EARTHJUSTICE

May 11, 2020

SEPA Draft EIS for the Chehalis Flood Damage Reduction Project
c/o Anchor QEA
1201 3rd Ave., Suite 2600
Seattle, WA 98101

RE: Quinault Indian Nation comments, Draft Environmental Impact Statement, Proposed Chehalis River Basin Flood Damage Reduction Project under State Environmental Policy Act

On behalf of the Quinault Indian Nation ("Quinault" or "Nation"), Earthjustice provides these comments regarding the Draft Environmental Impact Statement ("DEIS") for the Proposed Chehalis River Basin Flood Damage Reduction Project ("Project" or "dam/levee Project").

For the reasons provided below, based on its review of the DEIS, the Nation opposes the proposed Project to build an expandable flood control dam and levee. In summary, the DEIS does not meet fundamental requirements of State Environmental Policy Act ("SEPA") because it:

1. includes a proposed Project, the construction of an expandable dam, for which there is no corresponding discussion of purpose or need or evaluation of the impacts from an expanded dam;
2. proposes a Project that does not adequately analyze the least environmentally-harmful method to accomplish the objective of reducing flood damage in the Centralia-Chehalis area;
3. admits, yet grossly understates and/or inadequately characterizes, significant and unavoidable adverse environmental impacts;
4. lacks any mitigation identified for those significant unavoidable adverse environmental impacts; and
5. fails to acknowledge, quantify, or analyze and discuss that the environmental damage from this Project will have a disproportionate effect on the Nation's legally protected treaty rights and interests.

Because of these overwhelming shortcomings, the Nation does not believe it prudent to spend additional scarce state resources on developing or promoting the dam/levee Project to address only one of the two statutory goals of the Chehalis Basin Strategy. The narrow focus on the dam/levee Project largely ignores the legislative mandate to facilitate Basin-wide flood damage reduction, and does so at the expense of the other mandate—aquatic species habitat restoration. The one thing this DEIS makes clear is that there is no legally defensible path to permitting the proposed dam/levee Project.

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It is the Quinault Nation's conclusion that the Department of Ecology ("Ecology") should use its substantive authority under SEPA to deny the proposed preferred alternative for the Project and focus efforts to address flood damage in the Chehalis Basin on further developing and implementing a non-dam alternative that is compatible with aquatic species habitat restoration. Denial of the proposed Project is warranted given the DEIS's unmistakable conclusions that the proposal would result in significant adverse environmental impacts and that no mitigation measures are included to mitigate those impacts.

We provide the following comments in support of these conclusions. The Nation's comments are supported by Comment Matrices related to specific environmental disciplines covered in the DEIS, and Technical Review Memos including:

1. Cascade of FRE Facility Ecosystems Effects Technical Memo
2. Hydrology Technical Memo 1: Observed and Predicted Flows Relative to FRE Facility Operation (Hydrology Technical Memo 1 - Observed and Predicted Flows)
3. Hydrology Technical Memo 2: Hydrology and Climate Change Technical Analyses Review (Hydrology Technical Memo 2 - Hydrology and Climate Change)
4. Earth Discipline Report - Geology Technical Analyses Review
5. Technical Report: Salmon Population Modeling for the SEPA DEIS Evaluation of Flood Protection in the Chehalis Basin (Technical Report - Salmon Population Modeling)
6. Technical Report: Review of Impacts on Fish and Fisheries as Presented in the SEPA DEIS Evaluation of Flood Protection in the Chehalis Basin (Technical Report – Impacts on Fish and Fisheries)
7. Economics & Socioeconomic Analysis Review
8. Local Actions Alternative Technical Analyses Review
9. Forest Practices Technical Analyses Review

All such Comment Matrices, Reports, and their supporting documents are incorporated by reference.

I. DESCRIPTION OF DAM AND LEVEE PROJECT PROPOSAL

The Chehalis River Basin is the second largest river basin in the State of Washington, extending into eight counties and draining approximately 2,700 square miles to Grays Harbor and the Pacific Ocean. The Chehalis Basin has experienced significant historic changes in land cover that have negatively affected physical natural processes. Historic development in flood prone areas has increased flood risks. Five of the largest floods in the history of the Chehalis River Basin occurred in the last 30 years. In 2007 and 2009, two extreme floods occurred only 13 months apart, causing significant loss and damage in the Basin—costing hundreds of millions of dollars in economic damages and lost revenue, and overwhelming fish and wildlife habitat.

The Chehalis Basin Strategy ("Strategy"), a collaborative process, was launched shortly thereafter in order to address the dual challenges of damage from extreme flooding and degraded aquatic species habitat throughout the Basin. The Chehalis Basin Strategy Final Programmatic Environmental Impact Statement ("PEIS") (June 2, 2017) evaluated a suite of actions to address these two challenges. Among those actions were two types of dams: 1) A dam with a temporary pool designed to temporarily hold back water during major floods, referred to as a Flood Retention Only facility ("FRO"), and 2) a larger dam with a permanent reservoir designed to retain water all year (instead of only during major floods), referred to as a Flood Retention Flow Augmentation facility ("FRFA").

The DEIS provides a description of the proposed Project, building a Flood Retention Expandable facility ("FRE"), which is an expandable flood retention dam (equivalent size and function to the FRO) 1,550 feet long and 270 feet high at its top, located on Weyerhaeuser and Panesko Tree Farm land, at River Mile 108 on the Chehalis River, about 1 mile upstream of Pe Ell. It would create what is described in the DEIS as a 'temporary' reservoir with a capacity at maximum design including an inundation extent of 6.5 miles (856 inundated acres), reservoir elevation of 628 feet, reservoir depth of 203 feet, and water capacity of 66,360 acre-feet. DEIS, p. 12.

The expandable dam (FRE) is proposed to be built so it could support, according to the DEIS, "the future construction of a larger structure" that "could hold up to 130,000 acre-feet of water in the reservoir. This expansion may or may not occur, and, if pursued in the future, it would be subject to a separate environmental review and permitting process." If the dam were expanded at an unidentified later date, the reservoir would become a permanent storage pool of up to 130,000 acre-feet, dam height of 313 ft, and reservoir elevation of 687 feet. DEIS, Appendix 1, Attachment A, Part 2, p. 41.

The proposed dam design includes five 310-foot-long openings (outlets) along the base of the structure that the DEIS describes as allowing the Chehalis River to "flow through the FRE facility outside of major (or greater) flood events." DEIS, p. 8. One of the outlets would be 12 feet wide by 20 feet high and four would be 10 feet wide by 16 feet high. Under non-flood control conditions, the river would pass through the outlets to a 230-foot-long stilling basin. The DEIS indicates the outlets would also provide upstream and downstream passage for fish and other aquatic species under non-flood control conditions. The concrete stilling basin is designed to slow the water and minimize downstream channel erosion. Water would re-enter the natural river channel downstream of the FRE facility. *Id*.

The proposed dam includes a fish trap-and-transport facility that would provide fish access upstream during major or larger floods when the FRE facility outlet gates are closed. Downstream fish passage would not be provided during major or larger floods when the outlets are closed, a period the DEIS describes as "up to 35 days." DEIS, p. 20.

The Project also includes adding 4 to 7 feet to the height of the existing 9,511-foot-long levee around the Centralia-Chehalis airport with earthen materials or floodwalls and raising 810 feet of NW Louisiana Avenue along the southern extent of the airport, as well as other more minor improvements. DEIS, p. 22.

The stated purpose and objective for the FRE dam/levee Project are:

> The Applicant's **purpose** for the Proposed Project is to reduce flood damage in the Chehalis-Centralia area by constructing a flood retention facility and temporary reservoir near Pe Ell and making changes to the Chehalis-Centralia Airport levee.
>
> The Applicant's **objective** for the Proposed Project is to reduce flooding coming from the Willapa Hills and improve the levee protection level at the Chehalis-Centralia Airport.

DEIS, p. 6 (emphasis added). The DEIS identifies these specific metrics to measure flood damage reduction:

1. Protect approximately 635 structures of value from flooding risk during a catastrophic flood.
2. Reduce disruption of access via main transportation routes, specifically ensuring access along SR 6 and Interstate 5 (I-5) is open within 24 hours of a catastrophic flood.
3. Minimize flood-related impacts (e.g., closure) at the Chehalis-Centralia Airport.

DEIS, p. 8. There is no stated purpose or need for the expanded version of the dam, referred to as the FRE-FC in DEIS appendices, despite the fact that the proposed Project will be built to accommodate such an expansion.

The Applicant for this Project is the Chehalis River Basin Flood Control Zone District, a quasi-governmental agency that has never designed, built, or operated a flood control dam. The Applicant's proposed Project development is funded with state tax dollars through appropriations made by the Washington State Legislature, as is the Draft EIS development occurring simultaneously under both SEPA and the National Environmental Policy Act ("NEPA").

The Washington Legislature delegated to the Office of the Chehalis Basin and its oversight Board the responsibility "to aggressively pursue implementation of an integrated strategy and administer funding for long-term flood damage reduction and aquatic species restoration in the Chehalis river basin." RCW 43.21A.730(1). The proposed Project wholly fails to meet this statutory objective. The proposal addresses only a small component of one of the goals of that overall Strategy, leaving most of the Chehalis River Basin and its residents unprotected. This Project does not address other important components of the overall Chehalis Basin Strategy that have been under consideration for more than two decades, such as flood damage reduction *throughout the entire* Chehalis River Basin. Moreover, this Project is antithetical to the Chehalis Basin Strategy's goal of aquatic species habitat restoration throughout the Basin.

