below.

DOCUMENT TITLE:
U.S. Department of Agriculture Forest Service, Draft Record of Decision and Final Environmental Impact Statement for the Jordan Cove Natural Gas Liquefaction and Pacific Connector Gas Pipeline Project and Land and Resource Management Plan Amendments for the Umpqua, Rogue River, and Winema National Forests.

http://www.fs.usda.gov/nfs/11558/www/nepa/57005_FSPLT3_4989004.pdf.

PROJECT DESCRIPTION: The proposed action will make provision for 30.7 miles of the Pacific Connector Pipeline route to cross National Forest System (NFS) lands administered by the above-mentioned Forests. These areas affected by this decision include approximately 591 acres of lands associated with the proposed construction of the Pacific Connector Pipeline Project and approximately 186 acres associated with the proposed permanent right of way for the Pipeline Project, which would cross approximately 10.8 miles on the Umpqua Nation Forest in Douglas County, 13.9 miles on the Rouge River Siskiyou National Forest in Jackson County, and 6 miles on the Fremont-Winema National Forest in Klamath County.

PROJECT LOCATION (Forest/District): Umpqua, Rogue River Siskiyou, and Fremont-Winema National Forests, Douglas, Jackson, and Klamath Counties, Oregon.

NAME AND TITLE OF RESPONSIBLE OFFICIAL: Alice B. Carlton, Forest Super and Responsible Official, Umpqua National Forest.

LEAD OBJECTOR: Susan Jane Brown, Public Lands Director & Staff Attorney, Western Environmental Law Center, (503) 914-1323, 4107 NE Couch Street, Portland, Oregon, 97232

ADDITIONAL OBJECTORS: listed below in alphabetical order with contact information.

TIMELINESS: This objection is timely filed. Notice of the Opportunity to Object Plan Amendments for Pacific Connector Gas Pipeline proposed decision was published in the federal register, Medford Mail Tribune, Roseburg News-Review, and Klamath Falls Herald and News on November 22, 2019. Forty-five days from November 22 is January 5, 2020.

REQUEST FOR MEETING TO DISCUSS RESOLUTION: *Objectors hereby request a meeting to discuss potential resolution of the issues raised in this objection.*

NARRATIVE DESCRIPTION OF THOSE ASPECTS OF THE PROPOSED DECISION ADDRESSED BY THE OBJECTION:

1. The Forest Service has failed to adequately consider reasonable alternatives; failed to disclosure of site-specific effects; and failed to take a hard look at various issues described herein;
2. The draft decision fails to consider an alternative that meets the standards and guidelines of existing land use plans for the above-mentioned Forests;
3. The proposed forest plan amendments fail to comply with the National Forest Management Act 2012 Planning Rule, as amended (2012 Planning Rule); and
4. The proposed action fails to identify additional forest plan amendments required by the 2012 Planning Rule.

SUGGESTED REMEDIES THAT WOULD RESOLVE THE OBJECTION:

Objectors respectfully request that the Forest Service withdraw the recommended project and —

1. Prepare a project that meets the standards and guidelines of the existing land use management plan;
2. Prepare forest plan amendments that comply with the 2012 Planning Rule;
3. Prepare a new or supplemental EIS that meets all the requirements of NEPA; or;
4. Deny the project.

DESCRIBE HOW THE OBJECTIONS RELATE TO PRIOR COMMENTS: Objectors submitted timely comments on the proposed action, including raising the issues identified in this objection. Specifically, on July 2, 2019 the Western Environmental Law Center on behalf of Sierra Club and others submitted to the Federal Energy Regulatory Commission (FERC) a lengthy comment letter on the draft environmental impact statement for the Jordan Cove Energy Project, Submission ID# 1002073, via FERC's web portal. This comment letter was timely filed by FERC on July 3, 2019.

STATEMENT OF ISSUES RELATED TO THE PROPOSED SITE-SPECIFIC PLAN AMENDMENTS ACTION: The land management plan amendments for the above-mentioned forests are intended to facilitate construction of a high-pressure gas pipeline stretching approximately 235 miles from Malin, Oregon, to the north spit of Coos Bay. This pipeline is directly connected to the construction of a large LNG export facility. We are opposed to both the pipeline and the LNG export terminal because it is clearly not in the public interest to develop these projects in light of the significant direct, indirect, and cumulative adverse effects on climate, water quality, air quality, river and stream habitat, wetlands, estuaries, forest habitat, private property rights, navigation, air safety, and public safety, among other concerns.

The Forest Service is a cooperating agency in FERC's EIS process, and the agency is responding to an applicant's request for right-of-way access to federal lands to build a natural gas pipeline: this is not the type of project that the federal land management agencies would likely ordinarily propose of their own volition. Be that as it may, there is ample authority under existing law to prohibit the Pacific Connector pipeline, to drastically realign the right-of-way to better protect federal natural resources, or to prepare a project that meets the standards and guidelines of the existing land use management plans. The Forest Service is not *required* to accede to the whims of a foreign-owned corporation that desires to despoil American public lands for private profit. Indeed, the LRMPs at issue stand for the opposite principle: that these lands are for the public benefit of all Americans, not for the private profit of a few foreign private companies.

We agree with the FEIS at Apx F.2 pg 1-1, "A land management plan provides a framework for integrated resource management and for guiding project and activity decision-making on a national forest, grassland, prairie, or other administrative unit. Consistent with the Multiple-Use Sustained-Yield Act of 1960 (MUSYA), the Forest Service manages National Forest System (NFS) lands to sustain the multiple use of its renewable resources in perpetuity while maintaining the long-term health and productivity of the land." MUSYA defines ''Multiple use'' to mean: "The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people..." https://www.fs.fed.us/emc/nfma/includes/musya60.pdf

We also point out that amending three Forest Service land management plans to waive environmental protections on thousands of acres of federal public lands in order to accommodate a pipeline construction project is without precedent within the range of the northern spotted owl. It also violates several federal laws. While we often find ourselves in federal court challenging Forest Service land management projects such as timber sales, never before have the agencies simply decided to entirely exempt a project from forest plan requirements: we may disagree about whether a project complies with various requirements, but never have we encountered a

project that expressly violates the LRMPs such that the agencies feel compelled to totally exempt it from its own management plans. This is extremely disappointing to say the least and has the effect of undermining the public's trust in the Forest Service as a steward of public lands.

The Forest Service must use its authority to forego the proposed land management plan amendments and deny the request or application for a right-of-way across Forest Service lands or develop a proposed action that is consistent with the existing land use management plans. The Forest Service has this explicit authority and must exercise it in this case. *See*, 81 Fed. Reg. 90,725 – 90,726 (stating that the 2012 Planning Rule prohibits agency actions that seek to exempt a project from forest plan requirements).

EXEMPTING A PROJECT FROM FOREST PLAN REQUIREMENTS VIOLATES NFMA AND THE 2012 PLANNING RULE

The proposed pipeline construction across federal public forestlands involves numerous actions that are inconsistent with the planning documents and management intent for those lands. The violations of the underlying land use plans are significant, irreversible and irretrievable, and may retard and prevent accomplishments of the goals and objectives of the land management plans (Resource Management Plans, RMPs on BLM lands; Land and Resource Management Plans, LRMPs on Forest Service lands). Reliance on site-specific forest plan amendments violates NFMA's requirement that forest plans "form one integrated plan for each unit of the National Forest System, incorporating in one document or one set of documents, available to the public at convenient locations, all of the features required by this section." 16 U.S.C. § 1604(f)(1).

NFMA imposes substantive constraints on management of forest lands, such as a requirement to insure biological diversity. *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 898 (9th Cir. 2002). NFMA and its implementing regulations subject forest management to two stages of administrative decision making. At the first stage, the Forest Service is required to develop a Land and Resource Management Plan, also known as a Forest Plan, which sets forth a broad, long-term planning document for an entire national forest. At the second stage, the Forest Service must approve or deny individual, site-specific projects. These individual projects must be consistent with the Forest Plan. *Great Old Broads for Wilderness v. Kimbell*, 709 F.3d 836, 851 (9th Cir. 2013) ("the NFMA prohibits site-specific activities that are inconsistent with the governing Forest Plan"); *see also Neighbors of Cuddy Mtn. v. Alexander*, 303 F.3d 1059, 1062 (9th Cir.2002) ("[s]pecific projects ... must be analyzed by the Forest Service and the analysis must show that each project is consistent with the plan").

In 2012, the Forest Service revised its planning regulations applicable to all new, revised, and amended forest plans. In 2016, the Forest Service amended the 2012 Planning Rule to clarify how amendments of forest plans created under prior planning rules (e.g., the 1982 planning rule) must be undertaken. Responding to public comment that suggested that the 2012 Planning Rule allowed a responsible official to simply exempt a project from applicable forest plan requirements, the Forest Service explained:

> ...Other members of the public suggested an opposite view: That the 2012 rule gives the responsible official discretion to selectively pick and choose which, if any, provisions of

> the rule to apply, thereby allowing the responsible official to avoid 2012 rule requirements or even propose amendments that would contradict the 2012 rule. Under this second interpretation, some members of the public hypothesized that a responsible official could amend a 1982 rule plan to remove plan direction that was required by the 1982 rule without applying relevant requirements in the 2012 rule.
>
> This final rule clarifies that **neither of these interpretations is correct.**
>
> ...the responsible official's discretion to tailor the scope and scale of an amendment is not unbounded; **the 2012 rule does not give a responsible official the discretion to amend a plan in a manner contrary to the 2012 rule by selectively applying, or avoiding altogether, substantive requirements within §§ 219.8 through 219.11 that are directly related to the changes being proposed**. Nor does the 2012 rule give responsible officials discretion to propose amendments "under the requirements" of the 2012 rule that actually are contrary to those requirements, or to use the amendment process to avoid both 1982 and 2012 rule requirements (§ 219.17(b)(2)).

Forest Service, *National Forest System Land Management Planning, Final Rule*, 81 Fed. Reg. 90,723, 90,725 – 90,726 (Dec. 16, 2016) (emphasis added). Instead,

> ...the responsible official is required to apply those substantive requirements that are directly related to the plan direction being added, modified, or removed by the amendment. The responsible official must determine which substantive requirements are directly related to the changes being proposed based on the purpose and effects of the amendment, using the best available scientific information, scoping, effects analysis, monitoring data, and other rationale to inform the determination. The responsible official must provide early notice to the public of which substantive requirements are likely to be directly related to the amendment, and must clearly document the rationale for the determination of which substantive requirements apply and how they were applied as part of the decision document.

81 Fed. Reg. 90,726.

The requirements of the 2016 amendment to the 2012 Planning Rule twice have been interpreted by the Fourth Circuit Court of Appeals in the same factual situation present here, e.g. a natural gas pipeline across national forestlands necessitating forest plan amendments. The Court in *Sierra Club v. Forest Service* explained these requirements:

> Specifically, the 2016 Revisions provide that the Forest Service "shall ... [d]etermine which specific substantive requirement(s) within §§ 219.8 through 219.11 are directly related to the plan direction being added, modified, or removed by the amendment," and then "apply such requirement(s) within the scope and scale of the amendment." 36 C.F.R. § 219.13(b)(5). Conversely, "[t]he responsible official is not required to apply any substantive requirements within §§ 219.8 through 219.11 that are not directly related to the amendment." *Id*.

> Thus, the issue we consider here turns on whether the requirements in the 2012 Planning Rule are directly related to the instant Forest Service amendments to the Jefferson Forest Plan.

Sierra Club, Inc. v. United States Forest Serv., 897 F.3d 582, 601 (4th Cir.), *reh'g granted in part*, 739 F. App'x 185 (4th Cir. 2018). In examining the "purpose" of the proposed amendments, the Court went on to explain that

> The Forest Service admittedly needed to change the Forest Plan because the MVP project could not meet its requirements otherwise. See J.A. 1280 ("The amendment [to the Forest Plan] is needed because the MVP Project cannot achieve several Forest Plan standards that are intended to protect soil, water, [and] riparian ... resources." (emphasis supplied)). Of note, elsewhere in the ROD, the Forest Service characterizes the purpose of the amendment as "ensur[ing] consistency between provisions of the Forest Plan and the proposal to construct, operate, and maintain [the pipeline] on National Forest System land." J.A. 1284. But there would be no need to "ensure consistency" if the Forest Plan need not be amended in the first place. Thus, the clear purpose of the amendment is to lessen requirements protecting soil and riparian resources so that the pipeline project could meet those requirements.
>
> Having determined the purpose of the amendment, it is clear the Planning Rule sets forth substantive requirements directly related to that purpose: "soil and soil productivity" (36 C.F.R. § 219.8(a)(2)(ii)); "water resources" (36 C.F.R. § 219.8(a)(2)(iv)); "the ecological integrity of riparian areas" (36 C.F.R. § 219.8(a)(3)(i)). Therefore, there is no question that the 2012 Planning Rule requirements for soil, water, and riparian resources are directly related to the purpose of the Forest Plan amendment. The Forest Service acted arbitrarily and capriciously in concluding otherwise.

Id. at 603.

In a substantially similar Fourth Circuit case that relied on *Sierra Club* for its reasoning, the Court further explained in *Cowpasture River Pres. Ass'n v. Forest Service* that

> If the substantive requirement is directly related to the amendment, then the responsible official must "apply such requirement(s) within the scope and scale of the amendment." *Sierra Club*, 897 F.3d at 601 (quoting 36 C.F.R. § 219.13(b)(5)). Conversely, if the substantive requirement from the 2012 Planning Rule is not directly related to the amendment, the responsible official is not required to apply it to the amended Forest Plan. *See id*. Thus, Petitioners' arguments on this point turn on whether the requirements in the 2012 Planning Rule are directly related to the Forest Service's amendments to the GWNF and MNF Plans.
>
> A substantive requirement is directly related to the amendment when the requirement "is associated with either the purpose for the amendment or the effects (beneficial or adverse) of the amendment." *Sierra Club*, 897 F.3d at 602 (quoting 2016 Amendment to 2012 Rule, 81 Fed. Reg. 90,723, 90,731 (U.S. Dep't of Agric. Dec. 15, 2016)); see also

> 36 C.F.R. § 219.13(b)(5)(i) ("The responsible official's determination must be based on the purpose for the amendment and the effects (beneficial or adverse) of the amendment, and informed by the best available scientific information, scoping, effects analysis, monitoring data or other rationale."). Further, regarding the adverse effects of an amendment, "[t]he responsible official must determine that a specific substantive requirement is directly related to the amendment when scoping or NEPA effects analysis for the proposed amendment reveals substantial adverse effects associated with that requirement, or when the proposed amendment would substantially lessen protections for a specific resource or use." 36 C.F.R. § 219.13(b)(5)(ii).

Cowpasture River Pres. Ass'n v. Forest Serv., 911 F.3d 150, 161–62 (4th Cir. 2018). The Fourth Circuit then analyzed whether the Forest Service had conducted the requisite analysis.

> In its ROD, the Forest Service decided to apply project-specific amendments to a total of 13 standards in the GWNF and MNF Plans for the purpose of construction and operation of the ACP. The amendments exempt the ACP project from four MNF Plan standards and nine GWNF Plan standards that relate to soil, water, riparian, threatened and endangered species, and recreational and visual resources.
>
> Petitioners assert that the Forest Service violated the NFMA and the 2012 Planning Rule because it skipped the "purpose" prong of the "directly related" analysis. Consistent with our decision in Sierra Club, we conclude that Petitioners are correct.

Id. at 162 (also explaining that "Faced with a nearly identical situation in *Sierra Club v. Forest Service*, we concluded that the Forest Service acted arbitrarily and capriciously by failing to analyze the *purpose* of the amendment in its ROD (and instead focusing on only the effects) when "the clear purpose of the amendment [was] to lessen requirements protecting soil and riparian resources so that the pipeline project could meet those requirements." *Sierra Club*, 897 F.3d at 603."). The Court concluded that

> There would be no need to amend the Forest Plans to "ensure consistency" if the ACP project could meet the Forest Plan standards in the first place. In other words, the ROD makes clear that the purpose of the amendments was to lessen certain environmental requirements in the GWNF and MNF Plans because the ACP project could not meet those Plans' existing requirements." *Id*. In failing to "apply the substantive provisions of the 2012 Rule," the Forest Service violated NFMA. *Id.* at 163 ("This failure is significant, because it is clear that the amendments (intended to lessen protections for soils, riparian areas, and threatened and endangered species in the GWNF and MNF Plans) are directly related to the 2012 Planning Rule's substantive requirements for these same categories: "soil and soil productivity" (36 C.F.R. § 219.8(a)(2)(ii)); "water resources" (id. § 219.8(a)(2)(iv)); "ecological integrity of riparian areas" (id. § 219.8(a)(3)(i)); "ecological integrity of terrestrial ... ecosystems" (id. § 219.8(a)(1)); "appropriate placement and sustainable management of ... utility corridors" (id. § 219.10(a)(3)); and "recovery of federally listed ... species" (id. § 219.9(b)).").

Id. at 162-163. Taken together, it is clear that the 2016 amendment to the 2012 Planning Rule do not permit forest plan amendments that simply eliminate forest plan requirements. Instead, site-specific forest plan amendments – such as those at issue in *Sierra Club*, *Cowpasture*, and the present project – must: 1) analyze the scope and scale of a project's effects necessitating a forest plan amendment (i.e., analyze "the purpose for the amendment and the effects (beneficial or adverse) of the amendment, and informed by the best available scientific information, scoping, effects analysis, monitoring data or other rationale"); 2) determine whether the proposed amendment is "directly related" to the substantive provisions of the 2012 Rule, e.g. 36 C.F.R. §§ 219.8 – 219.11; 3) apply those substantive provisions of the Rule to the amendment; and 4) create new forest plan components that address the same resource protection needs of the forest plan components that the proposed project cannot meet.

Here, the proposed forest plan amendments fail to conduct the requisite analysis. Instead, the proposed amendments simply exempt the proposed project from complying with the applicable LRMPs, including the provisions of the Northwest Forest Plan. For example, a proposed amendment to the Umpqua National Forest LRMP states that "Current and future known sites will be managed according to the Management Recommendation for the species, **with the exception of the operational right-of-way and the construction zone for the Pacific Connector Pipeline, for which the applicable mitigation measures identified in Pacific Connector project design requirements must be implemented."** Appendix F-2, 2-2 (emphasis in original). This and similar language appears for each proposed forest plan amendment applicable to the proposed project, and clearly attempts – in express contradiction to the 2016 amendment to the 2012 Planning Rule, and the two Fourth Circuit cases discussed above – to exempt the project from applicable forest plan requirements. Moreover, there is no discussion about which "applicable mitigation measures identified in Pacific Connector project design requirements [sic]" actually apply to each proposed amendment (there are thousands of such proposed mitigation measures),[1] making it impossible for the public and the decision maker to determine whether in fact the applicant has proposed sufficient "replacement" plan requirements that are "directly applicable" to the proposed amendment or whether the proposed amendments apply the substantive provisions of 36 C.F.R. §§ 219.8 – 219.11 as required by the 2012 Amendment.

Because the proposed forest plan amendments fail to comply with the 2012 Planning Rule as amended, the proposed amendments are arbitrary, capricious, and not in accordance with law. The JCEP therefore cannot move forward as proposed.

The Response to Comment at C06-1 is insufficient to overcome the foregoing objections. The response to comments states that "The geographic connection for the site-specific plan amendments are rationally tied to route design and incorporation of mitigations to minimize impacts to NFS lands and resources … The PDFs [i]nclude monitoring to ensure the wide array

[1] Moreover, the Northwest Forest Plan expressly prohibits the employment of mitigation measures to compensate for environmental degradation. *See,* Northwest Forest Plan Standards and Guideline WR-3, "WR-3. Do not use mitigation or planned restoration as a substitute for preventing habitat degradation." NFP S&Gs, C-37. The Forest Service should have prepared a forest plan amendment to address the project's inconsistency with this provision.

of actions are implemented and assess the effectives of the actions relative to the goals and objectives of the respective LRMPs." There must be at least some characteristics unique to a site to support a site-specific amendment. *Lands Council v. Martin*, 529 F.3d at 1228. "Simply explaining the purpose of the Project, the desired conditions for the Forest, or stating that the amendment is site-specific because it was designed for a specific site, does not satisfy the rational connection between the facts found and the choice made required by *Lands Council.* [T]he Forest Service must explain or point to unique characteristics as to why it chose a site-specific amendment." *League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton,* 2014 WL 6977611, at *28–30 (D. Or. 2014).

In response to comments on the DEIS, the FEIS states that "The Forest Service appropriately determined that because of their purpose the proposed plan amendments are directly related to the certain substantive requirements of the 2012 planning rule. … However, the Forest Service disagrees with the assertion that the agency must consider both the purpose and effects once it has already determined that the amendment is directly related by its purpose." The Forest Service is wrong, both in light of *Sierra Club* and *Cowpasture*, as well as its statements in the preamble to its 2016 amendments to the 2012 Planning Rule. Both the courts and the agency itself has repeatedly stated that such an analysis is required.

THE PROPOSED PROJECT REQUIRES FOREST PLAN AMENDMENTS IN ADDITION TO THOSE IDENTIFIED IN THE FEIS

In addition to the 18 forest plan amendments recognized and proposed by FERC and the Forest Service in the FEIS, there are numerous additional amendments that should have been proposed and analyzed in the FEIS. For example, the pipeline will cross numerous waterways on national forestlands that will require permanent removal of vegetation over the centerline of the pipeline right-of-way. However, the Northwest Forest Plan Aquatic Conservation Strategy precludes permanent removal of vegetation within Riparian Reserves. NFP S&Gs, B-11. Therefore, forest plan amendments are required that adequately substitute for the aquatic protections afforded by the NFP ACS.