As defined in the DEIS, the Local Actions Alternative includes non-structural approaches to reduce flood damage in the Chehalis-Centralia area that local governments "could choose to do in the future." DEIS, p. 24. This narrowed focus, again, contradicts the overall goal of the Strategy—flood damage reduction *throughout the entire* Chehalis Basin. Among these approaches, as briefly discussed in the DEIS are: land use management actions, additional floodproofing, buying out or relocating at-risk properties or structures, improving floodplain storage and minimizing channel migration hazards through restoration actions, and improving flood emergency response actions like the early flood warning system. DEIS, pp. 24-25.

The DEIS also considers a No-Action Alternative as required under SEPA, WAC 197-11-440(5)(b)(ii).

II. QUINAULT INDIAN NATION HAS SUBSTANTIAL INTERESTS IN THE CHEHALIS BASIN

The Quinault Indian Nation is a federally-recognized Indian tribe and sovereign tribal government. The Quinault people have lived near and depended on Grays Harbor, the Chehalis River Basin, and the Washington Coast since time immemorial. They have been called the Canoe people because of the importance of the ocean, bays, estuaries, and rivers to every aspect of tribal life. *See generally*, Jacqueline M. Strom, Land of the Quinault (1990). The Quinault Nation is also part of the Grays Harbor community, and is a leading contributor to the economic and social lifeblood of this region.

A. Federally-Protected Treaty Rights Must Be Considered.

The Nation is signatory to the Treaty of Olympia (1856) by which it reserved, among other things, the right of "taking fish, at all usual and accustomed fishing grounds and stations" and the privilege of hunting and gathering on open and unclaimed lands, among other rights, in exchange for ceding lands it historically roamed freely.

In a landmark court case known as the "Boldt decision," a federal court confirmed Quinault's treaty fishing rights and established the Nation and other plaintiff tribes as co-managers of off-Reservation fisheries resources entitled to half of the harvestable number of fish returning to Washington waters. *United States v. Washington*, 384 F. Supp. 312 (W.D. Wn. 1974), *aff'd* 520 F.2d 676 (9th Cir. 1975), *cert. denied*, 423 U.S. 1086 (1976). Based on the evidence provided, the court determined the usual and accustomed areas of the Quinault Nation include "the waters adjacent to their territory" and "Grays Harbor and those streams which empty into Grays Harbor." *Id*. at 374-75; *see also United States v. Washington*, 459 F.Supp. 1020, 1097 (W.D. Wn. 1978), *aff'd* 645 F.2d 749 (9th Cir.1981). In a later compilation of key court findings, the court concluded: "The Quinault Tribe has usual and accustomed fishing places in Grays Harbor and its watershed, including the Humptulips River." *United States v. Washingto*n, 459 F.Supp. 1020, 1038 (W.D. Wn. 1978) *aff'd*, 645 F.2d 749 (9th Cir. 1981). Throughout these terrestrial,

riverine and marine usual and accustomed fishing areas—including the entire Chehalis River Basin—Quinault is either a full manager or co-manager of treaty resources and the habitats that support them.

Treaty rights have substantial legal weight. The treaties signed with Washington tribes in the 1850s do not grant rights to Indians, but rather serve as a "grant of right from them—a reservation of those not granted." *United States v. Winans*, 198 U.S. 371, 381 (1905). Thus, the Quinault Nation's treaty rights are rights reserved by, and not granted to, it. Treaties are the supreme law of the land. *Worcester v. Georgia*, 31 U.S. 515, 531 (1832). These rights cannot be abrogated or diminished except by "plain and unambiguous" explicit congressional authorization. *United States v. Santa Fe Pac. R.R. Co*., 314 U.S. 339, 346, 354 (1941).

Treaties take precedence over state laws by reason of the Supremacy Clause of the U.S. Constitution, Art. VI, Sect. 2, which binds the State of Washington and its agencies to honor the treaties signed between Washington Indian tribes and the United States Government in the 1850s and to ensure agency actions do not harm them. This was affirmed by the Ninth Circuit Court of Appeals holding that, "The State of Washington is bound by the treaty. If the State acts for the primary purpose or object of affecting or regulating the fish supply or catch in noncompliance with the treaty as interpreted by past decisions, it will be subject to immediate correction and remedial action by the courts." *United States v. State of Washington*, 759 F.2d 1353, 1357 (9th Cir. 1985) (*en banc*). That holding was directly applied by the federal court in the "culverts case" brought initially by Washington tribes in 2001 to compel the State of Washington to repair or replace culverts that impeded salmon migration to or from their spawning grounds. The court recognized that the treaties impose a duty on the state to refrain from building or operating culverts under state-maintained roads that hinder fish passage and thereby diminish the number of fish that would otherwise be available for tribal harvest. *United. States v. Washington, 853* F.3d 946 (9th Cir. 2017). The Ninth Circuit, affirmed by the U.S. Supreme Court, reasoned quite simply that, "the Tribes' right of access to their usual and accustomed fishing places would be worthless without harvestable fish." *Id*. at 965. That general principle applies to the proposed Project—the state cannot lawfully permit a project that diminishes and potentially eliminates fish runs and that destroys the habitat-forming processes that are integral to the availability of the fish that Quinault relies on for the exercise of its treaty fishing rights.

State administrative law further confirms tribal treaty rights must not be violated by state or local permitting actions. In 1988, the Pollution Control Hearings Board ("PCHB") considered a claim by the Tulalip Tribes of Washington challenging a state water quality certification and coastal zone consistency determination because these decisions threatened federal tribal treaty rights. *Tulalip Tribes of Washington v. State of Washington*, 1988 WL 159039 (Wn. Pol. Control Bd. 87-64). Though the PCHB granted the state's motion to dismiss that claim, it did so with the caveat that such dismissal does not "imply that the rights of the Tulalip Tribes secured by federal treaty need not be respected by the State nor that the State may permit activities to go forward in violation of those rights." *Id*. at *3. The PCHB emphasized, "The treaty of the United States with the Tulalip Tribes, like other treaties, is the law of the land. The Supremacy Clause of the United States Constitution makes it paramount over conflicting state laws."

Similarly, in 1988, in an Order Granting Motion for Dismissal on Issues Concerning Tribal Treaty Rights, the Shoreline Hearings Board elaborated on the appropriateness of consideration of the Tribal treaty rights:

> This ruling should not be interpreted to mean that local and state government need not consider Indian fishing rights in determining whether to grant, condition or deny a substantial development or conditional use permit. Where competing use determinations involving Indian fishing must be made or where environmental impacts on Indian fishing and the fisheries resource must be evaluated under SEPA, there must necessarily be consideration on Indian fishing rights. We do not hold that Indian fishing rights are not appropriately considered in the permitting process; we hold that the extent of such rights is not properly adjudicated in this forum.
>
> In addition, we reiterate the statement made in Tulalip Tribes, et al. v. BCE Development, et al., SHB 87-5 & 6 (July 23, 1987), where we said that, where appropriate, the parties 'may seek to introduce evidence, for example, on the Tribes' usual and accustomed fishing grounds, their areas of navigation, and so forth . . .' to assist the Board in determining conformance with the Shoreline Management Act, SEPA or the local master program.

Tulalip Tribes v. City of Everett, SHB No. 87-33, at 7 (holding that the Board lacked jurisdiction over the subject matter of the consistency of SEPA with the conditional use permit); *see also*, *Nooksack Indian Tribe v. State of Washington*, 1995 WL 879095 1995, *4 (reiterating the statement made in SHB 87-5 & 6 and adding, "These statements apply equally to the protections for the fishery and beneficial uses under the anti-degradation policy of the Clean Water Act.")

B. Quinault Treaty Harvest Is Significant Socially, Economically and Culturally.

The Nation's federally-protected treaty fishing right guarantees enrolled Quinault tribal members—now and in perpetuity—the right to harvest any and all fish and shellfish species anywhere within the Quinault Nation's usual and accustomed fishing areas in perpetuity. The Chehalis River, its tributary rivers, streams, and wetlands, and the Grays Harbor estuary, provide the freshwater and marine habitat that supports Chinook, chum, and coho salmon and steelhead of critical importance to the Quinault Nation's treaty-protected terminal river fisheries within Grays Harbor. Grays Harbor, and the Chehalis River flowing into it, nourishes other species of importance to the Nation, such as white sturgeon and Dungeness crab, an economically vital fishery on the Washington coast.

Similarly, the Nation's enrolled members have a federally-protected right to hunt wildlife and gather plants within, at least, the Chehalis Basin on all open and unclaimed lands in perpetuity under Quinault laws and regulations.

Fish and shellfish are a source of social, economic and cultural values. Salmon have particular historic significance as a vital cultural and economic resource of the Quinault people. Many tribal fishers derive their entire economic livelihood from fishing and shellfishing, including from the Chehalis River system. Salmon represent a means for employment in fishing, guiding and processing jobs. Fish are often used in trade between tribal members for other foods or goods. Salmon and razor clams are communally served at social and community events such as celebrations, weddings and funerals.