Additional necessary forest plan amendments include:[2]

- Transferring Matrix land use allocation lands to the Late-Successional Reserve land use allocation as proposed by the CMP implicates 36 C.F.R. § 219.11 (Timber requirements based on the NFMA), because timber harvest in LSRs is restricted, whereas timber harvest in the Matrix is much less so;

[2] For example, including but not limited to: 36 C.F.R. § 219.8(a)(2) Air, soil, and water; 36 C.F.R. § 219.8(a)(3) Riparian Areas; 36 C.F.R. § 219.9 Diversity of plant and animal communities; 36 C.F.R. § 219.10(a)(1) (a) Aesthetic values, air quality, cultural and heritage resources, ecosystem services, fish and wildlife species, forage, geologic features, grazing and rangelands, habitat and habitat connectivity, recreation settings and opportunities, riparian areas, scenery, soil, surface and subsurface water quality, timber, trails, vegetation, viewsheds, wilderness, and other relevant resources and uses; and 36 C.F.R. § 219.11(c) Timber harvest for purposes other than timber production.

- Amendments exempting the pipeline from Survey and Manage requirements implicate 36 C.F.R. § 219.8(a) because the Survey and Manage program addresses to address upland wildlife connectivity requirements. Current proposed amendments do not address wildlife connectivity that will be compromised by the pipeline;

- The proposed soil, water quality, and riparian area amendments fail to acknowledge that the Northwest Forest Plan, which amended the Umpqua, Rogue River-Siskiyou, and Winema National Forest land and resource management plans, contains additional requirements related to soil, water quality, and riparian areas that are additive to similar – but different – provisions in individual forest plans. *See generally*, NFP S&Gs, C-1 – C-61. Additional amendments that address the soil, water quality, and riparian area provisions of the NFP are required.

- For pipeline sections that cross steep, unstable, or other geologically unsecure slopes and areas, the NFP requires these areas to be designed as Riparian Reserves and for management actions to comply with the ACS. NFP S&Gs, C-31. Because the DEIS failed to designate such areas as Riparian Reserves, either the FEIS must do so, or forest plan amendments are required to address this resource concern.

- The FEIS indicates that construction of the pipeline would be required during seasonal closure periods to protect deer and elk habitat. A forest plan amendment is therefore required to address the effects of project construction activities during this critical biological period.

  Water withdrawals from waterways on federal lands must comply with the ACS, and any changes in the timing, quality, etc. of water quality require a forest plan amendment.

- Permanent clearing of vegetation within riparian reserves at water crossings will cause temperature changes, destabilize stream banks, and reduce recruitment of down wood habitat to streams violating the NFP ACS (including but not limited NWFP Riparian Reserve standards & guidelines "general rule," LH-3, RF-1, RF-2, RF-3, RA-4, WR-3, (NWFP pp C-31 – C-36), and therefore require a forest plan amendment

- Within Riparian Reserves, the NFP states "Do not use mitigation or planned restoration as a substitute for preventing habitat degradation." NFP S&Gs, C-37. Therefore, any use of mitigation measures – for example, the CMP – requires a forest plan amendment.

- The FEIS states that turbidity will be increased at the stream- and watershed-level, but the ACS prohibits this change in water quality. *Pac. Coast Fed'n of Fishermen's Ass'n, Inc. v. Nat'l Marine Fisheries Serv.*, 265 F.3d 1028 (9th Cir. 2001). Therefore, a forest plan amendment is required to address this inconsistency.

- Clearing vegetation and fragmenting habitat within Late Successional Reserves will violate standards & guidelines for multiple use activities other than silviculture in LSRs, such as "developments" (NWFP S&G p C-17), including the requirements that developments such as pipelines "will be planned to have the least possible adverse impacts on Late-Successional Reserves. Developments will be located to avoid degradation of habitat and adverse effects on identified late-successional species."

Until the Forest Service prepares forest plan amendments to address these LRMP violations, the JCEP is arbitrary, capricious, and not in accordance with law. Therefore, the project cannot go forward as proposed.

THE FEIS FAILED TO DISCLOSE WHETHER AND HOW THIS PROJECT WILL COMPLY WITH SUBSTANTIVE REQUIREMENTS OF THE 2012 PLANNING RULE

All site-specific activities must comply with the governing forest plan. 16 U.S.C. § 1604(i). NEPA requires disclosure of information necessary to determine compliance with legal requirements such as the Endangered Species Act, Clean Water Act, National Forest Management Act, and applicable Forest Plan Standards & Guidelines. See 40 C.F.R. § 15087.27(b)(10); *NW Indian Cemetery Protective Association v. Peterson*, 795 F2d 688 (9th Cir. 1986). In this case involving construction of the G-O Road, the NEPA document described water quality changes resulting from a road project in terms of 7-day average changes, whereas the applicable WQ standard was defined by daily peak changes. The court found this to be a NEPA violation.

In this case, the FEIS violates NEPA because it fails to disclose fully and accurately whether and how the project meets the substantive requirements of the Northwest Forest Plan (and the underlying LRMPs) discussed throughout this objection. *Oregon Nat. Res. Council Action v. U.S. Forest Serv*., 293 F. Supp. 2d 1200, 1209 (D. Or. 2003) ("The underlying EAs for the timber sales at issue did not properly frame the Forest Service's survey and manage duties, they did not analyze a range of alternatives based upon these duties, they did not evaluate completed surveys, they did not demonstrate that the Forest Service had all of the proper information before it before allowing logging, and they did not provide for public influence over the decisions. For all of these reasons, the underlying EAs are legally deficient"); *Klamath Siskiyou Wildlands Ctr. v. Boody*, 2004 WL 1146538, at *7 (D. Or. 2004).

THE FEIS FAILED TO ANALYZE AN ALTERNATIVE THAT MEETS CURRENT FOREST PLANS

The proposed pipeline construction across federal public forestlands involves numerous actions that are inconsistent with the planning documents and management intent for those lands. The proposed violations of the underlying land use plans are significant, irreversible, and irretrievable and may retard and prevent accomplishments of the goals and objectives of the land management plans (Land and Resource Management Plans, LRMPs).

The FEIS at 2-36 states, "These compensatory mitigation actions are addressed programmatically in this EIS and may require additional analyses and surveys to comply with

NEPA". This is the Final Environmental Impact Statement for a large and complicated proposed project. In order for tiering to be appropriate, the analysis must be tiered to another EIS.

Since the mitigation actions are address programmatically in this FEIS and this FEIS hasn't considered the effects in question, it is unknown whether the Forest Service will create another EIS for additional analyses and surveys to tier to. An agency may not tier to a programmatic EIS that did not consider the effects in question. *Center for Biological Diversity v. Bureau of Land Management*, 937 F. Supp. 2d 1140, 1156–57 (N.D. Cal. 2013). In *Oregon Nat. Desert Ass'n*, the BLM improperly tiered to an EIS that contained only a cursory analysis of the project's impact on noteworthy aspects of the project area, such as the sage grouse population and the spread of noxious weed infestations. The court held that the general statements about 'possible' effects and 'some risk' do not constitute a 'hard look' absent a justification for why an agency could not supply more definitive information. *Oregon Nat. Desert Ass'n v. Rose*, 921 F.3d 1185, 1191 (9th Cir. 2019). *See also: Alliance for the Wild Rockies v. U.S. Forest Serv*., 907 F.3d 1105 (9th Cir. 2018) (CEQ regulations state that "[t]iering is appropriate when the sequence of statements or analyses is ... [f]rom a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis." 40 C.F.R. § 1508.28(a). The Ninth Circuit has further interpreted these regulations to only permit tiering to another environmental impact statement. *League of Wilderness Defs.-Blue Mountains Biodiversity Project v. U.S. Forest Serv.* , 549 F.3d 1211, 1219 (9th Cir. 2008) (collecting cases); see also Kern , 284 F.3d at 1073 ("However, tiering to a document that has not itself been subject to NEPA review is not permitted, for it circumvents the purpose of NEPA."). This is because in order to comply with NEPA, the agency must "articulate, publicly and in detail, the reasons for and likely effects of those management decisions, and ... allow public comment on that articulation." *Kern*, 284 F.3d at 1073. *Alliance for the Wild Rockies v. U.S. Forest Serv*., 907 F.3d 1105 (9th Cir. 2018)).

The FEIS at 2-37 claims, "Proposed mitigation actions are intended to be responsive to LRMP objectives that include:

- Compliance with the Aquatic Conservation Strategy;
- Habitat for Threatened or Endangered (T&E) species including the NSO and coho salmon;
- Mitigation of impacts and compliance with standards and guidelines for LSRs;
- Compliance with National Forest Management Act 2012 planning rule sustainability criteria at 36 CFR §§ 219.8 through 219.11; and
- Specific resource issues as they occur by watershed"

We agree with the statement on pg. 56 of Apx F.1. "Actions on national forest system (NFS) must be consistent with the Land and Resource Management Plan (LRMP) of the administrative unit where the action occurs." If these mitigations are responsive to the stated LRMP objectives, the Forest Service has no need to modify and excuse these efforts from the objectives in the applicable LRMPs. Further, a scenario is not analyzed in which funding for these mitigations is not received by the Forest Service. The Northwest Forest Plan limits agencies' authority to exempt new permits from the requirements of the NWFP. The 1994 ROD states:

> As plan amendments, the management direction provided by our decision applies to new contracts, permits and special use authorizations as required by Forest Service and Bureau of Land Management planning statutes and regulations.
>
> The attached Standards and Guidelines that require adjustments to current contracts, permits, and special use authorizations will be applied in those cases where statutory or regulatory authority exists if the change is necessary to achieve the overall goals.

NWFP ROD, 15. The Standards and Guidelines were not only intended to apply to new permits, but also anticipates that existing permits would be revised where necessary to bring activities into compliance. Here, the Forest Service is proposing to waive important requirements of the NFP for a project that has no pre-existing rights on federal lands.

Although the FEIS outlines several forest plan amendments to exempt the Pacific Connector Pipeline from compliance with applicable forest plans, in particular the requirements of the NWFP, it is clear that the pipeline will violate additional provisions of the NWFP. In particular, it appears that the project is inconsistent with all nine Aquatic Conservation Strategy (ACS) Objectives (ACSOs), as well as standards and guidelines pertaining to the Survey and Manage program, Late-Successional Reserves (LSRs), key watersheds, matrix land allocation, occupied marbled murrelet sites, and Riparian Reserves. The applicant and Forest Service have failed to develop proposed forest plan amendments to address these forest plan violations as required by the 2012 Planning Rule, thus violating NFMA. 36 C.F.R. § 219.13.

Across the Pacific Northwest within the range of the northern spotted owl, the land management agencies and the consulting agencies have relied on the NFP as the basis for listed species recovery and conservation of regional biodiversity, water quality, and other public land amenities. Exempting a linear pipeline project from compliance with NFP and LRMP requirements undermines the regional framework, and casts into doubt the legality of historic and subsequent analysis and assumptions. For example, FWS and NMFS rely on the previously commitments of the ACS and Riparian Reserve standards and guidelines when assessing the effects of timber harvest and other land management decisions on listed species and their habitat during the Endangered Species Act consultation process. However, if the requirements of the ACS and the NWFP are no longer assured, then the agencies cannot rely on the conservation benefit from these requirements and will be required to create a new framework against which to gauge environmental impacts.

THE PROPOSED PROJECT AND SITE-SPECIFIC IMPACTS VIOLATE THE LAW

The Forest Service cannot piecemeal abandon their current land resource management plan with site specific amendments. *League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton*, 2014 WL 6977611, at *28–30 (D. Or. 2014).

FS-1 Project-Specific Amendment to Exempt Management Recommendations for Survey and Manage Species on the Umpqua, Rogue River-Siskiyou and Fremont-Winema National Forests

The Survey and Manage requirements for these national forest lands were designated mitigate for the fact that the reserves established to protect late-successional old-growth ecosystems were designated several decades too late and were subject to extensive logging before the NWFP was adopted, so the reserves are in a highly fragmented condition that is unable to ensure long-term persistence of species associated with late successional forest habitat. The survey and manage program was designed to identify and protect existing populations of rare and uncommon species so they might persist until the reserve system recovers from decades of unsustainable logging. In the NWFP's initiation in 1994, it was unknown whether the reserve network and other standards and guidelines would offer a reasonable assurance of persistence for many rare and little known species thought to be associated with late-successional and old growth forests (including mosses, liverworts, fungi, lichens, vascular plants, slugs, snails, salamanders, pacific fisher and red tree voles). Therefore, a set of management standards and guidelines, known as "Survey and Manage," were added to the Plan requiring surveys before initiating management actions and limitations on actions if species are located. To exempt this project from these procedures and rely on the reserve allocations (which are also being modified under amendment exemptions) the intent and purpose of the Survey and Manage program is dismantled and a precedent is established to render these necessary protections toothless for future corporate projects.

Specifically, on the RRSNF, within the 281-acre construction corridor, surveys identified 90 Survey and Manage sites that could be potentially impacted by construction activities. The FEIS does not disclose the number of survey and management species occurring within the 90 sites identified for impact. The Apx. 5 Survey and Manage Persistence Evaluation to the FEIS however only analyzes effects 38 species. The FEIS Mitigation Measures to Maintain or Restore Effects to Rare Aquatic and Terrestrial Plant and Animal Communities does not include coordination or information from FWS in developing mitigation. The mitigation measure to flag existing snags on the edges of right-of-ways is not mitigation, it is an existing plan requirement to leave a number of snags per acre during land management projects. The FEIS provides no additional mitigation to maintain or restore species and habitat harmed by the amendment.

The FEIS fails to account for the cumulative effects of multiple plan amendments. For instance, the general rule for LSRs is that "Development of new facilities that may adversely affect Late-Successional Reserves should not be permitted." (NWFP p C-17). However, if such developments do occur, then they should be mitigated by applying survey and manage requirements. This project removes both the general rule prohibiting projects that adversely affect LSRs, AND the specific mitigation of survey and manage for projects that do move forward in LSRs. This raises significant concerns about cumulative impacts of the combined elimination of multiple layers of safety net provided by the Northwest Forest Plan.

UNF-1 Project-Specific Amendment to Allow Removal of Effective Shade on Perennial Streams

The NW Forest Plan encompasses the Aquatic Conservation Strategy (ACS) which holds the primary objective of maintaining and restoring the distribution, diversity, and complexity of watershed-level features and processes to which aquatic and riparian species are uniquely adapted. The ACS uses an ecosystem approach to management of riparian and aquatic habitats and was designed to: 1) protect watersheds that currently have good-quality habitat and strong fish populations; and 2) halt further declines in watershed condition and restore ecological processes that create and maintain favorable conditions in aquatic ecosystems in currently degraded ecosystems (FEMAT 1993). The long-term goal (100+ years) is to develop a network of functioning watersheds that support populations of fish and other aquatic- and riparian-dependent organisms across the NWFP area. The ACS is based on preserving and restoring key ecological processes, including the natural disturbance regimes that create and maintain habitat for native aquatic- and riparian-dependent organisms, and recognizes that periodic natural disturbances may be required to sustain ecological productivity. As a result, the ACS does not expect that all watersheds will be in favorable condition (highly productive for the same aquatic organisms) at any point in time, nor does it anticipate that any particular watershed will remain in a certain condition through time. If the ACS and the NWFP are effective, the proportion of watersheds in better condition (for native organisms) is expected to increase over time. By exempting the applicant from meeting the standards and guidelines under the ACS the opportunity to maintain or improve the aquatic systems within the proposed pipeline route will be forgone. A proposed resolution to this objection point is for the Forest Service to create an action alternative that is compatible with their land use plans, including the ACS, as written.

Protection of aquatic resources from pipeline disturbance, in addition to continuous restoration of key watersheds, is essential to not only compliance with Aquatic Conservation Strategies under the NFP, but the ultimate survival of species like salmon. The Project's pipeline construction and related road actions will violate numerous ACSs by creating or exacerbating impacts that will significantly inhibit crucial elements of the ACS, and therefore cannot be authorized under the framework of the NFP. NWFP Record of Decision, appendix A, page B-9.

UNF-3 Project-Specific Amendment to Exempt Limitations on Detrimental Soil Conditions within the Pacific Connector ROW in All Management Areas

It is recognized that the destructive impacts of some land-use practices—particularly construction of roads and landings, heavy equipment used off-roads to fell and remove logs, clear-cutting on steep slopes, fragile soils, and in streamside corridors – are harmful to soil conditions. In the past, such land-use practices have reduced forest productivity, altered water flow and hydrology, accelerated the spread of weeds, choked salmon streams with sediment, caused landslides that dump mud and debris on salmon spawning beds, raised stream temperatures, and precipitated a decline in salmon populations. Avoiding these requirements in order to authorize the construction of a pipeline places commercial export of foreign and domestic natural gas above salmon protection, something neither the ACS nor the ESA permit.

In the Scenery Management Analysis and Mitigations Recommendations at F10 pg, 1,2 the FEIS admits the impacts to soils will be destructive such that all tree stumps and shrubs will be removed, and graded to a level surface, such that the compaction of soils and loss of top soil created by construction equipment will affect the success of proposed revegetation.

The applicant acknowledges that soil impacts will be detrimental to watershed health vis-a-vis reforestation efforts, and visual quality objectives. Specifically, it is estimated that out of 209 acres of pipeline construction approximately 54 to 127 acres would not meet standards for soils described above. Appendix F.2 ay 2-9. Thirty-nine acres rated moderate to very high risk for sensitivity are also within the proposed construction zone. Decommissioning 11.4 miles of roads will not offset soil damage and sediment delivery of up to 127 acres of impacts.

Regulations from the Council on Environmental Quality (CEQ) direct agencies to "ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements" (Section 1502.24) Attachment A, FERC Upland Erosion Control Revegetation Management Plan, remains unmodified from the May 2013 version. This remains true for the Attachment B FERC Waterbody and Wetland Construction and Mitigation Procedures as well.

The use of mitigation to justify additional soil degradation is not allowed by the ACS. "WR-3. Do not use mitigation or planned restoration as a substitute for preventing habitat degradation."

RRNF-2, 4 Project Specific Amendment of Visual Quality Objectives (VQO) on the Big Elk Road and Adjacent to Highway 140

The purpose of having a VRM and Scenery Integrity Objective is to retain visual quality, which the project fails to do. The mitigations laid out in the Aesthetics Management Plan at pg 7 provide an opportunity for measures to be abandoned. It is arbitrary and capricious for the Forest Service to exempt Jordan Cove from plan amendments and also mitigation measures. 5 U.S.C. § 706(2)(A). By proposing reforestation and revegetation efforts to "to shape and blend the pipeline easement, enhance the setting, and mimic the natural features of the landscape" wildfire hazards and risk increase with the creation of earl seral forest types. In Table 2.2.1-1 no compensable mitigation is proposed for this action.

RRNF-5 Project-Specific Amendment to Allow the Pacific Connector Pipeline Project in Management Strategy 26, Restricted Riparian Areas

The "mitigation" language for Riparian Reserves is vague and meaningless, "[D]o what is appropriate, applicable and feasible to minimize, maintain or restore any effects of the pipeline's construction and operation on the soil, water and riparian resources within the area affected by the pipeline." Apx F.2, pg 2-34. The applicable sections of 36 CFR 219.8(a) require plan components to "maintain or restore" the soil, water and riparian resources across the entire planning area (i.e., the Rogue River NF). By watering down the site-specific impacts on 281 acres of public lands with language that speaks to how all other parts of the forest are consistent with the LRMP, the agency sidesteps the site specific and cumulative impacts with vague mitigations. "These plan amendments do not alter these LRMP plan requirements for managing the soil, water, and riparian resources across 99.95% of the Rogue River NF" is therefore a

meaningless statement, because the project still violates the LRMP on those acres that the project affects.

The proposed Pacific Connector Pipeline (PCP) has vast potential to degrade water quality and quantity on public, private, and tribal land for drinking water and other beneficial uses. The project would directly harm approximately 480 Oregon rivers and streams by clearcutting through riparian areas, building new roads to access these rivers, damming and diverting water, cutting trenches and laying a 36-inch pipeline directly through riverbanks and riverbeds. Horizontal drilling beneath the wild and scenic Rogue, Umpqua, Coquille, Coos, and Klamath Rivers could result in pollution of waters with toxic drilling fluids. At least twelve public drinking water sources are located in watersheds to be transected by the proposed pipeline.

Removal of riparian vegetation has the potential to both reduce shade and increase sedimentation. Increased sedimentation can impact interactions between surface water and groundwater by decreasing porosity in the hyporheic zone, resulting in reduced cool water inputs to streams. [275] Further, as stream temperature increases, dissolved oxygen levels decrease. Removing riparian vegetation also decreases Large Woody Debris that is an important component of stream morphology and habitat for aquatic species. "Chapter 2: Temperature." Rogue River Basin TMDL. Oregon DEQ. December 2008. P. 2-20.

Channel modifications that increase sedimentation can decrease the depth and frequency of pools, which decreases the assimilative capacity for thermal loading of a stream. Chapter 2: Temperature." Rogue River Basin TMDL. Oregon DEQ. December 2008. P. 2-20.

The project area includes two major river systems known to support SONCC Coho: the Rogue River and the Klamath River. Depletion of Dissolved Oxygen (DO) in waterways is a significant pollution problem, affecting fish and aquatic species in a variety of ways at different life stages and life processes. DO levels can be influenced by several factors, including pH changes, temperature increases, decaying material or algae blooms, and sedimentation. Further, removal of vegetation near the shorelines will adversely affect aquatic species by removing a source of food. Numerous studies have established that riparian vegetation provides a valuable food source for fish, especially juveniles. Wipfli, 1997. The food is the result of invertebrates in the detritus, understory, and canopy of riparian vegetation. Many of these invertebrates find their way into the water and are subsequently eaten by fish. Both Coos Bay and the Coos River are water quality impaired for different pollutants, including but not limited to temperature, sedimentation, and toxics such as lead. Oregon's 2012 Integrated Report Assessment Database and 303(d) list. Oregon DEQ. https://www.deq.state.or.us/wq/assessment/rpt2012/search.asp.