Salmon is a critical food source for the Quinault people. Salmon provide protein, vitamins, and oils that are vital to their dietary health and community well-being. The nutrition from salmon improves susceptibility to debilitating diseases like diabetes, and provides food for sharing in ceremonial and cultural events. It also protects the community by providing food security during times of scarcity or crisis. Often, salmon and other fish and shellfish are shared with family members, elders and others in the community who do not, or can no longer, fish.

Fishing is also a way to educate younger generations in life lessons, both as a means to pass on traditional knowledge and to perpetuate ceremonial values. Parents bond with and teach these life lessons to their children while catching, gathering, preserving, and preparing foods. There are also spiritual values inherent in fishing, such as thanksgiving for the ability to utilize the resources.

Spring Chinook are highly prized by the Quinault people as it is often the first salmon species to return to the rivers in the springtime. In the Chehalis River, the first salmon ceremony has been traditionally observed for the first of these Chinook salmon. Historically, the fisherman obtaining the first salmon immediately sent messengers to notify all of the villagers of the event. People gathered at the house of the fisherman. It was prepared in such a manner as to ensure future fishing successes. In today's society, a first salmon ceremony is an individual experience; the fisherman will prepare the salmon and disburse it to elders and prominent members of the community. Elders are often unable to fish themselves so they rely on the generosity of the fisherman. The first salmon ceremony has been and continues to be of deep religious significance. *See* Technical Report – Impacts on Fish and Fisheries, describing the cultural importance of salmon to the Quinault people.

Chinook salmon from the Chehalis River system is a delicacy second only to the Blueback sockeye runs in the Quinault River. Traditionally, no edible part of the fish was wasted, including the head, eyes and eggs. Due to its high fat content, Chinook salmon is considered the most flavorful of the salmon species. The head is used for soup; other portions eaten include the eyeballs and cheeks. The belly meat is considered the most succulent and often considered the best part of the fish. Chinook salmon produce many eggs, which Quinault people use to prepare fish egg soup. Baked eggs are considered a delicacy. Nutritionally, the fish, the heads, and eggs are excellent sources of protein and B vitamins.

The Nation's treaty-reserved hunting and gathering rights on open and unclaimed lands extend throughout the Chehalis River Basin. Currently, Quinault regulates its members' treaty

hunting through annual regulations pertaining to Game Management Units within the Basin, including 501 Lincoln, 506 Willapa Hills, 530 Ryderwood, 642 Copalis, 648 Wynoochee, 651 Satsop, 658 North River, 660 Minot Peak, 672 Fall River, 673 Williams Creek, 681 Bear River, 684 Long Beach, and 699 Long Island. Furthermore, Quinault people have strong cultural and spiritual ties and interests throughout the Basin.

C. The Quinault Nation Is Heavily Invested in the Chehalis Basin Strategy.

The Nation submitted extensive comments on the Programmatic Environmental Impact Statement (Letter dated November 14, 2016, "RE: Quinault Indian Nation Comments on Chehalis Basin Strategy Draft Programmatic Environmental Impact Statement" including Attachments 1-7 and Exhibits A-O). Earthjustice, representing the Nation, submitted extensive SEPA DEIS scoping comments by Letter dated October 29, 2018, "Re: Quinault Indian Nation's Combined Comments on Chehalis River Basin Flood Damage Reduction Project—Dam and Airport Levee SEPA and NEPA Scope of Review," including 33 Exhibits. These letters include comprehensive technical and legal review of these documents and the impacts to the environment and Quinault interests from the proposed projects considered. Each letter and all attachments are incorporated by reference herein. Additionally, a compilation of correspondence dating from 2010 between the Nation and State of Washington regarding the Chehalis Basin Strategy and related matters is attached as Exhibit A.

The Nation has also participated through its voting representative, Vice President Tyson Johnston, on the Chehalis Basin Board. The state legislature has delegated this Board the significant responsibility "for oversight of a long-term strategy resulting from the department's programmatic environmental impact statement for the Chehalis river basin to reduce flood damage and restore aquatic species habitat[,]" and "for overseeing the implementation of the strategy and developing biennial and supplemental budget recommendations to the governor." RCW 43.21A.731(5) and (6), respectively. This proposed Project purports to be but one component addressing one goal of that Strategy—to reduce flood damage in a small portion of the Chehalis Basin confined to the Chehalis-Centralia area.

III. STATE ENVIRONMENTAL POLICY ACT REQUIREMENTS

In adopting the State Environmental Policy Act ("SEPA"), the Washington legislature declared the protection of the environment to be a core state priority. RCW 43.21C.010. Through SEPA, "[t]he legislature recognizes that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment." RCW 43.21C.020(3). This policy statement "indicates in the strongest possible terms the basic importance of environmental concerns to the people of the state." *Leschi v. Highway Comm'n*, 84 Wn.2d 271, 279-80 (1974).

Like its federal counterpart, NEPA, SEPA broadly serves two purposes: first, to ensure that government decision makers are fully apprised of the environmental consequences of their

actions and, second, to encourage public participation in the consideration of environmental impacts. *Norway Hill Preservation and Prot. Ass'n v. King Co*, 87 Wn.2d 267, 279 (1976); *Victoria Tower P'ship v. City of Seattle*, 59 Wn. App. 592, 601, 800 P.2d 380 (1990). SEPA requires full disclosure and "detailed" consideration of all affected environmental values. RCW 43.21C.031(1). *See also Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (the "hard look" required by NEPA includes all foreseeable direct and indirect effects and full discussion of the negative effects, not just passing mention). At its heart, SEPA is an "environmental full disclosure law." *Norway Hill*, at 272. The *Norway Hill* court also highlighted the legislature's intent that "environmental values be given full consideration in government decision making," and its decision to implement this policy through the procedural provisions of SEPA which "specify the nature and extent of the information that must be provided, and which require its consideration, before a decision is made." *Id.* at 277-78.

Importantly SEPA is more than a purely "procedural" statute that encourages informed and politically accountable decision-making. SEPA empowers agencies to say no to a proposed project. An agency's authority to deny a project was settled in *Polygon Corp. v. City of Seattle*, 90 Wn. 2d 59, 64-65, 578 P.2d 1309 (1978) (*en banc*). In that case, Polygon Corporation challenged Seattle's authority to deny a building permit because of adverse impacts identified under SEPA. The Court upheld the permit denial based on identified adverse impacts to aesthetics as independent grounds under SEPA, regardless of the project's compliance with applicable zoning laws, and the availability of alternatives with less adverse environmental impacts. *Id.* at 70. Courts have confirmed agencies' authority to deny projects under SEPA substantive authority in several cases since *Polygon*. *See, e.g.*, *Dep't of Nat. Res. v. Thurston Cty.*, 92 Wn. 2d 656, 668, 601 P.2d 494, 500 (1979) (denying proposed plat due to significant impacts to resident eagles based on SEPA substantive authority regardless of fact that platting statute did not provide explicit authority to deny plat on environmental grounds); *W. Main Assocs. v. City of Bellevue*, 49 Wn. App. 513, 742 P.2d 1266 (1987) (affirming in part denial of permit based on adoption of comprehensive plan as SEPA policy and evidence supporting adverse environmental impacts which could not be mitigated); *Cook v. Clallam Cty.*, 27 Wn. App. 410, 414, 618 P.2d 1030, 1033 (1980) (project's potential for creating pressure to alter surrounding land use and the cumulative impact from other similar projects were significant adverse impacts supporting permit denial). *See also W. Main Assocs. v. City of Bellevue*, 106 Wn. 2d 47, 53, 720 P.2d 782, 786 (1986) (*en banc*) (affirming declaration of illegality of city's restrictive ordinance, but holding in *dicta* that "under [SEPA] a municipality has the discretion to deny an application for a building permit because of adverse environmental impacts even if the application meets all other requirements and conditions for issuance"), *abrogated by Yim v. City of Seattle*, 451 P.3d 694 (Wash. 2019). In enacting SEPA, the state legislature gave decision makers the affirmative authority to condition or even deny projects where environmental impacts are serious, cannot be mitigated, or collide with local rules or policies. WAC 197-11-660.

SEPA requires an environmental impact statement ("EIS") for any action that has a "probable significant, adverse environmental impact." RCW 43.21C.031(1); WAC 197-11-440(6)(e). SEPA regulations define impact as "the effects or consequences of actions." WAC 197-11-752. SEPA requires that agencies "carefully consider the range of probable impacts,

including short-term and long-term effects and shall include those that are likely to arise or exist over the lifetime of a proposal or, depending on the particular proposal, longer." WAC 197-11-060(4)(c). "'Probable' means likely or reasonably likely to occur, as in 'a reasonable probability of more than a moderate effect on the quality of the environment.'" WAC 197-11-782. "'Significance' means a reasonable likelihood of more than a moderate adverse impact on environmental quality." WAC 197-11-794. This determination is guided by criteria in WAC 197-11-330, and "involves context and intensity. . . . The context may vary with the physical setting. Intensity depends on the magnitude and duration of an impact. The severity of an impact should be weighed along with the likelihood of its occurrence. An impact may be significant if its chance of occurrence is not great, but the resulting environmental impact would be severe if it occurred." *Id*.