RRNF-6 Site-Specific Amendment to Exempt Limitations on Detrimental Soil Conditions within the Pacific Connector ROW in All Management Areas

The FEIS acknowledges within the 231 acres on the RRSNF numerous soils are rated moderate to very high risk of sensitivity are included within the lands they propose for exemption of soil standards.

WNF-1-3: Project -Specific Amendment to Allow Pacific Connector Pipeline Project in Management Area 3, Amendment of VQO on the Dead Indian Memorial Highway and Amendment of VQO Adjacent to the Clover Creek Road

The purpose of having a VRM and Scenery Integrity Objective is to retain visual impact, which the project fails to do. This is arbitrary and capricious. 5 U.S.C. § 706(2)(A).

"It is expected that creating openings at this location will cause frost pockets and hamper revegetation efforts. Revegetation could take as long as 20-30 years if successful at all. This is seen in strip cut harvests in the area that have taken 30 years to revegetate. Once the Pacific Connector corridor is revegetated the cleared width will be reduced to a minimum of 30 feet in width. The expected results of the proponent's restoration efforts will eventually meet modification, but not within five years." This statement is made in relation to the VQO amendments necessary for project implementation.

The purpose of having a VRM and Scenery Integrity Objective is to retain visual quality, which the project fails to do. The mitigations laid out in the Aesthetics Management Plan at pg 7 provide an opportunity for measures to be abandoned. It is arbitrary and capricious for the Forest Service to exempt Jordan Cove from plan amendments and also mitigation measures. 5 U.S.C. § 706(2)(A).

Regulations from the Council on Environmental Quality (CEQ) direct agencies to "ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements" (Section 1502.24) Attachment A, FERC Upland Erosion Control Revegetation Management Plan, remains unmodified from the May 2013 version. This remains true for the Attachment B FERC Waterbody and Wetland Construction and Mitigation Procedures as well.

WNF-4-5: Project -Specific Amendment to Exempt Limitations on Detrimental Soil Conditions within the Pacific Connector ROW in All Management Areas and Management Area 8.

The FEIS acknowledges, within the 92 acres of soils affected, 28 acres of them are rated at a high-risk sensitivity. The applicant acknowledges that soil impacts will be detrimental to watershed health vis-a-vis reforestation efforts, and visual quality objectives. In the Scenery Management Analysis and Mitigations Recommendations at F10 pg, 1,2 the FEIS admits the impacts to soils will be destructive such that all tree stumps and shrubs will be removed, and graded to a level surface, such that the compaction of soils and loss of top soil created by construction equipment will affect the success of proposed revegetation.

THE PROPOSED COMPENSATORY MITIGATION MEASURES ARE INADEQUATE AND DO NOT MEET FOREST PLAN REQUIREMENTS

As compensatory mitigation for irreparable adverse impacts on national forestlands, the applicant proposes to conduct timber harvest that it describes as "restorative" in nature. The DEIS fails to demonstrate that logging will compensate for the permanent loss of old growth forests and other

wildlife habitat: indeed, there is no scientific information cited for this premise. Similarly, there is no information provided in the DEIS demonstrating the effectiveness of any of the compensatory (or other) mitigation measures.[3] And, because subsequent environmental review will be required for implementation of these logging compensatory mitigation, there is no guarantee that these projects will in fact be implemented. Therefore, it is impossible to know whether the proposed timber harvest will in fact compensate for the permanent loss of this natural resource.

The Northwest Forest Plan (NWFP) Late Successional Reserve (LSR) standards and guidelines state (C-17) that pipelines should be planned to have the least possible adverse impacts on LSRs. The FEIS failed to document that alternate routes around **all LSRs** were considered. The NWFP also states (C-17) that these types of proposals will be reviewed on a case-by-case basis and may only be approved when adverse effects can be minimized and mitigated. The FEIS fails to minimize the impacts, and fails to properly mitigate the impacts, as documented in these comments. Thus, the project violates the Northwest Forest Plan and its Standards and Guidelines concerning pipeline construction and plan amendments.

The NWFP only allows new developments like this in LSRs when the developments "address public needs or provide significant public benefits" (C-17). The NWFP gives examples and exporting domestic fossil fuels to Asia was not included as having a significant public benefit or public need. Therefore, the pipeline is not allowed in the LSRs described by the Northwest Forest Plan. A forest plan amendment should have been developed to address this issue.

The NWFP does not allow some of the mitigation offered for clearcutting endangered species habitat. For instance, concerning the mitigation of placing wood in streams, the NWFP says (B-32): "In-stream structures should only be used in the short term and not as a mitigation for poor land management." Other ACS objectives are not being met. For instance, some mitigation proposed to meet ACS objectives repairs damage caused by the pipeline but does not maintain restore habitat above that.

Some of the proposed mitigation measures in the CMP (Appendix F-2, p 2-3) are not additive.

> Some of the required mitigation measures in the POD sections to protect rare plant and animal communities include: flagging existing snags on the edges of the construction right-of-way or TEWAs where feasible to save from clearing; snags would be saved as and used in LWD placement post-construction to benefit primary and secondary cavity nesting birds, mammals, reptiles, and amphibians; other large diameter trees on the edges of the construction right-of-way and TEWAs would also be flagged to save/protect as

[3] For example, the DEIS acknowledges that pipeline construction and ROW maintenance is likely to result in the increase in illegal off-road vehicle trespass. DEIS, 4-630. However, the DEIS also defers until some point in the future the development of mitigation measures to address illegal trespass, and therefore does not analyze how effective these mitigation measures may be. DEIS, 4-544. Similarly, a public lands public safety POD has yet to be developed. DEIS, 4-774. These issues were not addressed in the FEIS. NEPA requires this analysis, and public review and comment, prior to authorizing a project.

green recruitment or habitat/shade trees, where feasible; trees would be girdled to create snags to augment the number of snags along the right-of-way to benefit cavity nesting birds, mammals, reptiles, and amphibians.

None of these mitigation measures are additive. The trees that would be "saved from clearing" or "used as LWD" to benefit wildlife is of no benefit to wildlife compared to doing nothing. These trees are already in the forest and will already be saved from clearing and used to benefit wildlife if the pipeline is not built. Saving them is not mitigation. They either need to be removed to make room for the pipeline and its construction or they do not. If they do not need to be removed, then they should remain in the LSR and cannot be used for mitigation credit. If they do need to be removed, then some other mitigation needs to be provided. The NEPA analysis fails to provide a logical basis for the mitigation plan.

Reallocating some Matrix lands to Late Successional Reserve is also not additive, especially if the subject lands are high-quality owl habitat, which is already protected by Recovery Action 32 of the Spotted Owl Recovery Plan. High quality habitat is already protected even if it is in the matrix, so reallocating RA-32 stands from matrix to LSRs does not provide any meaningful mitigation benefits.

THE FEIS FAILS TO CONSIDER THAT THE PROPOSED ACTION WILL INCREASE WILDFIRE RISK

Forest fires are a significant threat to the safety of the pipeline and the ecosystems of southern Oregon. For much of its length, the pipeline goes through fire-adapted forests, where forests burn naturally and, in some cases, often. Threats from fire include fire started by construction of the pipeline, other human-caused fire starts, and lightening.

The lineal early-seral habitat that will line the pipeline corridor after the construction right-of-way is allowed to regrow will pose an increase fire hazard for decades following pipeline construction. This dense young vegetation could increase flame length and rate of fire spread, acting as a wick, contagiously spreading wildfire further and faster than if the pipeline were not there and if mature forest is maintained instead of a pipeline. A buried pipeline is also in danger of explosion if a sustained fire, such as in a slash pile or a fallen tree, burned over the buried pipe. Block valves also pose a threat if a fire burns over the above-ground pipes, especially if a block valve is within a fire perimeter and cannot be reached to turn it off. Wildland fire-fighting equipment is used on ridge-tops to create a firebreak, the same places where the high-pressure pipeline is buried. Most fires would occur in Class 1 areas, where the pipes are thinner and buried higher, increasing the fire-risk further.

The FEIS mitigation will not reduce fire risk and hazards in late successional reserve forest stands. The FEIS at Apx F.2 at 2-22 states long term benefits for pipeline construction include a "water source improvement" to support fire suppression for late successional reserve forests. The FEIS does not analyze or mitigate for the increased fire hazard conditions stemming from the creation of a linear clear-cut. NEPA requires this analysis. Further, the FEIS reasons that commercially thinning LSR habitat would benefit the forest type and reduce fire hazard and risk. However, late successional reserve habitat is of the most resilient to wildfire.

The FEIS at pg 2-40 states that "No estimate has been made of the total acres of fuels reduction projects that may involve commercial timber removal. Subsequent site-specific environmental analysis would further define the details of these proposed projects. The mitigation actions are being designed to be consistent with the LRMPs as well as the recommendations in watershed assessments and the LSR assessments." Not only does NEPA require this analysis to precede project implementation, but also the mitigation proposed at this stage is meaningless if the number of acres and location of commercial treatments are not known.

The FEIS provides no cite or source of the following conclusion, "The purpose of the proposed mitigation is to reduce the risk of stand-replacing fires and to enhance the development of LSRs. Projects proposed to meet these objectives could result in commercial size trees being removed. This removal of commercial size trees would be incidental to achieving these objectives." Projects to reduce fire risk that are proposed as mitigation for construction of the pipeline are connected actions to the construction of the pipeline, the effects of which must be analyzed as part of the proposed action as required by NEPA. The failure to conduct such an analysis is arbitrary, capricious, and not in accordance with law. 5 U.S.C. § 706(2)(A).

Aesthetics Management Plan at 14: "During restoration, Pacific Connector will plant trees within forested areas to within 15 feet of the Pipeline, which will allow a strip of trees to establish along the easement and between the Pipeline and the road in this area." This proposed prescription further increases fire hazards and is not accounted for in the FEIS.

The FEIS (Appendix F4, p 2-49) includes thinning as mitigation:

> 91 acres of commercial thinning. Commercial thinning has the effect of regulating stand density, accelerating the development of larger trees, and reducing the stand-replacing fire hazard by regulating stand density and ladder fuels.

The FEIS does not adequately disclose the trade-offs associated with this proposed mitigation. If this thinning will occur in dense young (<80 years old) stands near existing roads, then thinning might have positive effects that outweigh adverse trade-offs. If this thinning is proposed in mature stands (>80 years old) or located riparian reserves, or located away from roads requiring road construction, then it is likely that the negative ecological trade-offs will outweigh any alleged ecological benefits. Negative ecological trade-offs include long-term reduction in snag and dead wood habitat, reduced carbon storage, reduced wildlife cover, and increased fire hazard. Rather than mitigating the adverse effects of the pipeline, this proposed thinning might make things worse. The FEIS did not fully consider these significant trade-offs.

PACIFIC CREST TRAIL MITIGATIONS ARE INADEQUATE AND REQUIRE A FOREST PLAN AMENDMENT

At page 4-570, the FEIS suggests boring under the PCT, "Installation of the pipeline would affect PCT users for a short duration of time. Pacific Connector proposes to use a conventional boring technique to bore underneath the PCT at the trail crossing location to reduce effects to trail users. Construction of the bore crossing would take approximately one to two weeks, and it

is not expected that PCT closures or detours would be required. There would be no surface disturbance or vegetation removal on the PCT or immediately adjacent areas."

However, when discussing the chosen alternative at 3-49, there is no mention of boring, "The variation would begin at about MP 166.4 and run in a southeasterly direction crossing Forest Service Road 3720 at about MP 167.3, then continuing on and crossing the PCT at about 167.8, essentially perpendicular to the PCT (see figure 3.4-9). The variation then continues east until it rejoins the proposed route at about MP 168.1. Near MP 167.7, the variation would be approximately 600 feet north of the South Brown Mountain Shelter, a small log cabin that has a woodstove and a seasonal water supply for various recreational users. Under the Rogue River National Forest LRMP, the existing standards and guidelines for VQOs in Foreground Partial Retention in the area where the variation crosses the PCT require that visual mitigation measures meet the stated VQO within three years of the completion of the project and that management activities be visually subordinate to the landscape. If the variation were utilized, it would require an amendment to the LRMP to change the VQO objective to Modification, and to allow 15-20 years for amended VQOs to be attained; essentially to allow tree growth adequate to screen the pipeline corridor from PCT users and blend in with the surrounding old-growth forest. An open-cut crossing of the PCT by the variation would directly affect PCT users for a short duration of time during construction (estimated as 48 hours), and noise associated with construction in the general vicinity of the PCT would be ongoing for several weeks on either side of this crossing, and also audible to occupants of the South Brown Mountain Shelter."

The failure to conduct the requisite analysis violates NEPA and is arbitrary, capricious, and not in accordance with law. 5 U.S.C. § 706(2)(A).

THE PROPOSED MITIGATION MEASURES FOR LATE-SUCCESSIONAL RESERVES ARE INADEQUATE AND REQUIRE A FOREST PLAN AMENDMENT

The Northwest Forest Plan (NWFP) Late Successional Reserve (LSR) standards and guidelines state (C-17) that pipelines should be planned to have the least possible adverse impacts on LSRs. "New access proposals may require mitigation measures to reduce adverse effects on Late-Successional Reserves. In these cases, alternate routes that avoid late-successional habitat should be considered." The FEIS failed to document that alternate routes around all LSRs were considered. The NWFP also states (C-17) that these types of proposals will be reviewed on a case-by-case basis and may only be approved when adverse effects can be minimized and mitigated. The FEIS fails to minimize the impacts, and fails to properly mitigate the impacts, as documented in these comments. Thus, the project violates the Northwest Forest Plan and its Standards and Guidelines.

The NWFP only allows new developments like this in LSRs when the developments "address public needs or provide significant public benefits" (C-17). The NWFP gives examples and exporting domestic fossil fuels to Asia was not included as having a significant public benefit or public need. Therefore, the pipeline is not allowed in the LSRs described by the Northwest Forest Plan. The USDA Forest Service ROD (p 39) says that the "public benefit" finding will be made by FERC and/or DOE. There are several problems with this: (1) the "significant public benefit" requirement of the Northwest Forest Plan is not the same as the public benefit findings

required of FERC and DOE. The FS cannot rely on a finding by another agency that lacks expertise about the purposes of the Late Successional Reserves of the Northwest Forest Plan and the harms caused by LSR fragmentation, (2) Public benefit findings by other agencies does not waive the Forest Service's duty to make its own finding of "significant public benefit."

The NWFP does not allow some of the mitigation offered for clearcutting endangered species habitat. For instance, concerning the mitigation of placing wood in streams, the NWFP says (B-32): "In-stream structures should only be used in the short term and not as a mitigation for poor land management practices." FERC has not demonstrated that its mitigation will be effective or is even permitted under the NWFP. Portions of the riparian reserves will be permanently devoid of vegetation where the pipeline crosses streams. This will cause a permanent loss of the ongoing *process* of wood recruitment to streams. This permanent loss of wood recruitment cannot be mitigated by a one-time addition of wood to streams. Ata minimum, the mitigation must be ongoing in perpetuity. The FEIS did not adequately consider and disclose these effects.

The FEIS failed to compensate for the increased Equivalent Clearcut Area (ECA) within each watershed. If the watershed has too many clear-cuts, the additional ECA caused by the pipeline could cause peak flow increases, not allowed by the Aquatic Conservation Strategy of the Northwest Forest Plan.

Other ACS objectives are not being met. For instance, some mitigation proposed to meet ACS objectives repairs damage caused by the pipeline but does not restore habitat above that. This is the case with the 6.4 miles of fencing proposed on the Winema NF to keep cattle out of pipeline right-of-way. This should not be counted as mitigation. It is simply the cost to build the pipeline.

Plants and wildlife on the Survey and Manage list of the Northwest Forest Plan have inadequate protections. Moving the pipeline around them, instead of the weak mitigations offered for destroying them, could have protected many of these areas.

THE FINAL EIS FAILS TO ADEQUATELY ASSESS THE ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION ON NATIONAL FOREST SYSTEM RESOURCES

The applicants also propose to construct a 229-mile, 36-inch high-pressured gas pipeline, which will be placed through Coos Bay and cross and permanently impair streams, wetlands, and sloughs, along with causing associated deleterious impacts to upland habitat, forest, farm, recreational, and residential uses. The pipeline would cross approximately 400 waterbodies, require clear cutting of thousands of acres of the remaining old growth forests in Oregon, cross steep and remote terrain prone to landslides where emergency response is limited to local volunteers, and impact and permanently impair approximately 5,938 acres of state, federal and privately owned lands. The EIS states that the Pacific Connector Gas Pipeline (Pacific Connector) would cross approximately 11.6 miles of wetlands. The Joint Permit Application ("JPA") associated with Clean Water Act compliance for this project states that the Pacific Connector would cross approximately 11.64 miles of wetlands, impacting approximately 239 acres of wetlands. The JPA also states that 87,454.19 cubic yards of material will be excavated from wetlands, and 39,117.61 cubic yards of material from waters, for a total of 126,571.80

cubic yards to be excavated along the pipeline route. According to the JPA, 660 features of potentially jurisdictional wetlands and other waters were identified within the project corridor. The DEIS states that approximately 239 acres of wetlands will be disturbed during construction of the project. DEIS Appendix N, Table N-1b at N-67.

As a largely undeveloped upstream region, the portion of the Project area sited for the proposed upstream pipeline and related infrastructure will be dramatically affected. The Pacific Connector pipeline would traverse approximately 40 miles of BLM lands and 31 miles of NFS lands on its 232-mile route from Malin to Coos Bay, Oregon. The pipeline project would cross portions of 19 fifth-field watersheds, 16 of which include BLM or NFS lands where the ACS applies. In 12 of the 16 watersheds traversed by the pipeline on federal lands, the pipeline project would cross perennial or intermittent streams or clip areas designated as Riparian Reserves; in 4 of the watersheds crossed, the pipeline project would not intersect with Riparian Reserves or stream crossings.

Construction of the pipeline, including clearing the pipeline right of way, will have tremendous impacts. In this section, we discuss the impacts related to terrestrial pipeline activities. Impacts related to pipeline stream crossings are discussed in the following subsection.

Although not delineated on Pacific Connector's Environmental Alignment Sheets (Resource Report 1, Appendix H.1) or discussed in their Erosion Control and Revegetation Plan, typical drawings for right-of-way cross-sections in Resource Report 1 clearly show the use of a construction access road in the right-of-way. Without a durable surface, the soil in this corridor would experience compaction during the construction of the right-of-way, and during the trenching for pipe installation. The resulting soil compaction would increase runoff and, subsequently, erosion of native soils via rill and gully erosion without additional BMPs for the construction access road surface Pacific Connector has not provided BMPs for the 229-mile construction access roadway in the form design standards, specifications, and measures necessary to support the anticipated traffic load.

During a severe rain event such as an atmospheric river, a durable unpaved road surface is essential to prevent fine soil particles from migrating to the road surface under truck traffic. Once on the road surface, stormwater entrains this soil during wet weather transporting it to swales (e.g., zero order streams), first order streams (e.g., bedrock hollows), and to streams. With the proposed pipeline alignment traversing 117 miles of steep slopes and 94 miles of severe erosion potential soils, careful selection of BMPs and the application of treatment methods are essential for water quality protection. Pacific Connector has failed to identify construction access road design standards, specifications and design drawings that adequately control discharge points to direct stormwater discharge to structural stormwater treatment controls or vegetated areas with permeable soils. Pacific Connector has failed to spatially explicit identify the location of discharge points for concentrated stormwater flow from swales and channels collecting this runoff to avoid initiating catastrophic landslides on the extensive area of unstable slopes along the pipeline ROW. Water quality impacts to streams would likely result from discharges of stormwater to landslide prone slopes, as well as from the placement of fill or spoils on such slopes. Pacific Connector has not provided specific designs for the construction access road stormwater management system adjacent to steep slopes (>30%) and landslide susceptibility

zones. Section 4.1 of the proposed ECRP, Pacific Connector proposes a list of temporary erosion control BMPs for the construction ROW that are evaluated below.

The EIS fails to acknowledge severe sedimentation of streams caused by the construction of a much smaller gas pipeline from Roseburg to Coos Bay. The EIS fails to discuss scientific uncertainty and scientific controversy regarding the effectiveness of sediment control measures identified in the EIS (see DEQ 2019). Since sediment control measures failed catastrophically during the construction of a previous gas pipeline, similar sediment discharges are possible for this gas pipeline because this pipeline traverses the same unstable steep terrain in Tyee sandstone geology. This 36-inch pipe is much larger, and the area of deforestation is much larger than smaller 12" pipeline constructed in 2004. The EIS fails to address the credibility issue surrounding gas pipeline construction in southwest Oregon and associated severe sediment impacts to many miles of coho salmon streams. from previous gas line construction. Assertions of "not noticeable", "minor" or "negligible" sediment impacts for this pipeline are not scientifically or empirically substantiated.

Consequently, the EIS fails to explain whether these project effects comply with applicable forest plans; and we surmise that it is highly unlikely that this is the case. Therefore, the Forest Service must prepare either a supplemental environmental analysis and/or additional forest plan amendments to address these environmental consequences. The following subsections outline where analysis is deficient and gives rise to the necessary amendments and/or additional analysis.

A. Construction right-of-way BMPs are inadequate to prevent excessive sediment from reaching streams.

Pacific Connector would use temporary slope breakers (i.e., water bars) to prevent rill and gulley erosion when construction stormwater discharges from the ROW, the 229-mile construction access road, and the non-working side of the ROW. If properly spaced, slope breakers may effectively serve as a runoff control, preventing rill and gully erosion in the construction ROW and construction access road. We assert that these temporary slope breakers would not function as predicted under anticipated traffic loads. Without additional design considerations, this traffic would compact the berm of the slope breaker and modify the excavated channel form, potentially modifying its flow path (see Resource Report 1, Drawing Number 3430.34-X-0008). Stormwater moving out of slope breaker and back onto the ROW would form rill and gully erosion and potentially affect the proper function of downstream temporary slope breakers.