A. Reasonable Alternatives Required.

The overarching purpose of an EIS is to "provide impartial discussion of significant environmental impacts and [to] inform decision makers and the public of reasonable alternatives, including mitigation measures, that would avoid or minimize adverse impacts or enhance environmental quality." WAC 197-11-400(2). Accordingly, SEPA requires that an EIS contain a detailed discussion of alternatives to the proposed action. RCW 43.21C.030(c)(iii). SEPA supplementary policy regulations require agencies to "[i]dentify, evaluate, and require or implement, where required by the act and these rules, *reasonable alternatives that would mitigate adverse effects of proposed actions on the environment*." WAC 197-11-030(g) (emphasis added). "Reasonable alternatives" shall include actions "*that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation*." WAC 197-11-440(5)(b) (emphasis added).

As potential alternatives are identified, they should be measured against certain criteria:

- Do they feasibly attain or approximate the proposal's objectives?
- Do they provide a lower environmental cost or decreased level of environmental degradation than the proposal?

(SEPA Handbook, p. 35).

Washington courts look to federal case law interpreting and applying NEPA for guidance in interpreting and applying SEPA. *Int'l Longshore & Warehouse Union, Local 19 v. City of Seattle*, 176 Wn. App. 512, 525, 309 P.3d 654 (2013); and, s*ee, e.g.*, *ASARCO v. Air Quality Coal.,* 92 Wn.2d 685, 709 (1979); *Kucera v. State Dep't of Transp.,* 140 Wn.2d 200, 215-16 (2000). Under NEPA, an EIS must "briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." 40 C.F.R. § 1502.13. *See also Westlands Water District v. United States Department of the Interior,* 376 F.3d 853, 865 (9th Cir. 2004), pointing out that "[a]n agency preparing an EIS must specify the underlying purpose and need for the proposed action."

The purpose and need statement is significant because the project alternatives arise from that statement. *See City of Carmel-by-the-Sea v. United States Department of Transportation,* 123 F.3d 1142, 1155 (9th Cir, 1997) ("[p]roject alternatives derive from an Environmental Impact Statement's 'Purpose and Need' section.') Indeed, the "stated goal of a project necessarily dictates the range of 'reasonable' alternatives." *City of Carmel,* 123 F. 3d at 1155. *See also, Muckleshoot Indian Tribe v. U.S. Forest Service,* 177 F.3d 800, 812 (9th Cir. 1999) (same). The consideration of alternatives, in turn, "is the heart of the environmental impact statement." *City of Carmel* at 1155.

A agency must "'[r]igorously explore and objectively evaluate all reasonable alternatives'" for the proposed action in response to a "'specif[ied] underlying purpose and need.'" *Biodiversity Conservation Alliance v. Jiron*, 762 F.3d 1036, 1083 (10th Cir. 2014). Courts generally look at the objectives identified by the agency in the purpose and need statement of an EIS to determine whether the agency has considered the reasonable alternatives. *Citizens' Committee to Save Our Canyons v. United States Forest Service*, 297 F.3d 1012, 1030 (10th Cir. 2002). Alternatives that do not accomplish the purpose of the proposed action are not reasonable and need not be studied. *Id.* at 1031. *See also Westlands Water District,* 376 F.3d at 868 (the "'range of alternatives that must be considered in the EIS need not extend beyond those reasonably related to the purposes of the project.'") To be sure, "alternatives that do not accomplish that purpose or objective . . . are not 'reasonable.'" *Citizens' Committee to Save Our Canyons,* at *1031.*

The legal principle that alternatives that do not accomplish the purposes or objectives set forth in the statement of purpose and need are not reasonable is generally applied by the courts in the context of a project opponent arguing that other alternatives were not identified or not subjected to adequate study. The requirement that reasonable alternatives must be based on the discussion of purpose and need also means that the preferred action selected by the agency must also correspond to an identified purpose or need and it must also be analyzed as an alternative.

A viable but unexamined alternative renders an environmental impact statement inadequate. *Muckleshoot Indian Tribe*, 177 F.3d at 814. Consideration of viable alternatives is a prerequisite to ensuring agencies take a "hard look" at the environmental consequences of their actions and so decision makers can appropriately make informed decisions. *Id*.

An EIS must also "[p]resent a comparison of the environmental impacts of the reasonable alternatives, and include the no action alternative." WAC 197-11-440(5)(b)(ii). The discussion of alternatives in an EIS need not be exhaustive, but the EIS must present sufficient information for a reasoned choice among alternatives. *Gebbers v. Okanogan County Public Utility Dist. No. 1*, 144 Wn. App. 371, 387-88, 183 P.3d 324 (2008), *review denied* 165 Wn.2d 1004, 198 P.3d 511; *Toandos Peninsula Ass'n v. Jefferson Cy.,* 32 Wn. App. 473, 483 (1982). SEPA also requires a "no action" alternative be evaluated and compared to other alternatives. WAC 197-11-440(5)(b)(ii).

B. Scope of Review.

It is implicit in SEPA that an "agency cannot close its eyes to the ultimate probable environmental consequences of its current action." *Cheney v. City of Mountlake Terrace*, 87 Wn.2d 338, 344 (1976). Accordingly, under SEPA, environmental review must include consideration of "direct and indirect impacts caused by a proposal." WAC 197-11-060(4)(d). The requirement for disclosure of indirect and cumulative impacts is necessary to comply with the mandate that decisions must be based on "complete disclosure of environmental consequences." *King County v. Washington State Boundary Review Bd. for King County*, 122 Wn.2d 648, 663, 860 P.2d 1024 (1994). "The range of impacts to be analyzed in an EIS (direct, indirect, and cumulative impacts, WAC 197-11-792) may be wider than the impacts for which mitigation measures are required of applicants." WAC 197-11-060(4)(e).

While SEPA itself does not define direct, indirect, and cumulative impacts, NEPA does, and these definitions have been borrowed for use in interpreting SEPA. *See Quinault Indian Nation v. City of Hoquiam*, 2013 WL 6637401 (Shorelines Hearings Board, Dec. 9, 2013) (borrowing NEPA definition of cumulative effects for SEPA analysis of crude-by-rail terminal). Indirect impacts are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b). Cumulative impacts include "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." 40 C.F.R. § 1508.7; *and see*, *White v. Kitsap Cnty*, SHB No. 09-019 at 17 (2009) (cumulative impacts of a proposed action together with the impacts of pending and future actions should be considered when making a threshold determination). "Proposals are similar if, when viewed with other reasonably foreseeable actions, they have common aspects that provide a basis for evaluating their environmental consequences together, such as common timing, types of impacts, alternatives, or geography." WAC 197-11-060(3)(c)(i). *Id*.

NEPA requires a "useful analysis of the cumulative impacts of past, present and future projects," which requires "discussion of how [future] projects together with the proposed ... project will affect [the environment]." *Muckleshoot Indian Tribe*, 177 F.3d at 810 (*citing City of Carmel*, 123 F.3d at 1160). The court in *Muckleshoot Indian Tribe* rejected a cumulative impacts analysis in an EIS that contained no evaluation of the impact of timber harvest on lands proposed to be transferred to Weyerhaeuser as part of a land exchange, finding the EIS failed to adequately analyze impacts of another "reasonably foreseeable" land exchange. *Id*. at 811-812. The court ultimately held that the cumulative impacts statements in the EIS, relying on "broad and general statements devoid of specific, reasoned conclusions," were "far too general and one-sided to meet NEPA requirements." *Id*. at 811. The court stated further that the analysis fell far short of a "useful analysis" as required by *Carmel*, 123 F.3d at 1160, and *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214–15 (9th Cir. 1998). *Id*.

It is important to note the distinction between indirect and cumulative impacts. Indirect impacts are those impacts attributable to the project that are not immediate, perhaps induced by the project or an extension of the project. Cumulative impacts include indirect impacts but also impacts to the same or similar resources from other projects, not just the project under consideration.

SEPA rules allow for EISs to be conducted in phases in some situations. WAC 197–11–060(5). Such phasing allows an agency and the public to avoid being forced to decide issues that are not ripe for review. WAC 197–11–060(5)(b). However, SEPA requires an agency to identify when it is using phased review. WAC 197-11-060(5)(e); *East Cnty Reclamation Co. v. Bjornsen*, 125 Wn. App. 432, 441 (2005) (holding the project's FEIS was offered as a final document and phased review was not proper so it remanded for unphased review). Phased review is not appropriate when it is merely used to divide a larger system into exempted or seemingly-less significant fragments, or to avoid discussion of the full range of impacts, particularly cumulative impacts. WAC 197–11–060(5)(d)(ii); *Indian Trail Property Owner's Ass'n v. City of Spokane*, 76 Wn. App. 430, 443 (1994) (finding initial evaluation of underground fuel storage tanks separate from other phases of proposed shopping facility expansion was erroneous; such phased review was inappropriate because it would serve only to avoid discussion of cumulative impacts).

Relatedly, when a non-project or programmatic EIS precedes a project EIS, "the EIS on such a project shall focus on the impacts and alternatives including mitigation measures specific to the subsequent project and not analyzed in the non-project EIS. The scope shall be limited accordingly." WAC 197-11-443(2).

SEPA requires a consideration of impacts throughout a wide geographic range. "In assessing the significance of an impact, a lead agency shall not limit its consideration of a proposal's impacts only to those aspects within its jurisdiction, including local or state boundaries (see WAC 197-11-330(3) also)." WAC 197-11-060(4)(b). For example, in announcing the scope of the EIS for the Gateway Pacific Terminal (coal export) near Bellingham, Ecology confirmed that the EIS would look at—in addition to the obvious onsite impacts like wetlands fill, habitat loss, and pollution—impacts of increased rail and marine vessel traffic throughout the state and even beyond.

Environmental reviews under SEPA must use sufficient information and disclose areas where information is speculative or unknown. WAC 197-11-080(1), (2). Where there is scientific uncertainty, Washington courts have required agencies to disclose responsible opposing views and resolve differences. These requirements feed into the ultimate standard of review for EISs, that adequacy is based on a rule of reason, *Cheney,* 87 Wn.2d at 344, and courts require reasonably thorough information disclosure and discussion, good data and analysis to support conclusions, and sufficient information to make a reasoned decision. *Klickitat County Citizens Against Imported Waste v. Klickitat County,* 122 Wn.2d 619, 633 (1993). Sufficiency of the data is also assessed under the "rule of reason," which requires a "'reasonably thorough discussion of

the significant aspects of the probable environmental consequences' of the agency's decision." *Weyerhaeuser v. Pierce Cnty.,* 124 Wn.2d 26, 38 (1994) (citations omitted).

In making the similar assessment under NEPA, which again, Washington State courts look to for guidance in interpreting the SEPA, federal courts require agencies to take a "hard look" at environmental impacts. More specifically, for review of NEPA claims, the Court must "ensure that an agency has taken the requisite hard look at the environmental consequences of its proposed action, carefully reviewing the record to ascertain whether the agency decision is founded on a reasoned evaluation of the relevant factors." *Te-Moak Tribe v. Interior*, 608 F.3d 592, 599 (9th Cir. 2010) (quoting *Greenpeace Action v. Franklin*, 14 F.3d 1324, 1332 (9th Cir. 1992) (internal quotation marks and citations omitted)). This review must be "searching and careful." *Ocean Advocates v. U.S. Army Corps of Engineers*, 402 F.3d 846, 858 (9th Cir. 2005). It also is guided by a "rule of reason" that asks "whether an EIS contains a reasonably thorough discussion of the significant aspects of the probable environmental consequences." *Churchill County v. Norton*, 276 F.3d 1060, 1071 (9th Cir. 2001), *amended by*, 282 F.3d 1055 (9th Cir. 2002). Under NEPA, courts have held that an agency cannot rely on "stale" scientific evidence or "ignore reputable scientific criticism" in EISs. *Seattle Audubon Soc. v. Espy*, 998 F.2d 699 (9th Cir.1993); *Carmel*, 123 F.3d at 1151.

Washington Courts have employed the "hard look" doctrine directly, characterized as the requirement for full disclosure and consideration of environmental values. *See Pub. Util. Dist. No. 1 of Clark Cnty. v. Pollution Control Hearings Bd.*, 137 Wn. App. 150, 158, 151 P.3d 1067, 1070 (2007); *Toward Responsible Dev. v. City of Black Diamond*, 179 Wn. App. 1012 review denied, 180 Wn. 2d 1017, 327 P.3d 54 (2014) (unpublished opinion) ("Courts review an EIS as a whole and examine all of the various components of [the] agency's environmental analysis ... to determine, on the whole, whether the agency has conducted the required 'hard look.'"); *see also Coalition for a Sustainable 520 v. U.S. Department of Transportation*, 881 F. Supp. 2d 1243, 1259 (W.D. Wn. 2012) (holding implicitly that "hard look" under NEPA is sufficient for SEPA review). *See also, Toward Responsible Dev. v. City of Black Diamond*, 179 Wn. App. (2014); *PT Air Watchers v. State, Dep't of Ecology*, 179 Wn. 2d 919, 927, 319 P.3d 23, 27 (2014) (citing *Norway Hill*, 87 Wn.2d at 275) (requiring "full disclosure and consideration of environmental values"). When information is either misrepresented or not materially disclosed, a supplemental EIS is required.

C. SEPA Requires Mitigation Measures Be Included.

Mitigation measures to address significant environmental impacts must be identified and analyzed in sufficient detail for the public and agencies to make judgments about the quality and quantity of mitigation, whether it will be sufficient for the harm it is intended to address, and whether it will address the harm within the relevant timeframe. Knowing these details is critical for the decision maker, because if an EIS cannot adequately identify and describe mitigation measures in sufficient detail to demonstrate that significant environmental impacts of a proposed project can be adequately mitigated, the decision maker should, under SEPA, deny permits for the project.

Mitigation measures, in order to be considered as valid mitigation of adverse environmental impacts, "shall be reasonable and capable of being accomplished." *Anderson v. Pierce Cty.*, 86 Wn. App. 290, 301 (1997) (citing *Kiewit Const. Group, Inc. v. Clark Cty.,* 83 Wn. App. 133, 143 (1996)). *See also, Neighbors of Cuddy Mountain v. U.S. Forest Serv.,* 137 F.3d 1372, 1380-81 (9th Cir. 1998). A simple list of mitigation measures is not adequate, nor is a perfunctory discussion of what might happen with mitigation. *Id.* An essential component of any discussion and analysis of mitigation measures is a full assessment of whether, when, and to what extent, a measure will be effective. *South Fork Band Council of Western Shoshone of Nevada v. U.S. Dep't of Interior,* 588 F.3d 718, 727 (9th Cir. 2009). *Cf. Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 474-75 (9th Cir. 2000) where the court found mitigation discussion adequate where mitigation measures were set forth in detail, each measure received an "effectiveness rating" for how it would address the impact, listed steps for assessing and applying each mitigation measure and discussed how the mitigation measure would address each of the specific impacts. As the court noted, this is necessitated by the "hard look" requirements of NEPA.

Further, it must be clear that mitigation is separate and distinct from alternatives. Under SEPA, an EIS must "[c]learly indicate those mitigation measures (*not described in the previous section as part of the proposal or alternatives*), if any, that could be implemented or might be required…" WAC 197-11-440(6)(c)(iii) (emphasis added). Alternatives and mitigation are further defined in the regulations as separate and distinct concepts. *See* WAC 197-11-768 and 786. The section of an EIS that includes analysis of mitigation measures is "not intended to duplicate the [alternatives] analysis in subsection (5) and *shall avoid doing so to the fullest extent possible*." WAC 197-11-440(6)(b)(iii) (emphasis added). *See also, Citizens for Safe and Legal Trails v. King County*, 118 Wn. App. 1048 (2003).

D. Cost Considerations Are Necessary to Inform Decision Makers.

Though a full cost-benefit analysis is not required under SEPA (WAC 197-11-450), SEPA contemplates "that the general welfare, social, economic, and other requirements and essential considerations of state policy will be taken into account in weighing and balancing alternatives and in making final decisions." WAC 197-11-448(1). This is because an EIS is a tool "upon which the responsible agency and officials can make the balancing judgment." *Id.* This regulatory language has been interpreted to mean that factors other than environmental factors, such as economic considerations, may drive the ultimate decision on a project proposal. *See Solid Waste Alternative Proponents v. Okanogan Cty.*, 66 Wn. App. 439, 443, 832 P.2d 503, 506 (1992) ("The environment is an important and necessary consideration in the process of situating a landfill, but it is not the only consideration."). The EIS must provide enough information so that there is a reasonable "basis upon which the responsible agency and officials can make the balancing judgment mandated by SEPA." *Id*. Further, SEPA requires that "environmental amenities and values will be given appropriate consideration in decision making along with economic and technical considerations." RCW 43.21C.030(2)(b). Additionally, SEPA requires that discussion of significant impacts include the cost of and effects on public services, such as

utilities, roads, fire, and police protection, that may result from a proposal. WAC 197-11-440(6)(e).

E. Cultural and Historic Resources Must Be Considered.

When it adopted SEPA, the Legislature recognized the importance of preserving "important historic, cultural, and natural aspects of our national heritage." RCW 43.21C.020(2)(d). Accordingly, SEPA requires EISs to analyze impacts to historic and cultural resources. WAC 197-11-440(6)(d)(iv); *Klickitat County Citizens Against Imported Waste v. Klickitat County*, 122 Wn.2d 619, 642 (1993).

IV. OTHER LEGAL REQUIREMENTS

A. Federal Laws Applicable to Animal Species Apply.

The Endangered Species Act ("ESA") (16 U.S.C. §§ 1531 *et seq*.) prohibits the unauthorized "take" of listed species. 16 U.S.C. § 1538(a)(1)(B). The ESA broadly defines "take" to include "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect." 16 U.S.C. § 1532(19). "Harm" may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. 50 C.F.R. § 17.3.

The Bald and Golden Eagle Protection Act prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of bald or golden eagles, including any part, nest, or egg, unless permitted under the authority of USFWS (16 U.S.C. §§ 668-668c).

The Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-713) prohibits the take of all migratory birds, their eggs, parts, or nests unless authorized by a permit under the regulatory authority of USFWS.

B. Public Trust Doctrine Should Be Considered.

The Public Trust Doctrine dictates protection of public resources including navigation, fish and wildlife and their habitat, recreation, and environmental uses. The Public Trust Doctrine has existed in Washington since statehood in 1889. In 1987, the Washington Supreme Court explicitly recognized that the Public Trust Doctrine applies to Washington's navigable waters, and has so been applied since statehood. *Caminiti v. Boyle*, 107 Wn.2d 662 (1987). The Project proposal has potential to adversely affect these protected resources and uses.

C. Environmental Justice Considerations Must Be Addressed.

As discussed in the Nation's scoping comments, environmental justice analysis must be a component of the DEIS for the dam/levee Project.

As stated above, Washington looks to NEPA for guidance in implementing and applying SEPA. In federal NEPA processes, agencies are required to consider environmental justice in their NEPA analysis in order to evaluate the potential that a proposed action would have disproportionate impacts affecting minority or low-income groups (Executive Order 12898, 59 Fed. Reg. 7,629 (1994)). Executive Order 12898 directed each federal agency to, among other things:

- make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations;

- identify differential patterns of consumption of natural resources among minority populations and low-income populations;

- *evaluate differential consumption patterns by identifying populations with differential patterns of subsistence consumption of fish and wildlife*; and

- *collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence*.

(emphasis added).

In considering how to evaluate progress in reaching these aspirational goals, the CEQ has defined effects or impacts to include "ecological...aesthetic, historic, cultural, economic, social or health impacts, whether direct, indirect or cumulative."[1] The Guidance directs that:

- Agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.

- Agencies should consider the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards.

- Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.

[1] CEQ, Environmental Justice: Guidance Under the National Environmental Policy Act, December 10, 1997, *available at* http://ceq.hss.doe.gov/nepa/regs/ej/justice.pdf.

- Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action.

- These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.

- Agencies should be aware of the diverse constituencies within any particular community.

- Agencies should seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and any treaty rights.

See also, EPA Policy on Environmental Justice for Working With Federally-Recognized Tribes, (July 24, 2014).[2] These principles have been enforced as to NEPA review, most recently by the decision in *Standing Rock Sioux Tribe v. U.S. Army Corps of Engineers,* 255 F.Supp.3d 101 (D.D.C. 2017) (citing *Allen v. Nat'l Institutes of Health*, 974 F. Supp. 2d 18, 47 (D. Mass. 2013) "The purpose of an environmental justice analysis is to determine whether a project will have a disproportionately adverse effect on minority and low income populations" (quoting *Mid-States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 541 (8th Cir. 2003)).

While Washington has not developed its Environmental Justice guidance to the same extent as the Federal Government, Washington and Governor Inslee have made clear that it is the policy of the state to apply and consider environmental justice principles and factors in all decision-making. This is evidenced most recently by the legislature's consideration (and the Governor's support) for the Health Equity & Access under the Law ("HEAL") Act, SB 5489, and the task force that is currently in place as a result of work on that proposed legislation. The Department of Ecology, in its most recent partnership agreement with EPA, commits to environmental justice principles in its decision-making, stating, "Ecology is committed to the principles of environmental justice and shares the EPA's goal 'to provide an environment where all people enjoy the same degree of protection from environmental and health hazards and equal access to the decision-making process to maintain a healthy environment in which to live, learn, and work.'" Environmental Performance Partnership Agreement between EPA and Ecology for Fiscal Year 2020/21.[3] The Washington Department of Health maintains an environmental justice page with links and references to federal guidance and information, explaining environmental

[2] www.epa.gov/environmentaljustice/

[3] https://fortress.wa.gov/ecy/publications/documents/1901004.pdf

justice and the intent and need to incorporate environmental justice assessment and considerations into state decision-making.[4] Given that the state plainly places a high priority on considering and assessing the environmental justice impacts of state decisions, environmental justice discussion and analysis must be part of the DEIS.

V. LEGAL SHORTCOMINGS OF DEIS

A. Reasonable Alternatives Were Not Adequately Considered.

1. Stated Purpose and Objectives Are Unreasonably Narrow.

Given the substantial investment by the State of Washington toward implementation of the Chehalis Basin Strategy, including a legislative appropriation of $73 million for implementation of the Strategy during the 2019-2021 biennium, the only viable purpose and objectives against which to determine appropriate alternatives for flood damage reduction is, as stated in the Strategy: "a long-term, integrated approach to substantially reduce damage from a major flood and restore degraded aquatic species habitat in the Chehalis Basin."[5] The purpose and objectives statement and criteria for evaluation in the DEIS, however, are so narrow as to preclude consideration of any alternatives that meet these twin objectives of the Chehalis Basin Strategy. Rather, the DEIS ignores the legislative mandate to "aggressively pursue implementation" (RCW 43.21A.730) of the integrated approach of the Strategy. The narrow focus of the DEIS on the dam/levee Project addresses only a *small* component of *one* of the goals of the overall Strategy – and only for a specifically limited and small portion of the Basin, the Chehalis-Centralia area.

In fact, the state legislature intended the PEIS to guide this integrated approach. RCW 43.21A.731(5). The PEIS analyzed several suites of actions including two types of dams: one with a temporary pool referred to as a Flood Retention Only ("FRO") dam, and one with a permanent reservoir referred to as a Flood Retention Flow Augmentation ("FRFA") facility. Neither of these dams were considered in the DEIS, but rather the proposed Project is an expandable dam—the FRE—not considered in the PEIS. **The analysis of the FRE in this DEIS is contrary to legislative direction, and arguably arbitrary and capricious.** It also contradicts the requirement in WAC 197-11-443(2) that a project EIS following a non-project EIS be limited to addressing "the impacts and alternatives including mitigation measures specific to the subsequent project and not analyzed in the non-project EIS." Moreover, the DEIS does not identify the use of a phased review, from PEIS to project-level EIS with potential for a second phase of the project—expanding the dam and creating a permanent reservoir—to be later analyzed under SEPA, as required by WAC 197-11-060(5)(e). For these reasons, the purpose and objectives in the DEIS is woefully inadequate.

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[4] https://www.doh.wa.gov/DataandStatisticalReports/WashingtonTrackingNetworkWTN/Resources/EnvironmentalJusticeIssues

[5] *See Sierra Club v. United States Forest Service*, 897 F.3d 582, 598-99 (4th Cir. 2018) (noting that "the goals that Congress has set for the agency" are important in assessing purpose and need.)

2. DEIS Does Not Justify the Dam/Levee Project Alternative.

Regardless of the Applicant's unreasonably narrow purpose and objectives for the Project, the DEIS wholly fails to comply with SEPA requirements to consider reasonable alternatives, particularly those "*that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation*" as required by WAC 197-11-440(5)(b) (emphasis added). It is both logical and a legal requirement that the stated purpose and objectives result in a reasonable alternative that meets them.

The DEIS states the purpose and objective for the dam/levee Project are:

> The Applicant's **purpose** for the Proposed Project is to reduce flood damage in the Chehalis-Centralia area by constructing a flood retention facility and temporary reservoir near Pe Ell and making changes to the Chehalis-Centralia Airport levee.
>
> The Applicant's **objective** for the Proposed Project is to reduce flooding coming from the Willapa Hills and improve the levee protection level at the Chehalis-Centralia Airport.

DEIS, p. 6 (emphasis added). The DEIS further states the intent for the FRE facility "is to reduce the severity and duration of major floods or larger caused by rain falling in the Willapa Hills and reduce flood damage in Centralia and Chehalis." DEIS, p. 7. Similarly, the Fact Sheet notes, "The proposed FRE facility is considered expandable because it would be built with a foundation and hydraulic structure extents capable of supporting the future construction of a larger facility that could expand the water storage from 65,000 acre-feet to up to 130,000 acre-feet. This *expansion may or may not occur* and, if pursued in the future, it would be subject to a separate environmental review and permitting process." DEIS Fact Sheet, p. v (emphasis added).

The DEIS's purpose and objectives are written in broad, general terms to address storm impacts from the Willapa Hills and flooding in the Chehalis-Centralia area, but say nothing about the need for an expandable dam. As explained below, the Applicant says a bigger dam with permanent pool is not justified but fails to disclose facts that suggest if an <u>expandable</u> dam is built, that an <u>expanded</u> dam will eventually be built to address higher peak flows predicted under climate change. **We can only assume this is to avoid analysis now of the increased environmental impacts and costs of a larger expanded dam that would be built in the future.**

The DEIS statements about purpose and objectives on their face do not suggest, let alone support, that a "future construction" expanded dam ("FRE-FC") with a permanent reservoir is actually needed. Clarifications found in appendices to the DEIS provide additional insight about why the FRE was designed to include a "future construction" addition and permanent reservoir, but still fail to demonstrate why an expanded dam is needed and fail to justify an expandable dam as an alternative that meets the purpose and objectives stated in the DEIS:

> An additional dam and fish passage configuration (FRE) has been developed and presented in this report. This alternative would construct a large foundation and a low dam, with the potential for future expansion if additional flood storage or flow augmentation water storage was desired. The benefits of this configuration include:
>
> 1. Potential for adaptation of project objectives to address uncertainties associated with climate change on flood storage and routing requirements.
> 2. Potential for further optimization of flow augmentation requirements and deliveries in response to better understanding of environmental changes and needs that are occurring in the basin below the dam.