Stormwater with suspended sediment from the construction ROW and construction access road would collect in the excavated channel in front of each slope breaker and would flow towards a discharge point. Pacific Connector has not identified specific BMPs, for example, to prevent (1) rill and gully erosion from concentrated flow at discharge points and (2) sediment discharge from exposed soil to zero order streams. Zero order streams refer to swales such as bedrock hollows and are an integral part of stream networks serving as conduits to first order streams. Pacific Connector has not identified the distance between the discharge point of slope breakers and other erosion control BMPs in relation to zero order streams. Pacific Connector has not demonstrated

that how it would avoid stormwater discharge to areas of landslide susceptibility connected to zero order streams.

Pacific Connector's proposed construction ROW would place grading spoils and, if needed, fill to level working surface. Construction of the pipeline appears likely to discharge stormwater to these landslide susceptibility zones commonly referred to convergent headwalls, as exhibited in DEQ 2019 Fig. 4a and 4b. Research and technical manuals identified in DEQ 2019 indicate that adding water and weight to unstable slopes would increases the risk of catastrophic slope failure but the EIS fails to fully analyze this risk or provide site specific and effective mitigations.

In Section 4.1.4 of the ECRP, Pacific Connector proposes to use mulch (i.e., effective ground cover). The application of mulch to exposed soil is an effective BMP presuming stormwater run-on controls are in place to prevent stormwater from mobilizing the mulch in runoff. Pacific Connector states that it would use this BMP when permanent stormwater controls such as reseeding and permanent slope breakers installed on the operational ROW are delayed beyond 20 days. During wet weather and especially during anticipated atmospheric rivers, the exposed soil is subject to splash erosion initiating runoff and the potential for rill and gully erosion carrying sediment to streams. The criteria of a 20-day delay in installing permanent controls establishes a window of water quality at risk not analyzed in the EIS. During wet weather, and especially during extreme rainfall during atmospheric rivers excessive sediment is likely to reach streams and contrary to assertions in the EIS. Moreover, on its Environmental Alignment Sheets, Pacific Connector has not delineated the travel ways into and within TEWAs or selected a durable surface for these travel ways as a source control for these exposed soil surfaces. Durable surfacing for construction travel ways is a typical BMP that was not addressed in Pacific Connector's erosion control planning. The EIS fails to identify durable surfacing as a BMP for the ROW as described by DEQ 2019.

Pacific Connector proposes to use a silt fence parallel to the ROW to control sediment discharge from the 229-mile construction access road and construction right-of-way. The construction ROW with its construction access road on ridgetops above steeps slopes has numerous adjacent areas with zero order streams that would serve as a channel carrying sediment from the ROW to first order streams. For areas of concentrated flow such as a swale, a silt fence is not designed to treat concentrated flow nor treat silt or clays deeper than sheet or overland flow. Additionally, according to the EPA, a silt fence has limits on the drainage area it can treat. In its submittal, Pacific Connector provides no evaluation for the drainage area for silt fences and does not identify alternative means of managing flow where a silt fence is inadequate. Sediment discharge overland within 200 feet of a waterbody *or a swale connected to a waterbody* has the potential to discharge sediment to this water body. Pacific Connector and the EIS appears to have limited the analysis to roadways and other land disturbances within 200 feet of a perennial or intermittent stream. Analysis in the EIS is missing for the ROW as it affects highly sensitive swales/zero order basins adjacent the ROW. The EIS fails to admit that silt fences are unlikely to prevent potential initiation of catastrophic debris flows (landslides) from swales/zero order basins adjacent the ROW.

Pacific Connector proposes to use biobags, straw wattles, and slash filter windrows to control sediment discharge from the construction ROW. The EIS fails to report that check dams

constructed of biobags and straw wattles are only moderately effective in trapping sediment and preventing channel erosion even if properly spaced (ODEQ 2019:24). Moreover, when used in a drainage swale, they provide only a secondary design benefit. The EIS fails to report that their application requires primary controls such as durable construction access road surfacing and stormwater management to avoid concentrated flows, thus these sediment controls are inadequate to support claims of sediment minimization in the EIS. Additionally, Pacific Connector would use slash filter windrows as a perimeter control for the construction right-of-way as indicated on Environmental Alignment Sheets. Slash filter windrows are typically placed on a contour at the toe of constructed road fill slopes to intercept sediment. Research cited in ODEQ: 2019 shows these windrows can reduce sediment leaving a fill slope by 75 to 85 percent which means 15-25% of sediment would be free to travel downslope and pollute into waterways. The EIS fails to report that slash filter windrows are not effective and not designed for treating concentrated flows in rills, swales, and drainage channels arising from construction areas. Sediment would not be minimized as asserted. Pacific Connector has not provided information showing that forest slash when placed on soil surfaces dissected with rills, swales, and natural drainage channels would provide a continuous "seal" along the soil surface. Such a seal at the surface assures that a control measure for sheet runoff would trap suspended sediment. This seal at the soil surface may be achieved with a properly installed straw wattle countersunk into the soil. However, the rigid structure of forest slash would leave depressions from rills, swales, and channels below the windrow providing a path of least resistance for runoff and the sediment it carries. In the highly erosive Tyee Core Area, Pacific Connector proposes to place slash filter windrows below fill and spoils storage on headwalls. For example, in Drawing Number 3430.29-006 (Sheet 6 of 226) in the Environmental Alignment Sheets, Pacific Connector proposes to use windrows on the border of the construction ROW where fill and/or grading spoils would be placed. Pacific Connector would locate these windrows in a zero order stream below steep headwalls located along Pipeline Mileposts 8.56 to 8.75 (see Figure 5 in ODEQ 2019: 24). These windrows and their construction stormwater discharged are directly connected to zero order streams (i.e., bedrock hollows) and, ultimately, first order streams. The EIS fails to admit that slash filters would not prevent substantial amounts of concentrated sediment laden water from entering swales/zero order basins that are conduits for first-order streams. The EIS fails to adequately disclose the extent of increased risk for severe gully erosion and/or debris flows from the ROW despite identified BMPs.

Pacific Connector proposes to use temporary slope breakers to concentrate and channel stormwater away from the construction ROW and construction access road. Research cited in ODEQ 2019 shows that rills and gullies resulting from concentrated road surface discharge reduces the effectiveness of mulch treatments on fill slopes and carries sediment long distances below these slopes. Uniform drainage from the road surface would minimize erosion on the fill slopes. However, in areas of steep slopes, Pacific Connector is proposing to use temporary slope breakers (i.e., water bars) that would concentrate stormwater discharge onto fill slopes above slash filter windrows. These slash filter windrows are intended to manage sheet flow on fill slopes rather than concentrated flow from a temporary slope breaker. The EIS fails to acknowledge that the combination of slope breakers and windrows are not appropriate on steep, unstable slopes that are common in the coast range. The EIS fails to provide BMPs that would address storm runoff from the ROW on steep slopes. The EIS has failed to use modeling (see DEQ 2019) to evaluate the efficacy of its proposed construction ROW BMPs to ensure Pacific

Connector is providing the highest and best treatment controls. We and DEQ assert this modeling is essential to determining consistency with Oregon's statewide narrative water quality standard given the prevalence of steep slopes and zero order streams in close proximity to the construction ROW. In summary, the EIS fails to adequately describe the BMPs used for variable steepness of the ROW and geomorphic features such as swales, headwalls and zero order basins.

B. The EIS proposed action fails to adequately consider water quality impacts from ROW construction along unstable slopes.

Pacific Connector/EIS fails to provide site specific engineering drawings for its stormwater management system for the construction ROW and the 229-mile construction access road in areas of steep slopes and landslide susceptibility zones. Pacific Connector is proposing to place grading spoils and, potentially, fill to level working surfaces, on geologically unstable slopes to support the 95-foot construction ROW including the Temporary Extra Work Areas (TEWAs). The EIS fails to discuss the increased risk of erosion/landsliding affecting water quality from this proposed action. Pacific Connector Geologic Hazard Maps show geologically unstable slopes such as mapped landslides and rapidly moving landslide hazard areas in close proximity to the construction ROW (Appendix F, Geologic Hazards Maps for Pacific Connector Gas Pipeline. Part 2: Appendix C, Resource Report 6). The Oregon Department of Geology and Mineral Industries (DOGAMI) has documented landslide hazards in Oregon and developed peer-reviewed procedures for identifying site-specific landslide hazards. For example, the Tyee Core Area in Oregon's Coastal Range is an area of high landslide activity including both shallow and deep-seated landslides. The proposed pipeline traverses the Tyee Core Area from approximately Milepost 6 to 55. Research and technical references on slope stability are clear that land managers should avoid adding water or weight to unstable slopes and avoid cutting into unstable slopes without appropriate geotechnical engineering. (See technical citations in ODEQ 2019:25). Oregon has seen other linear infrastructure development (i.e., roads, pipelines) initiate landslides, particularly in the Oregon coast range (State Highway 20, and Coos County Natural Gas Pipeline).Depending on the landslide type and proximity to streams, landslides can deposit substantial amounts of organic and inorganic debris into streams impacting the aquatic life dependent on these streams. Although landslides are a natural geomorphic process for streams in the Coast and Cascade Ranges, human-caused debris torrents affect water quality by changing the natural cycles of sediment delivery to stream systems. The EIS fails to adequately analyze increased risk of landsliding from the ROW and subsequent impacts to water quality and aquatic life.

The EIS fails to specifically acknowledge and adopt technical guidance under the Oregon Forest Practice Act intended to ensure forest operations such as road use and road building do not initiate landslides. Oregon Department of Forestry uses the Forest Practices Act rules to comply with Oregon water quality standards. OAR 629-625-0200 provides that "operators shall avoid locating roads on steep slopes, slide areas, high landslide hazard locations, and in wetlands, riparian management areas, channels or floodplains where viable alternatives exist." The EIS is defective because it has not demonstrated that viable alternatives do not exist and failed to take a hard look at viable alternatives in the EIS. The EIS fails to formerly adopt OFA requirements: OAR 629-625-0310(2)-(4) provides that "(2) operators shall end-haul excess material from steep slopes or high landslide hazard locations where needed to prevent landslides[;] (3) Operators

shall design roads no wider than necessary to accommodate the anticipated use[;] (4) Operators shall design cut and fill slopes to minimize the risk of landslides[;] (5) Operators shall stabilize road fills as needed to prevent fill failure and subsequent damage to waters of the state using compaction, buttressing, subsurface drainage, rock facing or other effective means. Similarly, OAR 629-625-0330 includes other direction on management of drainage from forest land roads. We assert that these regulations apply to the ROW because it will be used as "forest road" during construction. We also assert the EIS is defective because it principally analyzed landslide potential as it would affect the pipeline integrity to function safely but failed to adequately assess landslide potential as it would affect water quality and aquatic life (e.g. coho salmon).

C. The EIS Proposed Action Fails to Adequately Identify Shallow Landslide Susceptibility Along the ROW and Prescribe Appropriate Mitigation.

In Section 4.5.1 of Resource Report 6 (Geologic Resources), Pacific Connector presents their three-phase methodology for a landslide hazard evaluation. Phase I involved an office review of geologic maps and publications, county and state hazard maps, Natural Resource Conservation Services soil surveys, topographic maps, LiDAR hill shade models, and stereo aerial photographs. Phase II involved an aerial reconnaissance, and Phase III involved a surface reconnaissance. In Section 4.5.2, Pacific Connector clarifies its statements of risk in the landslide hazards evaluation report for Resource Report 6. The EIS is defective because hazard evaluation principally evaluated the potential for damage or failure of the pipeline from earth movements. Pacific Connector landslide hazard evaluation did not consider the risk of pipeline construction and operation initiating a landslide impacting water quality and aquatic life.

In Section 4.5.3.1 of Resource Report 6, Pacific Connector recognizes that rapidly moving landslides typically occur on steep slopes within zero order stream basins. In this section, Pacific Connector notes that these landscape features can fail and generate a debris torrent that travels great distances along defined stream channels. DEQ 2019:22 figure 4 provides examples of this type of unstable landscape feature. DEQ 2019:24 Figure 5 shows a segment of the pipeline that clearly shows the working side of the construction ROW with its construction access road and Temporary Extra Work Area above three headwalls (i.e., unstable slopes). These areas would support trenching and grading spoils and may require fill to level this working surface. The weight of the fill and/or trench and grading spoils, the anticipated traffic loads, and the stored material in combination with additional runoff due to the lack of a forest canopy present a substantial water quality risk to streams as well as a risk to worker and public safety. The EIS fails to acknowledge these risks or provide mitigations at this specific location and numerous others. DEQ performed a preliminary review of the LiDAR maps in a sample section of the Tyee Core Area and found many areas of concern. Two of these areas are illustrated in DEQ 2019:27 Figures 6 and 7. The EIS is defective because it does not provide site-specific geo-engineering measures for fills and cuts on unstable slopes . DEQ (2019) determined that Pacific Connector did not include the area from between Milepost 8.56 to 8.75 in its field data collection and risk assessment. Pacific Connector also did not conduct a surface reconnaissance for the areas of concern featured in Figures 6 and 7. On Page 31 in Section 4.5.3.2 of Resource Report 5 (Geologic Resources), Pacific Connector indicates it used LiDAR, 10-meter DEM, and aerial photography to identify moderate and high RML sites. This section provides the risk criteria Pacific Connector used to identify the RML sites selected for surface reconnaissance and

included in Table B-3a. Pacific Connector's selection criteria was to identify the potential for a RML to induce strain on the pipeline and for RML erosion to expose a pipeline. These two selection criteria would not ensure the identification of RML sites posing a risk to streams and water quality. The EIS is defective because it did not adequately consider the landslide hazard risks to streams initiated by the construction and operational ROW.

The EIS is also defective because it did not use Special Paper 42 (inventory methods) and SP-45 for site specific landslide evaluation as described by DEQ 2019:28 and recommended by DOGAMI. The results from an inventory using the SP-42 protocol support the identification of shallow-landslide and deep-seated landslide susceptibility zones to complete a scientifically credible landslide hazard assessment (best available information). Existing data in the EIS is not accurate and increases risk of failing to take appropriate protective measures as described in DEQ 2019. Using the SP-42 inventory, DOGAMI recommends following the procedure in Special Paper 45 (SP-45) to identify shallow landslide susceptibility maps and SP-48 for identifying deep-seated landslide susceptibility zones. Using the site-specific landslide inventory from SP-42, the procedure in SP-48 can assist in identifying and mitigating existing deep-seated landslides and slopes. The use of SP-42 in conjunction with SP-45 and SP-48 ensures identification of all the sites within and along the pipeline ROW where geo-engineering controls are needed to prevent spoil storage, cuts, and fills from pipeline construction and stormwater discharge from initiating unwanted landslides depositing organic and inorganic debris into streams. Current inventory methods used by Pacific Connector have been shown to be inadequate by DEQ to protect water quality.

D. The Proposed Action Fails to Identify BMPs Adequate to Mitigate Landslides that will Pollute Streams with Sediment.

Pacific Connector's proposed activities create a significant risk of sediment transport to both perennial and intermittent streams. Pacific Connector JCEP identifies three ways that pipeline construction methods would reduce slope stability and create a risk of sediment transport:1) deep excavation perpendicular to the slope (i.e., creating a cut across a slope); 2) capturing and concentrating stormwater along the ROW and discharging this stormwater to potentially unstable slopes; and 3) placing fill on a headwalls (see Section 4.6.1 of Resource Report 6-(Geologic Resources), In Section 4.6.2 of Resource Report 6, Pacific Connector states that it would engineer fill slopes constructed at gradients of 30 percent or greater to ensure long-term slope stability and it would identify side-slope ROW construction segments on steep slopes during the final design phase for this project. The EIS fails to include "final design phase" which means there are no site specific BMPs identified for high risk sites. Pacific Connector references its Erosion Control and Revegetation Plan for BMPs to manage surface water and groundwater near unstable slopes, but it is generic with no site specificity. Pacific Connector identifies the use of temporary and permanent slope breakers (i.e., water bars) which concentrate stormwater in an excavated channel in front of a berm. Runoff would substantially increase after removal of the forest and shrub canopy and herbaceous vegetation. During construction and for several years post construction, the drainage area for each temporary slope breaker is the 95-foot wide construction ROW and the 100 feet of ROW to the next temporary slope breaker based on FERC's spacing requirements. The EIS proposed action is a threat to water quality because it does not identify the locations of the discharge points for the concentrated flow in relation to

unstable geologic features. Contrary to what is stated in the EIS, the temporary slope breakers could increase the likelihood for discharge that would reduce slope stability. The generic BMPs identified in the EIS are not likely to succeed in keeping waste materials out of public waters and minimizing erosion of cut banks, fills, and road surfaces. The risk of failure is especially high in the coast range Tyee geology. Pacific Connector cannot assure water quality with generic BMPs applied at set intervals with inadequate consideration of geologic and geomorphic context for each pipeline segment.

E. The EIS Proposed Action Fails to Provide Site-Specific Controls to Prevent Excessive Sedimentation, Turbidity, and Stream Damage from Dry Open-Cut Waterbody Crossings.

The proposed action fails to provide site specific mitigation measure for each stream crossing, i.e. "context" as per NEPA. It appears that the principal consideration for steam crossings in Table I-2 was if the pipe could be installed: "Dry open-cut methods feasible/practical on small non- fish intermittent tributary if flowing at the time of construction". Table I-2 has no column for mitigations based on site conditions i.e. context. For example, there is no site-specific consideration of hill slope stability, stream slope, valley width or stream channel incision. DEQ 2019 reports that on steep unstable slopes, a dewater structure can saturate the area round the structure creating a positive soil pore pressure. A positive soil pressure can destabilize a slope causing a small slope failure that discharges a debris flow into a stream. In addition, on steep slopes, spoils from trenching can discharge sediment to the stream if there is no spatially explicit planning to properly site these spoils and prevent the decant water with suspended sediment from discharging into the stream. The EIS relies on a single set of generic drawings to be applied to hundreds of highly variable stream valleys. The EIS provides no technical method to assure that the bankfull width and depth is restored to pre-disturbance elevations. The EIS fails to acknowledge the potential for aggradation in front of the crossing and/or stream incision below the crossing. High gradient streams in constricted valley may have greatly increased impacts with the standard dry open-cut method. The EIS erroneously claims that nearly all streams can be crossed with dry open-cut as depicted and fails to provide and analyze alternative methods at locations that may be more environmentally damaging (wet open- cut) or less damaging (HDD).

F. The EIS Proposed Action Fails to Provide Site-Specific Controls to Prevent Excessive Sedimentation and Turbidity from Dry Open-Cut Dewatering Discharge.

Pacific Connector describes general procedures for dewatering work areas during dry open-cut waterbody crossings. These methods rely on upland containment areas to promote sediment settling and infiltration of the turbid discharge. Pacific Connector expects to site these structures in areas that can infiltrate the overflow from the dewatering structure into the surrounding area. Discharging water to upland areas can locally saturate shallow soils causing slope failure and mass movement. DEQ (2019) identified several crossing locations where existing terrain and soil conditions may cause slope instability. For example, the pipeline alignment crosses Steinnon Creek at two locations, at MP 20.02BR, and 24.32BR. Steinnon Creek is a Level 0 stream and is upstream of spawning and rearing habitat for Endangered Species Act (ESA) listed Coho salmon. In Table B.3-4, Pacific Connector notes steep topographic conditions for this reach near Milepost 20.20BR. Roering et al. (2005) and Pacific Connector's Geologic Hazard Map (see

Figure 5 of 47) identify contrasting steep and dissected terrain and a bench-like, low gradient form adjacent to this reach suggesting remnants of a deep-seated landslide and therefore an unstable slope. Steinnon Creek is crossed again at MP 24.32BR using a dry open cut procedure. The slopes adjacent to this crossing are landslides 126 and 127 identified from the Department of Geology and Mineral Industries Open File Report. The EIS proposed action is inadequate to protect water quality because it fails to identify a stable location for each dewater structure and the number of these structures. Pacific Connector has not identified the maintenance schedule for these dewater structures. DEQ 2019 noted additional crossing locations characterized by aquatic habitat value and steep, potentially unstable hillsides (See waterbody crossings at mileposts 34.46, 44.21, 55.71, 55.90, 55.94, 56.28, 56.34, 57.11, and others.) The pipeline alignment is located in portions of the Tyee Core Area of the Oregon Coast Range characterized by steep hillsides and shallow rapidly moving landslides (e.g. debris flows). To reduce the risk of landslides, the Oregon Department of Forestry recommends not discharging water or placing material on or near headwall areas. Pacific Connector waterbody crossing procedures do not include site-specific information necessary to demonstrate that the EIS proposed action would site and operate the dewatering structures to prevent turbid discharge, sediment discharge, and debris flows into streams. Assertions in the EIS that turbid discharge, sediment discharge and debris flow risk at dry open –cut stream crossings would be minimized have been shown to be unsupported statements with site specific analysis (DEQ 2019).

G. The EIS Proposed Action Fails to Provide Site Specific Controls to Prevent Excessive Sedimentation and Turbidity from Road Construction And Use Of Existing Access Roads.

The EIS proposes to use approximately 660 miles of existing access road to construct the pipeline. The EIS identifies these existing access roads as gravel, dirt, rock, and pit run surfaced roads. As presented on Drawing Number 3430.31-Y-Map 1 through 34 of the submittal, many of these access roads traverse steep slopes and landslide hazard areas that are in close proximity to zero order streams (swales). During wet weather, the existing roads would experience traffic loads moving heavy equipment, logs, and construction overburden (e.g., soil, rock, slash) during the preparation for and the construction of the pipeline. Unpaved roads require careful attention to the selection and construction design and maintenance standards to support the anticipated traffic loads and prevent sediment laden water from roads entering stream channels directly or via overland flow in zero order basins. Proper selection of design standards for road surfaces prevent the failure of these surfaces under traffic loads. Heavy traffic on unstable road surfaces can result in excessive fine sediment discharge to streams during wet weather.

The EIS fails to specifically identify BMPs that would disconnect portions of the road system from the stream system to minimize sediment delivery to roads from streams. Pacific Connector would use both existing privately-owned and public access roads for access to clear trees from the construction right-of-way, Temporary Extra Work Areas, and other areas necessary for building and operating the pipeline. Tree harvesting on non-federal lands would require compliance with Oregon's Forest Practices Act (FPA) rules. Oregon Department of Forestry (ODF) administers these FPA rules. FPA rules regulate road construction and maintenance on privately owned roads during forest harvesting operations in wet weather. ODF uses the FPA rules to ensure forest operations comply with water quality standards such as OAR 340-041-

0007(1), (7), and (11). Maintenance standards for public and private roads tree harvesting and pipeline construction would also require compliance with road construction and maintenance standards for the U.S. Department of Agriculture Forest Service and U.S. Department of Interior Bureau of Land Management. These Forest Service and BLM standards include potential BMPs that could help assure compliance with the Statewide Narrative Criteria for road building and maintenance. These construction and maintenance standards would also help assure compliance with the DEQ turbidity water quality standards. The EIS failed to explicitly adopt BLM Resource Management Plan BMP R-26 which would disconnect much of the road system from the stream system: "Disconnect road runoff to the stream channel by outsloping the road approach. If outsloping is not practicable, use runoff control, erosion control and sediment containment measures. These may include using additional cross drain culverts, ditch lining, and catchment basins. Prevent or reduce ditch flow conveyance to the stream through cross drain placement above the stream crossing." SWO RMP:171.

When DEQ lists waterbodies as water quality limited (not meeting standards) on the Clean Water Act 303(d) list, the Forest Service and BLM develop Water Quality Restoration Plans (WQRP) to guide Forest Service and BLM actions to protect water quality standards. The WQRP for the South Umpqua. River identified roads as a source of sediment from erosion (see Page 43, DEQ 2019).

DEQ (2019) provided Pacific Connector with example requirements from the Forest Service regarding road maintenance. These Forest Service requirements stem from the Forest Service Handbook and provide Pacific Connector with water quality BMPs in the form of design and maintenance standards for unpaved roads on federal forestlands. DEQ (2019) reviewed Table A.8-1 in Part 2 of Appendix B and highlighted the lack of information on maintenance treatments and needed road improvements in this table. Road upgrades needed to prevent sedimentation of streams from motorized vehicle access during the wet season have not been adequately identified in the EIS and supporting documents. Lack of upgrades means access roads will bleed coho killing sediment into the stream system.

Once tree harvesting is complete, Pacific Connector proposes to grade a construction right-of-way including a construction access road for trenching and pipe laying equipment. This construction access road would require a durable surface to support heavy traffic loads and prevents fine soil particles from being pushed to the road surface and carried by stormwater to drainage swales along the construction right-of-way. This durable surface as well as its stormwater management system would require monitoring and periodic maintenance to avoid erosion and subsequent sediment discharge to zero order and first order streams on ridge tops and along steep slopes. The EIS has not demonstrated on exactly how Pacific Connector would perform maintenance on each constructed access roads as well as the vast system of existing access roads.

H. The EIS Does Not Clearly Identify All Affected Waterbodies and Fails to Fully Comply With 40 C.F.R. § 1502.22 "Incomplete or Unavailable Information."

The EIS fails to clearly identify all affected waterbodies. According to the EIS, the pipeline, associated workspace, and equipment bridges would be located across 19 HUC-5 watersheds and

an additional 5 watersheds would be crossed by the proposed access roads. The pipeline would be constructed across or near 352 waterbodies, including 69 perennial streams, 270 intermittent streams, 9 perennial ponds, and 4 estuaries. However, according to Resource Report 2 provided by the applicant, the pipeline would cross 400 waterbodies. The EIS does not address this discrepancy and there may be additional waterbodies that may be impacted by the proposed activities that are not identified in the analysis.

The EIS 4-130 states**: "**Pacific Connector conducted wetland delineations of pipeline related workspaces. For areas where on-site delineation was not possible due to lack of landowner permission, Pacific Connector used USGS topographic maps, NRCS soil surveys, FWS NWI maps, and aerial photography to identify wetland type and boundaries." (i.e. desktop analysis).

EIS 4-135 states: "Pacific Connector surveys have identified a number of springs and seeps, as noted in appendix H of this EIS. Pacific Connector has stated that it would further verify exact locations of springs and seeps during easement negotiations with land managers." and "Pre-construction surveys would be conducted to confirm the presence and locations of all groundwater supplies within and adjacent to the pipeline right-of-way." Apparently Pacific Connector has not obtained on-site delineation of all springs, seeps and groundwater supplies. This is important because the EIS:4-135 states "Spring and seeps supplied by shallow groundwater, however, may be effected by the pipeline project, particularly if the pipeline is directly up-gradient of a spring or seep location.

Wetlands, stream crossings, seeps, springs, groundwater supplies typically require onsite evaluation to determine the feasibility of installing the pipeline by minimizing or eliminating the impact to the wetlands, stream crossings, seeps, springs and groundwater supplies. For example, onsite soil core sampling is needed to determine the feasibility of HDD or Direct Pipe that would eliminate most impacts (e.g. riparian veg destruction, turbidity, streambank damage) to streams.

Onsite evaluations are relevant to alternative selection (route selection and technique for pipe installation) and impact analysis (minimization vs. elimination of impacts) but the EIS fails to indicate that obtaining the onsite information involves "exorbitant costs"(see 40 CFR §1502.22 (a)). Each wetland and stream crossings where access has been denied and where onsite evaluations have not been made is not listed or evaluated as per 40 CFR §1502.22. Even if the proponents assert "exorbitant costs' preclude onsite evaluations, the EIS fails to fully comply with 40 CFR §1502.22 b (1)(2)(3)(4) for an undisclosed but significant number of wetland and stream crossings.

1. The EIS fails to state that lack of onsite evaluations results in incomplete information
2. The EIS fails to make a statement of the relevance of the incomplete or unavailable [onsite] information to evaluating reasonably foreseeable significant adverse impacts on the human environment
3. The EIS fails to provide a summary of existing credible scientific evidence for each wetland and stream crossing (for each location with no onsite evaluation) which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment.

4. The EIS fails to provide evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. We assert that "desktop analysis" for wetland and stream crossings are not generally acceptable for placement of a 36" diameter pipe in highly variable and unstable mountainous terrain in SW Oregon.

40 C.F.R. § 1502.22(b) states: "For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason." We assert that the EIS failed to state that the risk for "catastrophic consequences" is higher for pipeline crossings with no onsite evaluation.

Pacific Connector has identified over 660 miles of existing access roads that it would use to access the pipeline during construction. These include roads on federal, municipal and private lands. Pacific Connector identifies numerous miles of these existing access roads as gravel, dirt, rock, and pit run surfaced roads. Pacific Connector has not provided a field inventory of these roads to ensure a realistic understanding of upgrades and/or best management practices that would be needed to prevent sediment runoff to receiving streams. The EIS fails to indicate that obtaining the road inventory information involves "exorbitant costs"(see 40 CFR §1502.22 (a)). Even if Pacific Connector asserts that "exorbitant costs' preclude a road inventory, the EIS fails to fully comply with 40 CFR §1502.22 b (1)(2)(3)(4) for 660 miles of access roads.

1. The EIS fails to state that lack of access road inventory results in incomplete information
2. The EIS fails to make a statement of the relevance of the incomplete or unavailable road inventory information to evaluating reasonably foreseeable significant adverse impacts on the human environment (i.e. sediment laden water from roads entering the stream system)
3. The EIS fails to provide a summary of existing credible scientific evidence for each uninventoried road segment which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment.
4. The EIS fails to provide evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. We assert that each road segment will have a variety of sediment causing features that will require specific treatments to prevent sediment laden water from the entering the stream system.

I. Peak Flows.

The EIS fails to comprehensively analyze impacts to peak flows due to forest clearing disturbance within the transient snow zone. In comparison, the 2015 EIS provided some quantitative analysis of impacts to peak flows as a result of proposed activities. For example, the 2015 EIS analyzed peak flows and increased impacts to 303(d) listed streams. Specifically, the 2015 EIS stated:

> The greatest forest clearing disturbance within the transient snow zone on a percentage basis would occur within the Spencer Creek Watershed. The pipeline would disturb a total of about 126 acres of forest within the 21,913-acre transient snow zone within the 54,242-acre watershed....
>
> When considering forest vegetation disturbance within the transient snow zone, the pipeline would also have the highest percentage of forested disturbance within the Trail Creek Watershed, disturbing about 107 acres of forested vegetation types within the 30,107-acre transient snow zone in the 35,343-acre Trail Creek Watershed. The Little Butte Creek fifth-field watershed would have the largest area disturbance by the Project that is located within the transient snow zone with about 434 acres ...[4]

All three streams discussed in the 2015 EIS would be crossed in the current proposal. Trail Creek and Little Butte Creek within the Rogue Basin are both impaired for dissolved oxygen, temperature, and sedimentation. Spencer Creek in the Klamath Basin, which is also listed as a Tier 1 Key Watershed, is impaired for habitat modification, temperature, biological criteria, and sedimentation.[5] However, the EIS fails to comprehensively analyze the direct, indirect, and cumulative effects to peak flows due to forest clearing disturbance within the transient snow zone.

J. Unstable Slopes.

The EIS fails to disclose and analyze the direct, indirect, and cumulative effects to affected waterbodies from proposed activities on or near unstable slopes. Specifically, the EIS fails to identify and comprehensively assess the location of discharge points for concentrated stormwater flow from swales and channels collecting runoff from the pipeline ROW. Discharging stormwater to landslide prone slopes or placing fill or spoils on unstable slopes will likely result in water quality impacts. The analysis in the EIS relies upon generic BMPs listed by the applicant, such as trench breakers and slope breakers, rather than conducting a site-specific analysis for each location.

In its denial of the 401 certification for the project, DEQ raises significant concerns regarding the applicant's analysis of slope stability and BMPs, stating:

> JCEP has not demonstrated that the proposed pipeline construction, access road construction and maintenance, and pipeline right-of-way activities would employ state-of-practice methods to identify landslide susceptibility zones and mitigate landslide risks to control discharge of organic or inorganic debris, as required by OAR 340- 041-0007(11)…[6]

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[4] 2015 DEIS at 4-398.

[5] Oregon's 2012 Integrated Report Assessment Database and 303(d) list. Oregon DEQ. https://www.deq.state.or.us/wq/assessment/rpt2012/search.asp.

[6] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 44.

And further that the applicant has not provided reasonable assurances that the project complies with the state biocriteria water quality standard (OAR 340-041-0011), stating:

> JCEP has not demonstrated that the proposed pipeline construction, access road construction and maintenance, and pipeline right-of-way activities would identify and avoid or mitigate increases in landslide frequency that would result in detrimental changes in the resident biological communities…[7]

DEQ specifically identifies the lack of information regarding slope stability along the ROW and the potential for pipeline ROW construction and stormwater discharge from the pipeline ROW to initiate landslides. In its December 20, 2018 information request, DEQ specifically asked that the applicant use one of three slope stability models to objectively identify landslide risk areas and guide the siting of stormwater discharge points from slope breakers, siting of grading and trench spoil storage, and design of fill on landslide susceptibility zones within or adjacent to the ROW.[8]

Further, DEQ demonstrates that the use of LiDAR, 10-meter DEM, and aerial photography by the applicant to identify moderate and high rapidly moving landslide (RML) sites was not sufficient to identify potential RML sites. DEQ acknowledges that this type of analysis can be useful as a screening tool, the agency specifically points to recommendations from DOGAMI that site-specific landslide evaluations be used in areas of high potential risk.[9]

The EIS should comprehensively evaluate and require identification of each dewater structure and the number of structures for each stream crossing. DEQ in its denial of the 401 certification for the project states:

> Discharging water to upland areas can locally saturate shallow soils causing slope failure and mass movement. DEQ identified several crossing locations where existing terrain and soil conditions may cause slope instability. For example, the pipeline alignment crosses Steinnon Creek at two locations, at MP 20.02BR, and 24.32BR. Steinnon Creek is a Level 0 stream and is upstream of spawning and rearing habitat for Endangered Species Act (ESA) listed Coho salmon. In Table B.3-4, JCEP notes steep topographic conditions for this reach near Milepost 20.20BR. Roering et al. (2005) and JCEP's Geologic Hazard Map (see Figure 5 of 47) identify contrasting steep and dissected terrain and a bench-like, low gradient form adjacent to this reach suggesting remnants of a deep- seated landslide and therefore an unstable slope. Steinnon Creek is crossed again at MP 24.32BR using a dry open cut procedure. The slopes adjacent to this crossing are landslides 126 and 127 identified from the Department of Geology and Mineral Industries Open File Report. JCEP has not provided DEQ with the proposed location of each dewater structure and the number of these structures for each crossing. JCEP has not presented the maintenance

[7] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 53.
[8] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 25.
[9] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 28.

> schedule for these dewater structure. DEQ noted additional crossing locations characterized by aquatic habitat value and steep, potentially unstable hillsides.[10]

The EIS should analyze the pipeline ROW as effectively a permanent road alignment, as identified by DEQ. Additionally, the EIS fails to comprehensively analyze the direct, indirect, and cumulative impacts of new road construction and increased use of existing roads on unstable slopes. The EIS fails to conduct an inventory of existing access roads to identify road segments that are hydrologically connected to streams, which is critical to developing a maintenance and improvement plan for existing access roads to prevent and minimize sediment discharge to streams.[11]

In conclusion, the EIS should evaluate the direct, indirect, and cumulative impacts of construction, operation, and maintenance of the pipeline ROW on unstable slopes. The EIS fails to disclose and analyze the direct, indirect, and cumulative effects to affected waterbodies from proposed activities on or near unstable slopes.

K. Sedimentation and Turbidity from Stream Crossings.

The EIS is not based on the best available science because it fails to adequately disclose, analyze or monitor fine sediment deposition subsequent to stream crossings. The EIS fails to assess how pipeline construction and operation will persistently and significantly elevate sediment delivery to affected streams in numerous and additive ways. There is a considerable body of information indicating that ground-disturbing activities that occur within several hundred feet upslope of streams and water bodies have numerous negative and enduring sediment-related impacts on those water bodies and streams.

The EIS is not based on best available science because it has not established baseline physical and biological conditions at and below stream crossings. The EIS cannot assert "minor" impacts if it has not established baseline conditions. A project of this size must establish baseline stream conditions for "miles" of stream habitat because of the numerous and variable stream conditions along the pipeline route.

The model estimates of suspended sediment are inadequate to assess potential impacts from sedimentation and compliance with the state water quality standard for turbidity. The EIS should conduct site-specific analysis rather than relying upon models of "representative crossings." The EIS at 4-279 states:

> Estimates were made for 9 to 99 stream crossings per fifth-field watershed (average 51 per fifth- field watershed) for which sufficient data were available to conduct the analysis. These crossings were representative of the Project regions and ranges of stream width/gradient that would have normal dry open-cut crossings. Streams not modeled

[10] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 31.
[11] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 55.

> included the Upper Klamath River (except Spence Creek) and Lost River subbasins crossings, other HDD or boring sites, and bedrock stream crossings that would have low sediment during crossings. Due to the dynamic nature of sediment movement in streams, however, some bedrock crossings may have other substrate at the time of crossing.

The applicant proposes dry open-cut methods, including both flume and dam and pump methods, for the stream crossings where HDD or Direct Pipe technology is not proposed. HDD is proposed for Coos Bay, the Coos River, the Rogue River, and the Klamath River and Direct Pipe technology is proposed for the South Umpqua. In the Stream Crossing Risk Analysis 2017 report, GeoEngineers reviewed 173 crossings that will be trenched out of 330 total crossings.[12] The Channel Migration and Scour Analysis 2017 report identified 10 Level 2 crossings that have a high potential for migration, avulsion, and/or scour and 44 Level 1 crossings with a moderate potential for migration, avulsion, and/or scour.[13] Channel migration and streambed scour not only increases sediment pollution and potential violations of the turbidity standard, but increases the potential for complete or partial exposure of the pipeline within the channel or floodplain.

The applicant acknowledges in Pacific Connector Pipeline Resource Report 2: Water Use and Quality that "some turbidity will result during instream activities and when the water is diverted to the backfilled areas."[14] The EIS 4-107 states "Constructing the pipeline would modify streambanks, resulting in an increase in the rates of erosion, turbidity, and sedimentation into the crossed waterbody." Further, the EIS at 4-106 states:

> The *Turbidity-Nutrients-Metals Water Quality Impact Analysis* (GeoEngineers 2017e) concluded that turbidity may exceed Oregon numerical water quality standards for short distances and short durations downstream from each crossing, either during and shortly after construction (in perennial waterbodies) or after fall rains begin (for intermittent and ephemeral streams). Such exceedances are allowed as part of the narrative turbidity standard if recognized in a CWA Section 401 water quality certification if every practicable means to control turbidity has been used.

In May 2019, the Oregon Department of Environmental Quality (DEQ) denied 401 certification of the Jordon Cove project.[15] Thus there is no legal allowance for exceedances for short durations or short distances because Jordon Cove has been denied 401 certification.

Regarding stream crossings and turbidity, DEQ in its 401 certification denial states that JCEP's proposed activities do not employ the highest and best treatment to control turbid discharges by failing to: 1) Demonstrate the deployment of effective BMPs during pipeline construction and

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[12] Stream Crossing Risk Analysis. 29 August 2017. Resource Report 2 Appendix O.2. P. 3. PCP A-B P. 505.
[13] Channel Migration and Scour Analysis. 29 August 2017. Resource Report 2. Appendix T.2. PCP A-B P. 253.
[14] Pacific Connector Pipeline Resource Report 2: Water Use and Quality. P. 22. PCP A-B part 6 p. 233.
[15] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019.

operation; 2) Demonstrate the use of effective BMPs during road maintenance; 3) Provide a site-specific waterbody crossing and restoration plans to minimize turbid discharges and restore stream form and function supporting water quality.[16]

DEQ further states that JCEP's proposed activity would likely violate the Turbidity water quality standard because JCEP has not provide an NPDES 1200-C required Erosion and Sediment Control Plan demonstrating sediment and erosion controls with installation techniques have been properly deployed during the construction of the Terminal and Off-Site Project Areas to control turbidity from construction activities. [17]

DEQ concludes that:

> Based upon these findings, violations of the turbidity water quality standard are likely to occur and DEQ concludes that it lacks a reasonable assurance that the proposed activities will be conducted in a manner that will not violate the Turbidity water quality standard.[18]

The EIS fails to adequately assess the concerns raised by DEQ and does not comprehensively assess the direct, indirect, and cumulative effects of increased sediment delivery to streams related to proposed stream crossings. The EIS should evaluate site-specific construction procedures that the applicant will utilize at each stream crossing. The EIS should fully analyze site-specific waterbody crossing plans that identify proposed crossing methodology, dewatering procedures dewatering discharge sites, spoils placement locations, mobilization and demobilization, and monitoring procedures. The EIS should also address the removal of dams, dewatering locations, temporary bridges, or other temporary construction elements and include procedures to avoid or minimize sediment mobilization or turbidity.

L. The EIS Fails to Adequately Address Sediment Impacts from Riparian Vegetation Removal.

The EIS does not adequately assess increased sediment delivery to streams from riparian vegetation removal related to stream crossings. The EIS at 4-107 states:

> Constructing the pipeline would modify streambanks, resulting in an increase in the rates of erosion, turbidity, and sedimentation into the crossed waterbody. An increase in soil compaction and vegetation clearing could also potentially increase runoff and subsequent streamflow or peak flows. The extent of these impacts would depend on streambank composition and vegetation stream type, velocity, and sediment particle size.

[16] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 76
[17] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 76
[18] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 76

The EIS does not analyze or require site-specific waterbody crossing plans specifically related to riparian vegetation removal. In the EIS, NMFS expressed concerns regarding the potential use of riprap or barb/flow deflectors to address sediment delivery to streams as a result of riparian vegetation removal.

Increased sedimentation can impact interactions between surface water and groundwater by decreasing porosity in the hyporheic zone, resulting in reduced cool water inputs to streams. [19] Further, as stream temperature increases, dissolved oxygen levels decrease. Removing riparian vegetation also decreases Large Woody Debris that is an important component of stream morphology and habitat for aquatic species. Not only is riparian vegetation critical for water quality, but removing riparian vegetation has direct, indirect, and cumulative impacts on threatened salmonids. The EIS does not evaluate compliance with riparian protection rules adopted by the Oregon Department of Forestry (ODF) that require retention of all trees within specific distances of streams with salmon, steelhead, and bull trout under OAR 629-642-0105.

Further, the EIS does not address discrepancies raised by DEQ regarding the proposed "necking down," or narrowing" of the construction right-of-way from 95-feet to 75-feet through wetlands and waterbody crossings. Specifically, DEQ points out that the applicant's Environmental Alignment Sheets do not actually show this proposed narrowing of the construction ROW at any of the steam crossings.[20] The EIS should evaluate this proposed "neck down" and further comprehensively assess riparian vegetation removal related to pipeline alignment when it runs parallel to waterbodies, such as in the case of Spencer Creek.

M. The EIS Fails to Comply with Requirements of 40 C.F.R. § 1502.14

The EIS fails to identify and analyze known alternative methods to install the pipe at each medium and large perennial stream that would eliminate impacts from proposed dry open- cut method (e.g. ,HDD, DP or conventional bore methods). The EIS 2-62 states "Pacific Connector proposes to use the HDD method to cross under the Coos Bay Estuary (MPs 0.3–1.0 and 1.5–3.0) and three major waterbodies (Coos River at MP 11.1R; Rogue River at MP 122.7; and Klamath River at MP 199.4). The EIS 2-63 states : "Pacific Connector proposes to use DP technology to install its pipeline under the western crossing of the South Umpqua River at about MP 71.3 and the associated crossings under I-5, Dole Road, and the Central Oregon & Pacific Railroad. These construction methods will be utilized in an attempt to **avoid impacts** to these riverine systems and the aquatic resources that they support.(emphasis added)" For example EIS 4- 106 states "Contribution of turbidity or sediment from other crossing methods, including DP, bore, and HDD, would be unlikely. DPs and bores would go under waterbodies and avoid contact with flowing streams."