Appendix 1, Attachment A-2, p. 42.

We note that "flexibility for future generations" was not an objective included in the DEIS. However, in a letter from the Applicant to the Corps of Engineers dated March 7, 2019 discussing the need for an expanded dam and configuration selection history, the Applicant states:

> The Need for Flexibility as a Project Objective
>
> The third objective presented in the Purpose and Need stated that the proposed project should provide future leaders in the Chehalis Basin the flexibility to address potential future increases in peak flood levels and decreases in stream flow during summer months through an adaptable design approach. It is not the position of the District to take any stances on the subject of climate change or assert any expertise in the area of climate science. Regardless of future climate predictions, we do feel that is immensely important to plan ahead for an uncertain future. We would also like to point to the objective reality of the streamflow pattern that has shown increasing flood peaks over the last 30 years. The streamflow has been measured at the Ground Mound gage about 90 years and has shown that the five largest flood peaks have occurred since 1985. This is illustrated in a figure from Section 3.1.2.2 Flooding and Floodplains from the Chehalis Basin Strategy Programmatic EIS (PEIS), reproduced below. The observed flow pattern may or may not continue into the future, and it is for future leaders to decide whether additional flood retention or possible flow augmentation will be beneficial. This uncertainty is exactly why we have chosen not to include the final construction version in this permitting process; it may never be needed or built.
>
> It is estimated that adding a larger base to the flood retention facility will cost an additional $100 million above the FRO version to construct. If this adaptability is not built into the project, the current facility would need to be removed and another constructed, the costs of which would likely be prohibitively large. Adding this adaptability to be built into the project construction will allow a future generation

> the choice to address future problems that are unforeseeable today at a potentially much more attainable cost than full reconstruction.

DEIS, Appendix 1, Attachment A, Part 8, pp. 1-2.

The letter further states, "The FRO was ruled out because it did not meet our third project objective of allowing flexibly for future generations to have the options of expanding the facility. The FRFA was ruled out because it was generally agreed within the advisory committee and other stakeholders within the basin that the FRFA would present unnecessary environmental impacts. The benefit of summertime flow augmentation or additional wintertime flood retention could not be shown to undeniably outweigh the impacts." *Id*. at p. 3.

By its own admission, the Applicant demonstrates an expanded FRE-FC is not warranted because it rejected the FRFA as "not necessary to meet the purpose and need" and because of its "unnecessary environmental impacts." The FRE-FC is "very similar to the FRFA" and has the same dam structural height (313 ft.), same water storage elevation (687 ft.), and same reservoir storage volume (130,000 acre feet) as the FRFA.[6] Given these facts, there is no justification to spend an additional one hundred million dollars to enable future construction of the FRFA that is not warranted.

A prior letter from the Applicant to Chrissy Bailey (Ecology Chehalis Basin Strategy Program Manager) dated May 10, 2018, not included in the DEIS, patently contradicts the need for the FRE-FC because it rejects the equivalent FRFA:

> This alternative, originally contemplated in the Chehalis River Basin Strategy Programmatic Environmental Impact Statement, is the Flood Retention / Flow Augmentation water retention facility, also known as the FR/FA. This alternative was discussed in detail with the District Board of Supervisors at the April 25, 2018 regular District Board meeting.
>
> At that meeting it was determined by the Board that the FR/FA alternative **is not necessary to meet the purpose and need** statement developed by the District. It was also determined that this type of facility, including a permanent reservoir, **does not meet the intent of the project** that the District is proposing. In addition, evaluation of the FR/FA would likely show that: it would raise more significant

[6] DEIS, Appendix 1, Attachment A-2, "Chehalis River Basin Flood Control Combined Dam and Fish Passage Supplemental Design Report, FRE Dam Alternative," (September 2018) Table 11-1 at pp. 27, 41-42. It further states, "The FRE-FC Dam Alternative is. . . ***very similar to the FRFA Dam Alternative evaluated previously***, with the exception that there are two additional low level flood regulation sluices, and all of the sluices are set lower in elevation than the FRFA Dam Alternative. As with the FRFA Dam Alternative, a permanent reservoir would be formed behind the FRE-FC Dam. . . . The previously conducted hydraulic evaluation of the FRFA dam was used to inform design of the FRE-FC alternative. Additional detailed evaluation has not been performed for development of the FRE-FC alternative ***due to similarities with the FRFA configuration***. . . . Please refer to the main report (HDR, 2017a) for specific details on the general hydraulic characteristics and performance of the FRFA, ***and by similarity the FRE-FC Dam Alternative***." p. 27 (emphasis added).

> environmental issues; take additional review time; and create unnecessary additional costs for the overall project.
> . . .
>
> For these reasons the District is requesting to both the ACOE and the DOE that the FR/FA be officially removed from consideration as an alternative in both the current SEPA and NEPA project environmental review processes.

(emphasis added). Letter from Applicant Chehalis River Basin Flood Control Zone District to Chrissy Bailey dated May 10, 2018, Attached as Exhibit B. Minutes from the District's meeting of April 25, 2018, do not indicate the details of that discussion. Attached as Exhibit C.

Furthermore, because the DEIS only considered an expandable dam rather than a non-expandable larger dam with a permanent reservoir such as the FRFA (the equivalent of the future expanded FRE), it neither explains nor justifies the increased costs of that expandability. There is a generalized comparison of costs of the FRO, FRFA, FRE and FRE-C in Table 11-1. DEIS, App. 1, Att. A-2, pp. 41-42. This indicates a construction cost estimate for the FRO of $341,000,000 and for the FRE of $401,000,000—a difference of $60,000,000 apparently due to the expandable nature of the FRE not included in the FRO design. The explanation of FRE Additional Costs on p. 39 of this Report does not provide clarity regarding the increased costs for expandability except to say, "The same level of foundation grouting as the FRFA has been included for the FRE which is more robust than the grouting included and priced for the FRO." However, the conclusion of this Report is that, "This alternative would construct a large foundation and a low dam, with the potential for future expansion if additional flood storage or flow augmentation water storage was desired." *Id*. at p. 42. In an Appendix to that Report, there is another table showing comparative "Concept-Level Opinion of Probable Costs: Summary of Key Information." Table 13-1, Appendix J, pg. J-2. Many cost scenarios are compared for the FRO, FRFA, FRE and FRE-C, but the Low End without an Escalation for the projected 7-year time period of construction is provided for the FRO at $245,000,000 and for the FRE at $307,000,000—a $62,000,000 difference. For the High End including Escalation for the 7-year construction period, the FRO is projected at $447,000,000 and the FRE at $533,000,000—a difference of $86,000,000. It is unclear why the figures in this table are not included in the Report or why they are not consistent. Based on the Nation's analysis and numerous admissions in the DEIS of major maintenance and mitigation plans yet to be developed, the cost estimates grossly under-estimate the final costs of the Project. *See* Economics & Socioeconomic Analysis Review, major finding 8.

It is confounding how the Applicant and Ecology can justify the additional cost of building an <u>expandable</u> dam, between $60 million and $100 million by the Applicant's own estimate, without first establishing that an <u>expanded</u> dam is needed. This is particularly egregious in light of the Applicant's admission that the FRFA dam with a permanent reservoir did not meet the purpose or intent of the Project and "it would raise more significant environmental issues; take additional review time; and create unnecessary additional costs for the overall project."

Under the logic in the DEIS that a dam is an appropriate solution to reduce flood damage, in fact, according to the Nation's analysis, the data presented in the DEIS supports an assertion that a larger dam with a permanent reservoir would meet the stated purpose and objective in 2060-2080 because of increased peak flows resulting from the warming climate. We can only assume the DEIS does not include this analysis for disingenuous reasons—intending to build a larger, more environmentally-harmful dam without disclosing the true impacts and costs now and risking public and political rejection or substantive denial by Ecology under SEPA. When one considers the Probable Maximum Flood ("PMF") and dam design in light of the PMF, the likelihood of constructing a future expanded dam becomes obvious.

Dams must have emergency spillways that can safely pass the PMF per requirements in the Washington State Dam Safety Guidelines (WSE, 2016). DEIS, App. 1, Att. A-2, pp. 9-12. The PMF is defined as "the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin under study." This Report states that the PMF is 69,800 cfs, and that both the FRE and FRE-FC spillways are designed for this discharge. *Id*. at 9. Being able to safely route and pass the PMF over the spillway is a required dam design criteria by the Washington State Dam Safety Guidelines and FEMA.[7] The DEIS does not include any analysis of the future conditions of the PMF. However, if the climate change scenario that is assumed in the DEIS for late century (+26%) was applied to the discharge for which the FRE is designed (69,800 cfs), the PMF would equal 87,950 cfs. **As the minimum freeboard is already being met during the present-day PMF at 69,800 cfs, there is no further capacity for the FRE to accommodate additional flow and there is the potential for the FRE to be overwhelmed by the late century PMF.** The hydraulic modeling has not shown that the dam design, for either the FRE or FRE-FC, can safely pass the future conditions PMF.