The EIS proposes to avoid impacts with HDD and DP at only 4 of 66 perennial stream crossings. For example, proposed HDD beneath the Rogue River would avoid having to mitigate/minimize streambed disturbance, loss of riparian vegetation, and elevated turbidity caused by removal and

[19] "Chapter 2: Temperature." Rogue River Basin TMDL. Oregon DEQ. December 2008. P. 2-20.
[20] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 62.

fill in the wetted channel. However, the PCGP proposes removal and fill on 62 perennial crossings. In most instances the rationale for using dry open-cut does not even consider avoiding impacts with HDD, conventional bore, direct pipe or some other subsurface drilling method (see Table B.3-4). On 62 perennial stream crossings the PCGP proposed action has chosen to ignore the possibility to avoid stream crossing impacts via HDD, DP or conventional bore design in the EIS. In some instances, PCGP has simply not chosen HDD as an alternative when they admit it's technically feasible. FERC makes no further analysis requirements for PCGP preferences to adversely impact streams with dry-cut methods when other techniques are available that would completely avoid most stream related impacts.

Numerous impacts and risks would be completely **avoided** with HDD, DP or conventional bore for perennial stream crossings as compared to dry open-cut method but the EIS fails to make a side by side comparison of construction methods. The dry open-cut method would require blasting on 34 fish streams that would likely kill and injure some fish despite mitigations. The dry open-cut method would destroy riparian vegetation that shades and cools streams and provides a permanent supply of large wood for fish habitat. The dry open-cut method would destabilize stream banks and put the pipe at risk of exposure due to channel migration. The dry open-cut method would increase turbidity and violate state water quality standards. Visual quality of our forested streams would be degraded. Some fish would die during salvage removal with the dry open cut method. Conversely, HDD, DP or conventional bore would provide for retention of streamside shade, future large wood inputs, stable stream banks, no turbidity, no stream temperature increases, no fish mortality, no visual impacts and no possibility for pipe exposure during channel migrations.

For example, the Lost River is a major perennial stream with endangered fish species and has an orange rating for the stream crossing. PCGP admits HDD or conventional bore is possible but instead they propose the environmentally damaging dry open-cut method that has high risk at this site. We assert that the each and every waterway crossing must be considered for "project design" subsurface drilling that would avoid most impacts to waterways and wetlands. PCGP typically claims that conventional bore at specific waterway crossings is not possible due to topographic constraints. This is true for some but not all waterways. PCGP has failed to provide a valley cross section for each waterway crossing to demonstrate that topographic limitations prevent subsurface drilling. Topographic constraints may be relevant for many but not all waterway crossings. Many waterway crossings are in broad alluvial valleys, several hundred ft wide, where conventional bore appears to be technically possible but is not being considered as an "alternative design" to avoid impacts. Many of these waterways (streams) are habitat for anadromous fishes including the federally listed coho salmon.

We assert that the FERC must not approve dry open- cut with mitigation (minimization) of adverse impacts when these adverse impacts to wetlands and waterways can be <u>completely avoided</u> with conventional bore or some other subsurface drilling method. The EIS discusses alternative alignments (sites) in great detail but fails to adequately or objectively discuss alternative pipeline construction methods at perennial stream crossings that could avoid most removal/fill impacts with HDD, DP or conventional bore.

By failing to consider and propose alternative designs for waterways and wetland crossings the FERC is denied the opportunity to require implementing the environmentally preferable methods for crossing perennial streams. The EIS failed to consider design such as HDD, conventional bore or DP to eliminate the need for mitigating or minimizing impacts associated with dry open-cut on numerous perennial streams and diverted wet open-cut method for the South Umpqua (east).

We identified 21 perennial stream crossing sites from EIS Appendix I. Table I-2. (Fish Utilization, EFH in, and Crossing Techniques and In-Water Work Windows for Waterbodies Crossed by the Proposed Route [revised April 2018]) where alternative construction methods appear feasible for alternative analysis in the EIS (Steinnon Cr., North Fork Coquille River, Middle Cr., East Fork Coquille River, Deep Cr. , Middle Fork Coquille River, Olalla Cr., Rice Cr, North Myrtle Cr, South Myrtle Cr, Fate Cr, Days Cr, South Umpqua River[east] MP 94.73, West Fork Trail Cr., Deer Cr., Indian Cr. , Neil Cr., Salt Cr. N.F. Little Butte Cr., S.F. Little Butte Cr. and Lost River). However, no analysis was developed, violating NEPA.

N. Hydraulic Alteration at Each Pipeline Stream Crossing.

The pipeline will cross tributaries and mainstream rivers within the Coos, Coquille, South Umpqua, Rogue and Klamath basins, most of which are impaired for several water quality parameters. The dry open cut crossings proposed for many of these stream crossings may result in increased erosion, channel migration, avulsion, and/or scour. Channel modifications that increase sedimentation can decrease the depth and frequency of pools, which decreases the assimilative capacity for thermal loading of a stream.[21] Proposed activities to conduct dry open cut technology have the potential to increase sedimentation, modify habitat, decrease dissolved oxygen, and impair the aquatic habitat. In addition to comprehensively reviewing hydraulic alterations at proposed stream crossings related to state water quality standards for parameters including but not limited to sediment, dissolved oxygen, and temperature, the EIS should also fully evaluate the impacts to threatened salmonids.

Oregon DEQ in its denial of the 401 certification for the project points to the potential for proposed waterbody crossings to "cause short- and long-term alterations of stream habitat and hydrology."[22] Specifically, DEQ expressed concerns regarding compliance with the state biocriteria water quality standard in its rationale for the denial.

The EIS should specifically review at the minimum the five stream segments listed as impaired for the biocriteria water quality standard regarding hydraulic alterations at proposed stream crossings. DEQ specifically identifies Olalla Creek (MP 58.78) and North Myrtle Creek (MP 79.12) as impaired for biocriteria and including spawning and rearing habitat for Oregon Coast coho, listed under the Endangered Species Act. Both of these crossings have been identified by the applicant as Level 2 with a high potential for migration, avulsion, and/or scour. Additionally,

[21] "Chapter 2: Temperature." Rogue River Basin TMDL. Oregon DEQ. December 2008. P. 2-20.
[22] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 48.

the EIS should assess the direct, indirect, and cumulative impacts to stream crossings proposed to headwater streams that are hydrologically connected to upper watershed habitat networks. The EIS acknowledges potential hydraulic alterations, stating at 4-107 that:

> Constructing the pipeline would modify streambanks, resulting in an increase in the rates of erosion, turbidity, and sedimentation into the crossed waterbody. An increase in soil compaction and vegetation clearing could also potentially increase runoff and subsequent streamflow or peak flows. The extent of these impacts would depend on streambank composition and vegetation stream type, velocity, and sediment particle size.

Further, the EIS specifically identifies fluvial erosion as a potential hazard, stating:

> Fluvial erosion represents a potential hazard to the pipeline where streams can expose the pipe as a result of channel migration, avulsion, widening, and/or streambed scour.

The EIS must conduct a comprehensive environmental review and require detailed and site-specific plans for each stream crossing, particularly for those identified as at a high or moderate risk of scour, channel migration, and/or avulsion. The EIS should comprehensively review the potential risk for hydraulic and geomorphic alteration upstream and downstream from the impact areas.

In addition, the EIS should fully evaluate temporary and permanent displacement of native soils that may alter in-situ characteristics, including intrinsic permeability. According to DEQ:

> Zones of higher permeability can cause local infiltration, partial stream capture, and create a fish passage barrier. Project-related actions that reduce streamflow may limit habitat availability, alter channel hydrology, and modify hyporheic exchange in riparian areas.[23]

Further, DEQ finds that in places where blasting, rock-sawing, or jackhammering are required, open-cut trenches may be needed that can alter stream geomorphology and create fish passage barriers. Specifically, DEQ states:

> Open cut trenches in bedrock-dominated stream channels are susceptible to upstream propagation of knickpoints created by fractures and joints in the stream's bedrock created during the excavation process. Knickpoint propagation in bedrock-dominated streams can alter stream geomorphology and potentially develop into barriers to fish migration.[24]

[23] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 48.
[24] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 48.

The EIS should comprehensively review construction practices related to flume installation and removal, site restoration, and other proposed activities that can increase sediment releases that may impact substrate characteristics, oxygen availability, and habitat complexity.

Additionally, the EIS should comprehensively evaluate the direct, indirect, and cumulative effects of altering in-stream flow as a result of the proposed activities. The EIS identifies hydrostatic testing and dust control as sources of water withdrawals. The applicant estimates that 31 million to 65 million gallons of water would be required for hydrostatic testing. The EIS states:

> Potential effects on stream flow associated with hydrostatic testing include reduced downstream flows, erosion and scouring at release points, and the transfer of aquatic nuisance species through the test water from one water basin to another. Estimates of potential water intake amounts from streams indicate flows below intake would be reduced by less than 10 percent of typical monthly instantaneous flow rates during the month of withdrawal for all but one (at 35 percent of flow) potential locations during withdrawal (duration about 6 to 11 days at each potential location; Ambrose 2018, see also table 4.5.2.3-6 in section 4.5 for withdrawal amounts by stream). Final selection of intake rates and sites would be reviewed by ODFW and OWRD prior to testing, so that potential effects from flow reductions would be unlikely.

The EIS should thoroughly evaluate the direct, indirect, and cumulative impacts on water quality of proposed water withdrawals for hydrostatic testing. The applicant provides minimal information regarding the source and discharge of hydrostatic testing water. Not only would these water withdrawal impact existing water rights, but reducing flows can also impair water quality, in violation of water quality standards.[25]

Further, the EIS does not evaluate the impacts of water withdrawals for dust control, instead stating that "it is not possible to know how much water would be needed for dust suppression on the pipeline construction right-of-way, during dry seasons."[26] The applicant estimates that approximately 75,000 gallons for 25 water trucks per day would be needed. The EIS does not comprehensively evaluate the impacts of water withdrawals related to dust control. If, as the EIS states, the "total amount of water needed is unknown,"[27] then FERC cannot conclude as the EIS states that "the overall change in any specific reduction in streamflow from this water use would likely be unsubstantial."[28]

O. Potential Interference of Subsurface Flow Regimes from Pipeline Construction.

The EIS fails to comprehensively analyze the direct, indirect, and cumulative effects of the proposed activities on subsurface flow regimes. The EIS acknowledges that pipeline construction can affect surface waters, stating:

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[25] *PUD No. 1 of Jefferson Cty v. Washington Dept. of Ecology*, 511 U.S. 700 (1994).
[26] 2019 DEIS at 4-111.
[27] Id.
[28] Id.

> Surface waters could be affected due to alteration of groundwater flow where the pipeline intersects waterbodies. The hyporheic zone is a region beneath and alongside a stream bed where there is mixing of shallow groundwater and surface water. The flow dynamics and behavior in this zone is recognized to be important for surface water and groundwater interactions, as well as fish spawning, among other processes.[29]

The EIS specifically states that detailed site-specific analysis is necessary to analyze potential interference with subsurface flow regimes. However, the EIS only relies upon qualitative analysis provided by the applicant. Specifically, the EIS states:

> It is difficult to measure hyporheic exchange without detailed site-specific study, but qualitative observations of bed and bank material, stream gradient, location within a watershed, and morphological features can help indicate whether a stream has an active and functional hyporheic zone. GeoEngineers (2017g) developed weighting factors to assign criteria of high, moderate, and low sensitivity to the crossing locations. The analysis used these qualitative parameters to rank how sensitive a stream crossing may be to potential hyporheic zone alteration.[30]

The EIS identifies fifteen stream crossings that the GeoEngineers report categorized as having a high sensitivity to hyporheic zone alteration.[31] However, although these crossings may be identified in the GeoEngineers report, the EIS provides no additional analysis of the sensitivity of these crossings or the direct, indirect, or cumulative effects of pipeline construction on the hyporheic zone for these sensitive sites.

The EIS does provide some additional analysis for one stream crossing at South Fork Little Butte Creek in the Rogue Basin. Specifically, the EIS states:

The Forest Service has expressed concern that the crossing of South Fork Little Butte Creek would go through basalt and andesite bedrock, and therefore a site-specific crossing would need to address the potential for groundwater interception and flow at and near the crossing. A site-specific drawing for Little Butte Creek located on NFS land was included in Appendix 2E of Resource Report 2 with Pacific Connector's September 2017 application to the FERC. The crossing would need to address the potential for groundwater interception and flow at and near the crossing since it is a critical coho stream which flows through andesite and basalt. The *Stream Crossing Hyporheic Analysis* (GeoEngineers 2013c; 2017g) determined that South Fork Little Butte Creek crossing had high hyporheic sensitivity. Therefore, BMPs would be implemented to mitigate for this possible effect.[32]

However, the EIS does not provide additional analysis for the South Fork Little Butte crossing nor does it provide comprehensive analysis of the direct, indirect, and cumulative effects of hyporheic zone alterations at the other stream crossings identified as highly sensitive.

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[29] 2019 DEIS at 4-112.
[30] Id.
[31] 2019 DEIS at 4-113.
[32] 2019 DEIS at 4-140.

Additionally, the EIS fails to comprehensively evaluate the direct, indirect, and cumulative effects of stream crossings proposed for 303(d) listed waterbodies and hyporheic zone alterations. DEQ in its denial of the 401 certification for the project notes that the applicant proposes stream crossings in many waterbodies that are impaired for temperature. Regarding impacts to the hyporheic zone as a result of proposed activities, DEQ states:

> Dewatering actions proposed by JCEP would reduce the volume of cold groundwater available for hyporheic exchange in the reach below each waterbody crossing. This reduction in groundwater exchange below crossings would reduce the assimilative capacity for thermal loading. JCEP proposes to alter groundwater flow at numerous stream to construct its pipeline. Many of these streams are currently impaired for temperature. For example, at pipeline stream crossing at Milepost 58.78, Olalla Creek is limited for temperature year-round and is under an approved TMDL. Similarly, DEQ has placed Rice Creek (Milepost 65.76), South Umpqua River (Milepost 71.27), North Myrtle Creek (Milepost 79.12), South Myrtle Creek (Milepost 81.19), and many others on the 303(d) list for temperature. These streams are under an approved temperature TMDL.[33]

The EIS does not adequately assess the potential impacts to the hyporheic zone, such as reduced groundwater exchange and decreased assimilative capacity for thermal loading, from the proposed stream crossings that are already impaired for temperature.

Further, DEQ states that the proposed activities, including but not limited to dry open-cut trenching, backfill placement, and restoration actions could temporarily displace native soils that might alter intrinsic permeability. The EIS should comprehensively evaluate the direct, indirect, and cumulative effects of proposed activities that would displace native soils and alter permeability.

Additionally, the EIS fails to adequately assess the direct, indirect, and cumulative effects of temporary and permanent access roads in shallow groundwater areas on subsurface flow regimes.

The EIS also does not comprehensively evaluate the potential impacts to groundwater as a result of HDD. The September 2017 GeoEngineers report states:

> During our borings, we were not able to measure groundwater levels due to the presence of drilling fluid. However, based on the observed relative moisture content of the samples, and the locations and elevations of the borings relative to the Coos River, we estimate that groundwater was at or near the ground surface at the time of drilling. We anticipate that groundwater levels will fluctuate with precipitation, site utilization and other factors. During heavy prolonged precipitation, and probably during most of the winter months, we expect that groundwater will be near or at the surface

[33] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 66.

> of the site…[34]
>
> We did not measure groundwater levels upon completion of the borings because of the presence of drilling fluid in the holes at the time of drilling. We anticipate that groundwater levels will mimic the elevation of the Rogue River around 1,410 feet mean sea level (MSL). We anticipate that groundwater levels will fluctuate with precipitation, site utilization and other factors. During heavy prolonged precipitation, and probably during most of the winter months, we expect that groundwater will be near or at the surface of the site on the east side of the Rogue River.[35]

In its denial of the 401 certification for the project, DEQ specifically identifies the lack of subsurface data for the Coos Bay HDD, stating:

> JCEP prepared an HDD Feasibility Report that includes geotechnical engineering, recommendations, and HDD design criteria for the three proposed HDD river crossings. The report also includes a feasibility analysis of completing an HDD crossing beneath Coos Bay estuary. However, JCEP's consultant states that the "* * *feasibility evaluation of the proposed Coos Bay East HDD is based on limited subsurface data. Our conclusions should be considered preliminary pending completion of a subsurface exploration program. Resource Report 2, Appendix G.2. The feasibility analysis generally finds a low risk of drilling fluid releases. However, at the east end of the crossing approaching Kentuck Slough there is a high risk of hydraulic facture and drilling fluid surface release. Resource Report 2, Appendix G.2., at 9. The evaluation identifies potential mitigation for this risk, but it is unclear what specific mitigation measures JCEP is currently proposing.

The EIS should fully evaluate the potential alterations to the subsurface flow regime as a result of HDD crossings.

Further, removal of riparian vegetation that results in increased sedimentation can impact interactions between surface water and groundwater, further impairing streams for temperature. As stated in the Rogue Basin TMDL: "Excess fine sediment can also decrease permeability and porosity in the hyporheic zone, greatly reducing hyporheic flow, and resulting in less cool water inputs (Rehg et al. 2005)."[36]

Without information demonstrating the potential effects of pipeline construction, including streambed and bank disturbance and placement of pipe and backfill, on the hyporheic regimes of affected waterbodies, FERC does not have the requisite information to determine the environmental impacts of the Project.

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[34] Coos River HDD Pacific Connector Gas Pipeline Project. GeoEngineers. 1 September 2017. P. 5. PCP Part 2 Appendix B. P. 1476.

[35] Rogue River HDD Pacific Connector Pipeline Project Jackson County, Oregon. 1 September 2017. P. 6. Pacific Connector Pipeline Part 2 Appendix B. P. 1577.

[36] "Chapter 2: Temperature." Rogue River Basin TMDL. Oregon DEQ. December 2008. P. 2-20.

P. Post-Construction Restoration at Stream Crossings.

The EIS fails to comprehensively evaluate the direct, indirect, and cumulative effects of construction and post-construction restoration at stream crossings. For many stream crossings, the applicant proposes to use dry open-cut methods (dam and flume, or dam and pump). According to the EIS, this effectively means "allowing trenching across streams in the dry."[37] The EIS acknowledges that many of these dry open-cut stream crossings are proposed for waterbodies that support or are likely to support anadromous salmon and/or steelhead, cold water resident fish, estuarine fish, or important endemic species.[38]

In its denial of the 401 certification for the project, DEQ identifies significant concerns with dry open-cut crossing methods, particularly for streams that are impaired for pollutants such as temperature and sediment. Specifically, DEQ states:

> To reduce impacts, JCEP proposes to complete these stream crossings in dewatered areas isolated from normal streamflow using temporary dams. JCEP's Stream Fluming Procedures and Dam and Pump Procedures describe the method for removing the flume upon completion. Upon removal, JCEP expects that short-term turbidity "could increase considerably" as the "streambed flushed clean of sediments left over from construction". DEQ has identified three waterbody crossings that are listed on the DEQ's 2012 303(d) list as impaired for sedimentation (S. Fork Little Butte Cr., MP 162.45; Spencer Cr. MP 171.07; Clover Cr. MP 177.76). In these particular areas, any increase in sediment loading is prohibited, at least until completion of a Total Maximum Daily Load that includes an allocation for the proposed activity, or until completion of an implementation plan that demonstrates that increased loading would be avoided. Under a Clean Water Act Section 404 Permit, DEQ would allow limited duration turbid discharges, but only if the project applies all practicable turbidity controls to minimize these discharges. JCEP's proposed methodologies include dewatering of construction areas and dewatering and removal of temporary dams. JCEP has not presented how it would minimize sediment and turbid discharges during these activities.[39]

Further, DEQ specifically requested site-specific construction and restoration plans for dry open-cut stream crossings. DEQ states:

> The importance of careful, detailed, site-specific planning for pipeline crossing construction and stream restoration is well-documented in the construction of the Ruby Pipeline. In the Ruby Pipeline project, a team of experts developed an approach to minimize impacts at 849 stream crossings. DEQ's March 11, 2019 information request is consistent with the approach used in the Ruby Pipeline project.[40]

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[37] 2019 DEIS at 4-93.
[38] 2019 DEIS at 4-271.
[39] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 30.
[40] Id.

DEQ identifies specific concerns with the construction, operation, and maintenance of pipeline stream crossings and their potential to discharge sediment and other pollutants to streams. In fact, the agency determines that the permanent pipeline ROW will function as a primitive road and is likely to discharge sediment to streams at a rate equivalent to a gravel road with ruts. Further, the slope breakers that the applicant proposes to install within 200 feet of streams would also likely deliver sediment to those streams during and following construction.[41] The EIS fails to require and analyze site-specific waterbody crossing and restoration plans to minimize pollution.

Q. Marbled Murrelets (*Brachyramphus marmoratus*).

The pipeline right-of-way runs through prime old-growth marbled murrelet habitat, some of the last of the murrelets Coast Range habitat.

Marbled murrelet populations have declined over much of their range, mostly due to current and historic loss and fragmentation of older-aged forest breeding habitat. Primarily because of logging, populations have been plummeting by 3.7% per year[42]. The primary reason for declines continues to be sustained low recruitment from the loss of quality nesting sites and increases in predation in nesting habitat. In Oregon, nest success has been estimated at only 36%.[43] In fact, the Oregon Department of Fish and Wildlife recognizes that emerging anthropogenic threats to murrelets are "energy development projects"[44] such as the Jordan Cove project.

The Jordan Cove Project will further reduce murrelets in their prime habitat. Construction of the Project would remove a total of about 806 acres of Marbled murrelet habitat (suitable, recruitment, capable), including about 78 acres of suitable habitat removed from 37 occupied stands. There is the potential that effects could extend over a total of 7,145 acres of suitable nesting habitat in the terrestrial nesting analysis area where Project-related noise may affect murrelet behavior, including breeding activities. (EIS 4-323-324)

The EIS (4-323-324) also discloses there are 175 occupied and presumed occupied MAMU stands within 0.25 mile of the proposed action, or within 0.5 mile of federally designated critical habitat that would be affected by the proposed action.

Concerning the effects to murrelets extending over 7,145 acres of suitable nesting habitat in the "terrestrial nesting analysis area" (EIS 4-324), it is unclear in the EIS if the "terrestrial nesting analysis area" (not defined in the EIS) includes the edge effects that would harm murrelet reproduction. While the 2019 EIS is unclear, the 2015 EIS told us (4-469) that 2,264 acres of murrelet habitat would be within 300 feet of newly created edges. Thousands more acres will

[41] Evaluation and Findings Report: Section 401 Water Quality Certification for the Jordan Cove Energy Project. Oregon Department of Environmental Quality. May 2019. P. 50.
[42] Oregon Department of Fish and Wildlife. Status Review of the Marbled Murrelet. January 2018. https://www.dfw.state.or.us/agency/commission/minutes/18/02_Feb/Exhibit_D/2%20ODFW%20Marbled%20Murrelet%20Status%20Review%201.18.18.pdf
[43] id. Page iii
[44] id. Page iv

have edge-impacts within 700 feet of clear-cuts.

The 2019 EIS failed to fully consider edge effects to murrelets even though the Pacific Connector Pipeline right-of-way would create miles of new edge habitat. Marbled murrelets currently have low fecundity levels in Oregon caused mostly by nest predation because of edges caused by forest fragmentation. The vast majority of murrelet nest failure is due to predation from corvids who otherwise cannot penetrate interior forest habitat. The EIS failed to fully consider this impact on murrelets.

The right-of-way corridor, plus the Temporary Extra Work Areas (TEWA) to be clear-cut, will essentially cause all the murrelets in nearby stands to be unsuccessful in nesting, and allow predators unprecedented access to what was murrelet-secure interior forest habitat.

The Oregon Department of Fish and Wildlife finds that "Forest fragmentation and "edge effects" can increase predation rates [of murrelets] and may result in other adverse effects to remaining patches (e.g., greater windthrow damage, micro-climates less suitable to epiphyte growth)."[45]

The EIS (4-166) points out that studies show edge effects in "old-growth Douglas-fir forests in the Pacific Northwest" can extend to more than 785 feet past the pipeline corridor. However, the EIS never quantified how many acres in murrelet habitat this would be. The EIS (4-166) did disclose that 1,449 acres of late successional old growth forests would be impacted by being within 100 meters of newly created edges. However, 100 meters is not inclusive of edge impacts to murrelet habitat, as edge effects penetrate further into forests.

The EIS also failed to consider the impacts of the Uncleared Storage Areas (UCSAs) running for 100' on either side of the clear-cut in murrelet habitat. This could push some impacts of edges out an additional 100'. UCSAs will impact ground vegetation and understory trees, opening up the canopy and degrading adjacent interior forests. UCSAs will put noise disturbance another 100 feet into edges.

On page 4-518-519 of the EIS there is a discussion of edge effects on LSRs on National Forest Service lands. This same analysis should have been considered for Marbled murrelet impacts on BLM and private lands. The EIS simply failed to do the same analysis for impacts BLM lands. Only on Forest Service lands does the EIS consider that "effects are considered to extend for 100 meters from the created edge in LSOG forest", and, "effects extend out approximately two times the average tree height" on Forest Service lands. In the Coast Range, home of the Marbled murrelet, the average tree height of a 200-year-old tree (site-potential tree height) is 220 feet tall[46]. Therefore, impacts for Marbled murrelets could have been considered further than 440 feet on either side of the pipeline corridor. Jordan Cove never analyzed how many acres of this would be impacting murrelets.

Windthrow especially can result from the clearcutting areas on ridges exposed to high winds,

[45] Oregon Department of Fish and Wildlife. Status Review of the Marbled Murrelet. January 2018. page iii

[46] Coos Bay BLM watershed analysis.

exactly where the pipeline is located in the coast range. Studies found that sites at clear-cut edges had less moss than interior murrelet nest sites and natural edge sites (stream corridors) due to stronger winds, higher temperatures, and lower moisture retention when compared with interior sites. Maintaining microclimate is critical to maintaining moisture in murrelet habitat to help moss development and aid in proper thermo regulation of marbled murrelet adults and chicks. The worst forest-type combination for murrelets is suitable murrelet habitat adjacent to clear-cuts and regenerating forests with berry producing plants, which is optimal habitat for predators. This is exactly what the Pacific Connector Pipeline does, clear-cuts next to suitable habitat (unoccupied or occupied) with plans to plant berry producing plants in the outer parts of the clear-cut[47]. This attracts known predators at active murrelet nests, such as Common Ravens (Corvus corax), Steller's Jays (Cyanocitta stelleri), and American Crows (Corvus brachyrhynchos).

The EIS (4-325) for the proposed action admits that the Project is likely to adversely affect Marbled murrelets because:

- 82 MAMU stands are within 0.25 mile of the pipeline that could be constructed during the breeding season.
- 168 MAMU stands are within 0.25 mile of access roads that could be used during pipeline construction in the breeding season.
- The Pacific Connector Pipeline Project would remove approximately 78 acres of suitable nesting habitat within the range of the MAMU; or approximately 0.5 percent of the 14,310 acres of suitable habitat available in the terrestrial nesting analysis area.
- The Pacific Connector Pipeline Project would modify approximately 656 acres of suitable, 2,058 acres of recruitment, and 2,449 acres of capable habitat.
- Turbidity generated during HDD if a frac-out occurred could affect local major prey species for chicks such as anchovy, sand lance, and smelt.
- LNG carrier traffic in the estuarine analysis area to the Jordan Cove terminal would cause potential behavioral effects on foraging MAMU, and fuel and lubricant spills from LNG carriers would cause injury or mortality to foraging MAMUs.

Additionally, the quality of the remaining habitat would be reduced due to habitat fragmentation and the addition of edge along the pipeline corridor. Removal of suitable nesting habitat by harvest of old-growth timber has been cited as the primary reason for the species' decline (FWS 1992a). Suitable MAMU nesting habitat takes a long time to develop (more than 250 years on average); therefore, any removal of suitable habitat may affect the recovery of the MAMU. Jordan Cove has not proposed compensatory mitigation. In the absence of mitigation, the Project would result in long-term negative effects on this this threatened species.

Project related noise above ambient levels will disturb or disrupt Marbled murrelets and interfere with essential nesting behaviors. Blasting for the pipeline trench may occur within 0.25 mile of 11 MAMU stands between April 1 and September 30. Helicopter use within 0.25 mile of eight occupied MAMU stands during the breeding period (between April 1 and September 15) could occur and disturb MAMU adults and nestlings. In fact, little nestling murrelets could be blown

[47] POD Appendix I. Erosion Control and Revegetation Plan. Table 10.12-1. Page 39.

out of the nest tree in at least six occupied MAMU stands from rotor wash due to blasting. (2019 EIS 4-325)

Blasting for the pipeline trench may occur within 0.25 of Marbled murrelet stands between April 1 and September 30. Helicopter use for removal of timber during pipeline construction within 0.25 mile of 9 Marbled murrelet stands during breeding season and potentially disturb adults and nestlings and blow another 7 little nestlings out of nest trees within seven Marbled murrelet stands due to rotor wash for logging. (2019 EIS 4-325)

Construction of the pipeline (including clearing of timber, access road use, helicopter use, and blasting), as well as pipeline operation and maintenance, would occur within the MAMU breeding season and within 0.25 mile of known MAMU stands. These activities will disturb or disrupt MAMUs and interfere with essential nesting behaviors during the breeding season. (2019 EIS 4-325)

Jordan Cove has not proposed compensatory mitigation, and the BLM is not allowed to ask for it. In the absence of mitigation, the Project would result in long-term negative effects on this threatened species. (EIS 4-326)

EIS 4-197, table 4.5.1.2-3 lists Birds of Conservation Concern with 50 miles of pipeline. For some reason, the Marbled Murrelet is listed has having “no analysis”, and insufficient or no data, even on confirmed breeding dates! Jordan Cove should look again. There is abundant analysis and data on the Marbled murrelet.

Critical Habitat: The proposed action would also jeopardize the continued existence of the Marbled murrelet and critical habit supporting this species. A likely to adversely affect determination is warranted for Marbled murrelet critical habitat because the project may remove or damage trees with potential nesting platforms, or the nest platforms, decreasing the value of the trees for future nesting use as well as damage to trees adjacent to nesting platforms that provide habitat elements essential to the suitability of the potential nest tree or platform.

Ten occupied and 24 presumed occupied MAMU stands occur within CHU OR-06 (b, c, and d) within the proposed terrestrial nesting analysis area. Overall, construction of the Pacific Connector Pipeline Project would remove about 4 acres of suitable MAMU nesting habitat (PBF- 1) and about 12 acres of recruitment habitat and 15 acres of capable habitat (both of which make up PBF-2) within CHU OR-06-d. (EIS 4-324)

Pacific Connector claims (4-324) to implement measures to reduce effects on MAMU habitat, by using UCSAs, and replanting conifer trees outside of the 30-foot-wide maintenance corridor on certain federal lands and non-federal lands. These measures are completely inadequate. Trees planted in the 30-foot-wide maintenance corridor won’t mitigate edge effects for decades, maybe centuries, at which time any impacted murrelet nests will be long gone. And it is unclear how Uncleared Storage Areas (UCSAs) will reduce effects on murrelet habitat. In fact, UCSAs will bring some impacts further into murrelet habitat, like reduced canopy covers, increased noise, and increased slash and fire danger.

Elsewhere the 2019 EIS claims (4-166) to minimize fragmentation, and thus impacts to murrelets, by trees that would be planted in the outer half of clear-cut right-of-way. As stated above, this will not minimize fragmentation for many decades, so any wildlife impacted by fragmentation will already be dead before this kicks in. The EIS also claims (4-167) that in 50 years those planted trees could be 120 feet tall. That is a stretch. The EIS fails to offer any data to back up this exaggerated growth claim.

Finally, Marbled murrelet nests are notoriously difficult to locate because of their cryptic nesting behavior and the fact that nests occur high up in trees in the Coast Range and are often in rugged terrain. Therefore, when the pipeline clear-cuts near occupied stands, it is impossible to tell if the actual nest tree is being cut down.

R. Northern Spotted Owl (*Strix occidentalis caurina*).

2008 is apparently the last survey done for Northern Spotted Owls (NSO) along the pipeline route. At that time, over a decade ago, surveys found NSO pairs at 20 locations. Six sites had resident single owls. (EIS 4-327)

Direct effects on NSOs would include the removal of nest trees during the breeding season and noise disturbance due to road and pipeline construction during the breeding period. Noise includes blasting and helicopter use during construction. (EIS 4-327).

The Project would affect habitat within 97 NSO home ranges and 9 nest patches. 37 miles of the pipeline route would cross 7 designated critical habitat sub-units. Construction would remove 517 acres of nesting, roosting, or foraging (NRF) habitat for the spotted owl. Additionally, 214 acres of nesting roosting foraging (NRF) habitat would be used as Uncleared Storage Areas (UCSAs) where equipment would be parked and used as disposal for forest slash. (EIS 4-327

Additionally, 1,158 acres of dispersal habitat would be clear-cut. 919 acres of spotted owl capable habitat would be clear-cut. Edge impacts include 13,294 acres of spotted owl habitat occur within 328 feet of the clear-cut. 4,326 acres of interior spotted owl habitat would be affected by these edge effects. (2019 EIS 4-327).

These are significant long-term impacts to the northern spotted owl. EIS, 4-327. The EIS offers insignificant mitigation for these impacts, especially on BLM lands and impacts during the late breeding season for the owl.

Activities from pipeline construction during the late breeding period (July 16 through September 30) could disrupt or disturb spotted owls at 10 activity centers within 0.25 mile of the pipeline ROW. Construction activities off the ROW would occur during the entire breeding season and could disturb spotted owls at two known activity centers located within 0.25 mile of the pipeline project. Noise from blasting during pipeline construction within 0.25 mile of NSO sites during the late breeding season would occur and could increase the risk of predation to fledglings that are not able to escape during the latter part of the breeding season. (EIS 4-328)

The removal of 517-acres of high quality NRF habitat would result in effects on nest patches,

core areas, and home ranges of spotted owls, *some of which are currently below thresholds needed to sustain NSOs*. Once suitable NRF habitat is reduced in the spotted owl's home ranges, there is an increased likelihood that spotted owls remaining in the Project area would be subject to displacement from nesting areas, decreased survival, increased predation and diminished reproductive success for nesting pairs (EIS 4-328, 329).

Considering the current poor status of the spotted owl, this amount of clearcutting and other impacts to their habitat would be difficult, if not impossible, to recover from. The impacts to 97 spotted owl home ranges includes 58 which are below sustainable threshold levels of suitable habitat for continued persistence in their home range and/or core area. (EIS 4-329).

The project would impact designated critical habitat for the Northern Spotted Owl. The EIS admits that a likely to adversely affect determination is warranted for Northern Spotted Owl critical habitat. (EIS 3-111). The proposed action would remove or downgrade the physical and biological features (PBFs) in critical habitat subunits ORC-6, KLE-1, KLE-2, KLE-3, KLE-4, KLE-5, and ECS-1. (EIS 4-329).

No mitigation or "best management practices" will fix these problems. The quality of the remaining habitat would be reduced due to habitat fragmentation and the addition of miles of edge along the pipeline corridor. Habitat loss due to forest clear-cutting has been the primary factor causing declines of the spotted owl (FWS 1992c) and will affect survival and reproduction of the owls. (EIS 4-329)

Jordan Cove has not proposed compensatory mitigation; therefore, the Project would result in long-term negative effects on the Northern Spotted Owl. (EIS 4-326)

442 acres would be clear-cut from designated spotted owl sanctuaries, Late Successional Reserves (LSRs). (EIS 4-327) Over half of that is on BLM lands (EIS 4-443), where 268 acres of LSRs would be clear-cut, plus riparian reserves, impacting the spotted owl and marbled murrelet habitat on Roseburg and Coos Bay BLM lands.

EIS page 4-517 says there are no "unmapped" reserves on national forest lands impacted by the pipeline. However, TABLE 4.7.3.3-2 describes an acre of unmapped reserve impacted in the Rogue River National Forest.

The EIS describes on page 4-517 how clearcutting LSRs are mitigated on Forest Service lands, but fails to offer any mitigation for BLM lands, where LSRs and Riparian Reserves, designed to protect Northern Spotted Owls and Marbled Murrelets, there is no mitigation offered. On Forest Service lands, one offered mitigation is to "protect" matrix lands by redesignating them as LSRs. However, the EIS failed to determine if those matrix lands were ever threatened with logging. Just changing a designation is no mitigation for the spotted owl. Meaningful mitigation would have been to increase acres of public lands or obtaining conservation easements on private land.

S. Mitigation of Impacts to Marbled Murrelets and Northern Spotted Owls Is insufficient.

The pipeline would impact over 750 acres of late stage old-growth forest that provides habitat to marbled murrelet, northern spotted owl, and other federally listed threatened and endangered species. (EIS ES-4). Up to 3,504 acres of forest would be affected by being within 100 meters of newly created edges. Including 1,449 acres of LSOG forests. (EIS 4-166). Therefore, the Project is likely to adversely affect 13 federally listed threatened and endangered species including the marbled murrelet, northern spotted owl, and coho salmon (ES-5). These significant impacts on federal resources are in addition to the loss of LSOG forests since 1850 in the Coast Range, West Cascades, and Klamath Mountains ecoregions of Oregon, which is estimated to be almost 90 percent (ODFW 2016a). (EIS 4-158)

In order to compensate for significant adverse impacts to federal public land resources, the EIS proposes a series of planned mitigation measures on and off National Forest lands (EIS 2.1.5 and appendix F.2). The BLM is proposing no compensatory mitigation measures. Forest Service "mitigation" includes planned timber harvest, road reconstruction, fire suppression activities, thinning, land reallocation, hazardous fuels reduction, snag creation and other measures. The EIS states that this "mitigation" is required to account for adverse effects from forest plan amendments that permit the violation of forest plan requirements.

Notably, however, the EIS does not analyze the environmental consequences of undertaking this "mitigation" on Forest Service lands, or the lack of mitigation on BLM lands. If the mitigation is required as part of FERC's (or the land management agencies') authorization of the proposed project, then the EIS is required to assess the environmental consequences of those actions. 40 C.F.R. §§ 1508.25, 1508.25(a)(1) (connected actions); *Robertson v. Methow Valley*, 490 U.S. at 352 ("mitigation [must] be discussed in sufficient detail to ensure that environmental consequences have been fairly evaluated"); *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1381 (9th Cir. 1998) ("mere listing of mitigation measures is insufficient to qualify as the reasoned discussion required by NEPA") (setting aside EIS in part on grounds that the USFS's mitigation analysis contained only "broad generalizations and vague references"); *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1151 (9th Cir. 1998) ("Without analytical detail to support the proposed mitigation measures, we are not persuaded that they amount to anything more than a 'mere listing' of good management practices").

If the mitigation is not required, then the adverse effects of violating several Forest Service forest plans are not accounted for in the EIS, in violation of NEPA. *Southwest Ctr. for Biological Div. v. Bartel*, 470 F. Supp. 2d 1118 (S.D. Cal. 2006); *Sierra Club v. Marsh*, 816 F.2d 1376, 1386 (9th Cir. 1987); *Sierra Club v. Babbitt*, 15 F.Supp.2d 1274, 1282 (S.D. Ala. 1998); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 935-36 (9th Cir. 2008).

Moreover, it appears impossible that FERC can guarantee that the proposed mitigation on Forest Service lands occurs. While the EIS assumes that Jordan Cove will provide funding to the land management agencies to support the suite of mitigation, there is no estimation of the cost of such mitigation or guarantee that it will occur. For example, mitigation projects will require additional NEPA analysis (EIS 1-10) and public involvement, which may – and in fact should – result in

change to the action. Those changes may not fully compensate for the adverse effects from the Jordan Cove pipeline that required an obviation of forest plan requirements. Furthermore, there is no guarantee that the mitigation projects will survive legal scrutiny, which would result in an unmitigated effect stemming from the implementation of the Jordan Cove pipeline project.

Given that FERC and the applicant cannot guarantee that any of the mitigation proposed to compensate for the violation of forest plan requirements, the EIS conclusion that amending the various forest plans is arbitrary and capricious. 5 U.S.C. § 706(2)(A).

T. Mitigation for spotted owls on National Forest lands.

Mitigation for spotted owls on National Forest lands includes converting some matrix lands to LSRs. 585 acres on the Umpqua National Forest would be changed from Matrix to LSR and 522 acres would be changed on the Rogue River National Forest. (EIS 2-27 and 2-30). This is insufficient mitigation for several reasons. For example, occupied owl sites in the matrix are automatically converted to an LSR anyway, so there is no extra benefit to endangered birds for this being done as mitigation.

The EIS implies that spotted owl occupied habitat in the matrix would become LSR. This is wrong. Occupied habitat in the Matrix is considered an LSR as soon as it is determined to be occupied. This mitigation gives us no additional protected lands. If the matrix land slated to be converted to LSR contains unoccupied owl nesting habitat, the Forest Service couldn't log it anyway because the Spotted Owl Recovery Plan (RA 32) requires that this habitat cannot be degraded. So, habitat on matrix lands (and unmapped LSRs) being converted to LSR is no mitigation for clearcutting habitat.

Proposed mitigation that converts matrix to LSR in young forests, especially managed plantations, is also no help to the spotted owls because the endangered birds need the quality of habitat being clear-cut, not future habitat they cannot use until after they go extinct.

Fire suppression should not be used as mitigation. Tools for fire suppression are the most common mitigation offered in the EIS for the pipeline's impacts to spotted owls. This includes fuel reduction projects, commercial timber sales that thin forests, and fuel breaks.

The basic concept in the EIS that fire-suppression is necessary to protect wildlife from wildland fire is flawed. The EIS claims (4-450) that "Stand density fuel breaks would reduce the threat of losing late-successional habitat to fire. High intensity fire has been identified as the single factor most impacting late successional and old growth forest habitats on federal lands in the area of the NWFP". No studies were cited to back up this claim, likely because this is unfounded. Studies disagree and come to a different conclusion. The EIS failed to consider these other relevant studies.

For instance, FERC must consider the Baker Study[48]. Instead of claiming that fire harms spotted

[48] William L. Baker, Historical Northern Spotted Owl Habitat and old-growth dry forests maintained by mixed-severity wildfires (December 2014). Published in Landscape Ecology.

owl habitat, the Baker study finds the opposite. It uses records in dry forests where northern spotted owns are known to exist to demonstrate they were historically mixed-severity-fire adapted. Such fires actually maintained habitat for owls. They did not degrade habitat.

This is significant in terms of whether thinning to push these forests into lower fuel loads, as proposed in the EIS, can be justified as ecologically restorative. The Baker study concludes: Mixed- and high-severity fires strongly shaped historical dry forests and produced important components of historical NSO habitat. Focus on short-term loss of nest sites and territories to these fires is mis-directed. Fuel treatments to reduce these natural fires, if successful, would reduce future habitat of the NSO in dry forests.

The Odion study[49] also shows that most fire systems in western North America were mixed severity systems and that thinning can be a bigger risk than the presumed fire risks to the northern spotted owl. If anything, we currently have a fire deficit in much of Oregon. The Odion study found that:

> … the future amount of spotted owl habitat that may be maintained with these rates of high-severity fire and ongoing forest regrowth rates with and without commercial thinning. Over 40 years, habitat loss would be far greater than with no thinning because, under a "best case" scenario, thinning reduced 3.4 and 6.0 times more dense, late successional forest than it prevented from burning in high-severity fire in the Klamath and dry Cascades, respectively. Even if rates of fire increase substantially, the requirement that the long-term benefits of commercial thinning clearly outweigh adverse impacts is not attainable with commercial thinning in spotted owl habitat. It is also becoming increasingly recognized that exclusion of high-severity fire may not benefit spotted owls in areas where owls evolved with reoccurring fires in the landscape.
>
> Therefore, the EIS assumption that wildland fire is bad for owls is flawed, which has produced flawed mitigation proposals in the EIS demanding further evaluation.

Thinning and fuel breaks should not be used as mitigation. Thinning can increase fire risks by drying out the forest with increased sunlight and logging slash. Fuel breaks are also ineffective because the landscape is "fuel rich" and the fuel breaks are relatively narrow. Wind driven embers can easily jump the pipeline clearance. Any fuel break that is over a few years old will be thick with small trees and brush, increasing the fire hazard. The EIS offers no plan to maintain these impractical firebreaks over time rendering them even more useless as a mitigation measure.

The PCGP plans to replant the outer half of the right-of-way with trees. This replanting will occur between the fuel break and the permanently cleared right-of-way. Therefore, in just a few years, the fuel-break will not be directly connected to the cleared right-of-way, making it less effective. Mitigation projects should provide benefits beyond just a few short years.

December 2014. (Baker, 2014)

[49] Dennis C. Odion, et al., Effects of Fire and Commercial Thinning on Future Habitat of the Northern Spotted Owl (2014). Published in The Open Ecology Journal, 2014. (Odion, 2014).

Studies[50] have found fuel breaks ineffective:

> …fuel break performance and benefit is based on the questionable expectation that fire suppression will be capable of "stopping" fires after initial attack fails… Utilizing fuel breaks involves a large burnout operation, which may be of a size equal to the original wildfire, take place regardless of the fire behavior at its current location, and produce negative effects on wildland vegetation greater than the original wildfire. Maintenance costs of fuel breaks are often ignored by proponents but maintenance is a perpetual burden that is likely to divert efforts from managing fuels and vegetation on the remaining majority of the landscape.

The EIS also fails to conclude that a wildland fire will only happen on Federal land and that the fuel reduction will be fresh enough that it can actually reduce the fire spread.

The commercial aspect of the mitigation is also problematic. Mitigation projects that are commercial, i.e., makes money and pays for itself with timber sales, is not helpful mitigation. Mitigation should be for projects that would otherwise not get done due to financial constraints. The EIS failed to account for the timber sale receipts received from selling the logs.

Using commercial logging as mitigation allows Pacific Connector to extract far more trees from an LSR than otherwise would be allowed.

U. Other Mitigation.

Fire suppression should not be used as mitigation. Tools for fire suppression are the most common mitigation offered in the EIS for the pipeline's impacts to spotted owls and marbled murrelets. This includes fuel reduction projects, commercial timber sales that thin forests, and heli-ponds.

Pacific Connector would fund various projects on federal lands that would improve forest structure and health and reduce the effects of wildfires. The EIS erroneously considers fire-suppression to have caused a problem in the stand structure of moist forests in the Coast Range. Scientists have refuted this. Moist forests in the western half of the proposed pipeline do not suffer the effects of fire-suppression because the natural fire-return interval is hundreds of years. Any EIS reference to problems caused by fire suppression in the first 70 miles of the pipeline must be corrected.

Even in dry forests, the basic concept in the EIS that fire-suppression is necessary to protect wildlife from wildland fire is flawed. Thinning can increase fire risks by drying out the forest with increased sunlight and logging slash. However, the EIS claims: "Stand density reductions in riparian zones have the dual benefit of reducing the risk of stand replacing fire, while also accelerating the development of late successional stand conditions by accelerating growth of remaining trees." Riparian zones are especially sensitive to logging and are some of the areas

[50] Mark Finney and Jack Cohen, Expectation and Evaluation of Fuel Management Objectives (2003). 364 USDA Forest Service Proceedings RMRS-P-29. 2003. (Finney & Cohen, 2003)

least threatened with fire. Additionally, it does no good to accelerate the development of late successional stand condition by thinning in late successional stands.

Thinning and fuel breaks should not be used as mitigation. The thinning and fuel reduction are also ineffective on BLM lands for the alleged purpose of suppressing future wildland fires because it is in such short segments. The BLM land is checkerboarded, so the thinning occurs in lines under one mile long, with sometimes dozens of miles of the pipeline route between the short thinning segments. This is the case with the proposed fuels reduction near Milo, Trail, the South Umpqua River and the Rogue River – it is broken up into little segments. The EIS fails to conclude that a wildland fire will only happen on Federal land and that the fuel reduction will be fresh enough that it can actually reduce the fire spread.

Fuel breaks are also ineffective because the landscape is "fuel rich" and the fuel breaks are relatively narrow. Wind driven embers can easily jump the pipeline clearance. Any fuel break that is over a few years old will be thick with small trees and brush, increasing the fire hazard. The EIS offers no plan to maintain these impractical firebreaks over time rendering them even more useless as a mitigation measure.

The PCGP plans to replant the outer half of the right-of-way with trees. This replanting will occur between the fuel break and the permanently cleared right-of-way. Therefore, in just a few years, the fuel-break will not be directly connected to the cleared right-of-way, making it less effective. Mitigation projects should provide benefits beyond just a few short years.

Studies[51] have found fuel breaks ineffective:

> …fuel break performance and benefit is based on the questionable expectation that fire suppression will be capable of "stopping" fires after initial attack fails… Utilizing fuel breaks involves a large burnout operation, which may be of a size equal to the original wildfire, take place regardless of the fire behavior at its current location, and produce negative effects on wildland vegetation greater than the original wildfire. Maintenance costs of fuel breaks are often ignored by proponents but maintenance is a perpetual burden that is likely to divert efforts from managing fuels and vegetation on the remaining majority of the landscape.

The commercial aspect of the mitigation is also problematic. Mitigation projects that are commercial, i.e., makes money and pays for itself with timber sales, is not helpful mitigation. Mitigation should be for projects that would otherwise not get done due to financial constraints. The EIS published the million-dollar cost to Pacific Connector for this mitigation but failed to account for the timber sale receipts received from selling the logs.

Using commercial logging as mitigation allows Pacific Connector and BLM to extract far more trees from an LSR than otherwise would be allowed.

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[51] Mark Finney and Jack Cohen, *Expectation and Evaluation of Fuel Management Objectives* (2003). 364 USDA Forest Service Proceedings RMRS-P-29. 2003. (Finney & Cohen, 2003)

V. Pacific Fisher.

Fishers are forest-dwelling mammals related to weasels, mink, and martens. During the 1800s and early 1900s, hunting and habitat alteration dramatically reduced fisher populations in the West. This shy animal continues to be threatened by logging and development in the West Coast's mature and old-growth forests, which has decimated the large blocks of forest the species needs to thrive.

As the EIS notes, linear infrastructure, such the proposed pipeline, can also affect fisher populations and their habitat, since they result in permanent removal or alteration of potential fisher habitat and can disrupt movement patterns. Approximately 657.9 acres of fisher habitat would be cleared for the construction of the pipeline. This has the potential to have devastating impacts on the local fisher population, and in turn the genetic viability of the species.

The U.S. Fish and Wildlife Service proposed to list the West Coast DPS of the Pacific fisher as threatened under the ESA on October 7, 2014 (79 FR 60,419). In April 2016, the FWS determined that the fisher does not warrant listing under the ESA (81 FR 22,710). However, on September 21, 2018, the decision to deny the fisher protected status was rescinded and the comment period for the proposed rule to list the West Coast DPS of the fisher was reopened (84 FR 644). At this time, no final determination has been issued, however as a candidate species, FERC must confer with FWS regarding the potential for the project to harm fishers.

As the EIS notes, the fisher's historic range includes the area proposed for the pipeline, and fishers may be adversely affected by construction-related noise, human activities, vehicle collisions, and habitat loss and fragmentation; yet the EIS fails to describe the potential amount of take that may occur (i.e. number of fishers that would be killed or otherwise harmed) in order to determine whether local populations would be potentially extirpated or reduced such that the population becomes genetically limited. Nor does it discuss how these impacts could cumulatively affect fishers regionally, especially in light of climate change, continue to reduce available habitat for this imperiled species. While the EIS acknowledges that the species is likely to be adversely affected, the analysis provided simply does not provide the "hard look" that NEPA requires regarding the potential for the project to cause harm to this already imperiled species.

In fact, while the species is being considered for listing as "threatened," the harm associated with the project could push local populations to the brink, creating a genetic bottleneck that would render it "endangered," or even jeopardize its continued existence. FERC should therefore request a conference with the FWS, and fully analyze the impacts to fishers as part of the formal consultation for the project under the ESA.[52] If consultation reveals jeopardy to the species as a

[52] According to the FWS Consultation Handbook at 1-6, "it is Service policy to consider candidate species when making natural resource decisions." Available at https://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf. Furthermore, the Handbook states (at 3-7) that:

result of project activities, FERC cannot approve the permit. Furthermore, the results of the conference should be provided in a supplemental EIS, so that the public may review and provide comment on this important issue.

W. Salmonids.

As we explain above, construction of the pipeline (including clearing the right of way and constructing stream crossings), as well as construction and use of associated roads, will have numerous severe environmental impacts. In this section, we summarize the effect of these impacts on aquatic habitat. Activities that create or incite impacts on aquatic resources, and salmonid viability, include but are not limited to:

- Permanent loss of vegetative shading at corridors for pipeline stream crossings construction and operation
- Permanent loss of base flows from pipeline
- Stream width increases from sedimentation related to pipeline construction and operation
- Soil, vegetation, bank destabilization and increased sedimentation from pipeline construction and implementation
- Permanent degradation of riparian areas in pipeline corridors at stream crossings
- Permanent loss of Large Wooded Debris areas from degradation of riparian areas and increased sediment transport in stream and river channels
- Deforestation in pipeline corridors combined with wetlands damage and long-term soil compaction and new road creation and use, plus decreases in hydrologic connectivity due to all the above
- Increased, prolonged sedimentation of waterways

These Project impacts affect the following elements or processes, many of which are critical "pathway indicators" used in NMFS' framework for assessing impacts on ESA-listed salmonids:

- Water temperature: will increase and degrade already degraded conditions
- Turbidity & suspended sediment: will increase and degrade already degraded conditions
- Substrate: quality and quantity will be degraded and lost

Service biologists should notify agencies of candidate species in the action area and may recommend ways to reduce adverse effects and/or request studies as appropriate. These may be added as conservation recommendations. Legally, the action agency does not have to implement such recommendations. However, candidate species may later be proposed for listing, making conference necessary in the future if proposed actions are likely to jeopardize the continued existence of such species. Service biologists should urge other Federal agencies to address candidate species in their Federal programs. The Services are eager to work with other Federal agencies to conserve candidate species. Addressing candidate species at this stage of consultation provides a focus on the overall health of the local ecosystem and may avert potential future conflicts.

- Presence of Large Woody Debris: will decrease availability and degrade already degraded conditions
- Pool frequency & quality: will be lessened and existing, minimal conditions further degraded
- Off-channel habitat: will be lessened and existing conditions further degraded
- Refugia: will be degraded beyond existing, degraded condition
- Width/depth ratio: will be degraded beyond already degraded condition
- Streambank health: will degrade beyond already degraded condition
- Floodplain connectivity: will degrade beyond already degraded condition
- Peak flows/base flows: will fluctuate causing further degradation from existing degraded conditions
- Watershed disturbance level: will rise to significant levels given intensity and duration of Project actions and activities
- Wetland hydrology & health: will degrade already degraded conditions

The FEIS must rely on the final Coho Salmon Recovery Plan as the "best available" science and must review the recovery plan for possible recovery actions relevant to mitigation for pipeline and road construction. It is available at:
http://www.nmfs.noaa.gov/pr/recovery/plans/cohosalmon_soncc.pdf.

The EIS failed to rely on the recovery plan as the "best available" science and failed to identify for possible recovery actions relevant to mitigation for pipeline and road construction. The EIS failed to identify wetland mitigation for SONCC streams within the SONCC ESU area.

We suggest that Pacific Connector file with the Secretary a commitment to acquire conservation easements on a substantial number of private land stream miles that are occupied critical habitat of SONCC coho salmon. These conservation easements along coho salmon spawning streams would be assigned to FWS for administration.

We dispute the implied or stated assertion that sediment effects of the proposed action can be fully mitigated on-site. Once pipeline associated sediment is delivered to stream channels it cannot be mitigated. The use of log placement to mitigate increased sediment is not a proven technique because of the transient nature of sediment and the finite ability of log placement to retain very much sediment. We believe that conservation easements on private lands would best secure coho habitat well into the future and help compensate for despoiled stream reaches from pipeline construction.

The EIS 4-104 falsely asserts that

> While some additional sediment may enter streams, several factors would minimize or eliminate these occurrences:
> - the relatively small area that would be disturbed from these actions,
> - the provisions in the *Transportation Management Plan* that would be followed, and

- the ECRP and BMPs that would be implemented for Project roads, right-of-way clearing, and TEWAs. The result would be that noticeable adverse effects on stream sediment or water quality are unlikely to occur.

First, the use of qualitative and subjective descriptors (e.g. "noticeable") is not adequate technical analysis for a project of this size and variability. Corridor clearing on steep erosive slopes is certain to generate more sediment than the same action on stable flat ground. The EIS is defective because it fails to estimate the amounts of sediment generated from clearing and construction. Sediment generated from forest clearing (i.e. logging) on steep topography is well documented even with the measures identified. For example, the EIS identifies the use of silt fences as an effective technique to reduce sediment to streams but fails to disclose silt fences allow considerable amount of fine sediment to pass by them and into streams. The EIS fails to assess the effectiveness of BMPs as they relate to "minimizing" sediment impacts to streams and coho salmon. The EIS failed to take a hard look at effectiveness of barriers in preventing sedimentation of streams. Forest Service researchers have compiled a literature review titled: "Effectiveness of Best Management Practices that have Application to Forest Roads: A Literature Synthesis" available at <https://www.nrs.fs.fed.us/pubs/53428>. The literature synthesis by Edwards et al. 2016:96 states:

> "Larger particles, particularly sands, dominate the settling process because settling velocities of smaller particles (silts and clays) are too low for deposition to occur during the time that water is ponded (Barrett et al. 1998a, Keener et al. 2007). Clays also are affected by Brownian forces that can keep them in suspension almost indefinitely (Smith 1920); thus, particles less than 0.02-mm diameter (i.e., medium-sized silt and smaller particles) are not removed effectively by ponding or by filtering/clogging with nonreactive barriers (Kouwen 1990). To illustrate, silt fence materials tend to remove 80 to 99 percent of sands compared to 50 to 80 percent of silt loams, and only up to 20 percent of silty clay loams (U.S. Environmental Protection Agency [EPA] 1993). Consequently, as the percentage of smaller particles in runoff increases, the trapping efficiency of nonreactive barriers decreases (Wishowski et al. 1998)

This scientific analysis means that barriers such as silt fences are least effective at trapping fines that are the most detrimental to coho salmon spawning habitat. The EIS failed to disclose the inefficiency of barriers to retain fine sediment which will make its way past them and adversely affect coho critical habitat.

Methods and models are available for estimating volumes (i.e. cubic yards) of sediment generated from clearing (aka logging), road building, road use with heavy equipment, and large-scale excavations. Quantitative analysis commensurate with the scale of disturbance (xxx acres of initial deforestation, xx miles of temporary road, millions of cubic yards excavated) would reveal a range of sediment amounts generated for each pipeline segment based on site characteristics (i.e. context as per NEPA). Some pipeline segments, but certainly not all, may warrant a "not noticeable" or minor descriptor . Segments in Tyee sandstone will generate substantial chronic sediment and possible episodic sediment pulses with the magnitude of disturbance proposed.

X. The Proposed Mitigation Is Inadequate.

The EIS often assumes BMP effectiveness, while science and practical experience has proven that BMPs have limits on effectiveness, particularly for streams in steeper terrain. Rather than assessing impacts resulting from the pipeline with the understanding that BMPs and mitigation will have limited effectiveness, the EIS arbitrarily assumes impacts will be eliminated or significantly reduced. For example, construction mats will not wholly prevent or retard soil compaction, particularly in saturated and soft soils (where many pipeline related actions will occur). The EIS does not account for the degree, extent, or persistence of inevitable compaction nor the long-term impacts it creates, such as infiltration rates, saturation capacity, runoff volume, and affected wetlands processes, including the ability to absorb, store, and slowly release water. Compaction thus has direct, indirect, and cumulative impacts such as erosion, sediment delivery, water quality, peak flows and low flows on aquatic resources and salmonids, yet these impacts – which affect salmonid survival and production – were not given a hard look.

The same flawed analyses of impacts to salmonids are present in the context of pipeline construction and operation in riparian zones. The EIS is replete with assumptions of BMP effectiveness in eliminating runoff and sediment impacts to waterways. Conversely, best available science indicates that such BMPs do not eliminate such impacts from vegetation removal and significant soil disturbance near waterways, on steep slopes adjacent waterways, and/or in areas with high levels of precipitation and runoff like the Pacific Northwest. The same flawed assumption of BMP effectiveness applies to the EIS' assumption that post-construction revegetation will be effective in mitigating sediment-related impacts from pipeline construction on aquatic resources. Scientific studies have documented that post-construction revegetation is largely ineffective at reducing erosion and sedimentation.

Furthermore, the EIS assumes – without supporting evidence – that project activities in riparian areas will "minimize" their impacts and thereby apparently sufficiently mitigate changes in water temperature, runoff, and sediment delivery. The EIS does not explain what "minimized" impacts means, nor does the EIS factor in any explanation of available scientific data corroborating the limited effectiveness of BMPs in preventing impacts to aquatic resources and salmonids from stormwater runoff, vegetation removal, and elevated erosion.

Thus, if the Project is approved, additional mitigation is necessary. We suggest that Pacific Connector file with the Secretary a commitment to acquire conservation easements on a substantial number of private land stream miles that are occupied critical habitat for coho salmon. These conservation easements along coho salmon spawning streams would be assigned to FWS for administration.

We dispute the implied or stated assertion that sediment effects of the proposed action can be fully mitigated on-site. Once pipeline associated sediment is delivered to stream channels it cannot be mitigated. The use of log placement to mitigate increased sediment is not a proven technique because of the transient nature of sediment and the finite ability of log placement to retain very much sediment. We believe that conservation easements on private lands would best

secure coho habitat well into the future and help compensate for despoiled stream miles from pipeline construction.

A problem with mitigation is mitigation or avoidance of impacts on private lands. The EIS has numerous instances and whole sections documenting a suite of protective standards for NFS and BLM lands. Much lower protective standards for private lands are explicitly stated or implied.

The EIS fails to discuss quantitatively the higher risk or higher expected impacts to stream miles on private lands due to lower and scientifically inadequate protection standards. The tradeoffs of reduced environmental protection on private lands versus increased costs are not made explicit as required by NEPA.

We know that FERC would not allow lesser engineering or safety standards for pipeline construction on private lands. We assert that the FERC must insist that the same protective standards for public lands be implemented on adjacent private lands. Implementation, contracting, EI monitoring, impact assessment, legality, etc. would be simplified by using the same standards for all land ownerships where practical, rather than reducing environmental standards on private lands to reduce short term construction costs while burdening everybody else with conflicting standards and inevitable stream degradation.

PLAN-LEVEL FOREST PLAN AMENDMENTS VIOLATE NFMA

Although this objection primarily addresses the legality of project-specific forest plan amendments that function to exempt Pacific Connector Pipeline from complying with applicable forest plans, we also highlight that the two proposed plan-level amendments – which propose to shift Matrix land use allocation acres to the Late-Successional Reserve (LSR) land use allocation – also do not comply with the law. These two proposed amendments simply change the designated land use allocation for these acres: they do not compensate for the environmental degradation caused by the proposed pipeline. For the same reasons that the proposed site-specific forest plan amendments violate NEPA and NFMA, so do the proposed plan-level amendments violate NEPA and NFMA. Many of our organizations will be objecting to those amendments as well, and simply preserve those issues with the present objection.

CONCLUSION

Many of our organizations provided extensive public comments on the DEIS that raised these and other issues with the proposed project. The response to comments failed to adequately address those concerns, including concerns raised with the proposed forest plan amendments. We urge the agency, in the strongest terms possible, to heed the holding of the Fourth Circuit in the Atlantic Coast Pipeline case:

> We trust the United States Forest Service to "speak for the trees, for the trees have no tongues." Dr. Seuss, *The Lorax* (1971). A thorough review of the record leads to the necessary conclusion that the Forest Service abdicated its responsibility to preserve national forest resources. This conclusion is particularly informed by the Forest Service's serious environmental concerns that were suddenly, and mysteriously, assuaged in time

> to meet a private pipeline company's deadline. Accordingly, for the reasons set forth herein, we grant the petition to review the Forest Service's Record of Decision and Special Use Permit, vacate the Forest Service's decisions, and remand to the Forest Service for proceedings consistent with this opinion.

Cowpasture River Pres. Ass'n, 911 F.3d at 183. It is evident that the Forest Service has abdicated its responsibilities and has failed to "speak for the trees" in giving the green light to a foreign company that seeks to exploit American public resources for private economic gain. Unless the Forest Service reverses course, our organizations will have no choice but to seek redress in the Ninth Circuit Court of Appeals.

Sincerely,

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