Under SEPA, either a purpose and need must be presented that justifies the expandable FRE as an alternative, which means that expansion is foreseeable and not speculative and its impacts should have been evaluated in the DEIS, or the DEIS is deficient because it has not evaluated the least environmentally harmful alternative that meets the stated purpose and objective for the Project (i.e., the FRO non-expandable dam with a reservoir that is periodically filled).

In summary, the DEIS is invalid because it chooses a course of action—the construction of the expandable FRE, for which there is no corresponding discussion of purpose or need or evaluation of the foreseeable impacts of an expanded dam. The DEIS does not address how the "uncertainty" of future climate realities justifies spending nearly one hundred million taxpayer dollars building an expandable dam. The purpose and need section of the DEIS does not identify the need for an expanded FRE-FC, and thus, the need for an expandable FRE is not justified by the DEIS. The building of an FRFA (the equivalent of the larger FRE-FC with a permanent

[7] "Selecting and Accommodating Inflow Design Floods for Dams" FEMA P-94, August 2013 available at https://www.fema.gov/media-library-data/1386108128706-02191a433d6a703f8dbdd68cde574a0a/Selecting_and_Accommodating_Inflow_Design_Floods_for_Dams.PDF

reservoir) was not evaluated as an alternative. Given the acknowledgement of severe environmental impacts of the FRFA (equivalent to the expanded FRE-FC dam with a permanent reservoir), it is disingenuous, at best, and patently unreasonable that the DEIS analyzed an alternative including only an expandable dam rather than the larger FRFA with a permanent reservoir.

3. DEIS Fails to Provide Comprehensive Flood Risk Evaluation for Target Area, Compounding the Lack of Justification for Choosing the FRE As the Proposed Project.

The proposed Project purpose is "to reduce flood damage in the Chehalis-Centralia area by constructing a flood retention facility and temporary reservoir near Pe Ell and making changes to the Chehalis-Centralia Airport levee." The DEIS also states, "The Applicant intends for the flood retention facility to reduce the severity and duration of major floods or larger from storms from the Willapa Hills." DEIS, p. S-3. The DEIS fails to explain the difference between flood damage and floods. Major floods do not equate to flood damage. Flood damage only occur in areas where development is exposed to flooding and not designed to accommodate flood waters. Flood-resilient communities accommodate major flooding with little or no damage. Throughout the DEIS, it is falsely implied that the only means of reducing flood damage is to reduce flooding.

The DEIS fails to provide a comprehensive assessment of how effective the FRE will be at reducing flood peaks in the Chehalis-Centralia area because it ignores the regular flood damage the area experiences from several local creeks and only vaguely acknowledges that "storms centered over the Black Hills and Cascade Range foothills can cause flooding in the Skookumchuck, Newaukum, and Chehalis Rivers in the Centralia/Chehalis area." (DEIS App. N, p. N-15)

The Chehalis-Centralia area experiences regular flood damage from several local creeks that flow through the two cities, most notably China Creek, Salzer Creek, Coal Creek and Dillenbaugh Creek, but nothing in the DEIS acknowledges the flood risks posed by local creeks. *See* Local Actions Alternative Technical Analyses Review. The DEIS has inappropriately focused on flooding from a single source within the Chehalis Basin – the upper Basin above the Town of Pe Ell – when it is well known that damaging floods originate from numerous sources within the Chehalis Basin, including the South Fork Chehalis, Newaukum, Skookumchuck, Satsop and other watersheds. *Id*.

The flood risks posed to the target area in and around the cities of Centralia and Chehalis should have been evaluated comprehensively to understand the geographic sources of flooding by a range of storm events that include the following:

- Storm event centered over the Cascade Range where the bulk of flood water originates from the Skookumchuck and Newaukum Rivers. This storm event should include variations where Skookumchuck Reservoir has storage capacity to dampen the flood event, and where it does not have flood storage capacity. Storm events centering over this

area have the added risk of being rain-on-snow events that significantly contributes to the magnitude of flooding.

- Storm event centered in the Willapa Hills, but with the majority of flow coming from the Stillman Creek and South Fork Chehalis River versus the Upper Chehalis River.

- Storm event centered in the Willapa Hills similar to the 2007 flood event. We understand that for the late-century catastrophic flood scenario for the DEIS, rainfall and runoff projections were modeled statistically throughout the Basin, with peak flows distributed in all areas in the basin, and not focused on a particular area as occurred in the 2007 flood when rainfall was concentrated in the Willapa Hills.

- Cloudburst rain event with intense rainfall centered over Centralia and Chehalis sub-basins, including China, Salzer, Coal and Dillenbaugh Creeks.

Id.

The failure to adequately evaluate different geographic sources of flooding and a range of storm events compounds the DEIS's failure to actually meet its stated purpose and objectives.

Failure to assess the scenarios outlined above is particularly acute for the residential and business district of Centralia. This area is shown in the DEIS flood inundation maps as "no longer flooded" during the catastrophic flood with the proposed Project. Because the DEIS does not comprehensively evaluate potential sources of flooding for this area and pathways of flooding, however, it cannot definitively conclude that these areas would actually be removed from flood risk with the proposed Project, rather than just removed from flood risk for only the specific Chehalis River storm event evaluated in the DEIS. This approach contradicts sound standards of flood risk management practices to comprehensively assess flood risks to an area, and then develop solution options to address those risks. *Id*.

Flood damage reduction and flood risk mitigation standards of practice dictate that flood risks to a target area be comprehensively evaluated in order to provide reasonable assurance that the best techniques are applied to the right areas. As stated in FEMA Guidance for Flood Risk Analysis (2019):

> [D]ata and information obtained during the Discovery process should demonstrate a holistic picture of flooding issues, flood risk, and flood mitigation needs and capabilities within a watershed. The data and information gathered should also provide an understanding of the geography, demographics, and willingness to address risks, infrastructure presence, underlying building codes, and other critical elements that will provide a full understanding of the watershed.

Unlike the proposed Project, a viable Local Actions Alternative offers a means of reducing local flood damage originating from streams and rivers other than the Upper Chehalis, providing more comprehensive relief throughout the Basin. **A much more detailed Local Actions Alternative is best suited to provide the comprehensive plan needed to address the range of flood problems, inundation pathways and geographic flooding scenarios not considered in the DEIS and more in keeping with the original legislative direction for the Basin**. *Id*.

4. Proposed Project Does Not Meet DEIS Metrics.

The DEIS identifies these specific metrics to measure flood damage reduction:

1. Protect approximately 635 structures of value from flooding risk during a catastrophic flood.
2. Reduce disruption of access via main transportation routes, specifically ensuring access along SR 6 and Interstate 5 (I-5) is open within 24 hours of a catastrophic flood.
3. Minimize flood-related impacts (e.g., closure) at the Chehalis-Centralia Airport.

DEIS, p. 8.

The DEIS confirms that none of the locations identified along I-5 and SR6 as "no longer being flooded" under the Proposed Project would be flooded for more than 24 hours under the No Action Alternative under either the major or catastrophic flood scenario and at both mid-century and late-century conditions. Thus, the Applicant's stated metric specifically "ensuring access along SR 6 and Interstate 5 (I-5) is open within 24 hours of a catastrophic flood" is not met as a result of the Proposed Project. DEIS, Appendix K, Table K-9 at p. K-32. This flaw also supports substantive denial of this proposed Project, particularly when coupled with the DEIS's failure to meaningfully analyze the least environmentally-harmful Local Actions Alternative, as discussed in Section B.7 below, and the overall significant adverse environmental effects of the proposed Project.

5. Local Actions Alternative Is Viable Yet Not Adequately Considered.

The DEIS fails to include an adequate description of the components of the Local Actions Alternative that will reduce flood damage. In order to be consistent with international best practices for addressing basin-wide flooding, local actions should be collaboratively developed between local governments/communities with overarching guidance from the Office of the Chehalis Basin for the precise reason the Office was created—to implement a Basin-wide integrated plan that addresses the dual mandates of reducing flood damage and restoring aquatic species habitat. It is not only unacceptable that the DEIS simply passes responsibility of developing and implementing the Local Actions Alternative to local governments, but it underscores that the DEIS made no attempt to present a reasonable alternative to the proposed Project as required by SEPA:

> The Local Action Alternative does not identify specific projects because those decisions would be made by local governments. Therefore, the EIS does not analyze the feasibility or economic practicability of these potential actions.

DEIS, p. S-6.

The DEIS's failure to define or meaningfully evaluate the Local Actions Alternative deprives the state of a valid comparison to meet the project purpose and the dual goals of the Chehalis Basin Strategy to reduce flood damage and improve aquatic species over the long-term. The DEIS fails to mention that a Local Actions Alternative can best address local issues and would provide a more effective means of distributing state funding to the direct benefit of local and regional economies. The DEIS fails to mention that only the Local Actions Alternative includes a permanent means of eliminating flood damage, which is relocating development to areas not subjected to flooding, an action that would also stimulate local construction and economies. This approach is internationally recognized as the best possible long-term flood protection with respect to public safety, benefit-cost ratio, and environmental protection. The lack of specificity of the Local Actions Alternative also deprives local decision makers and the public the opportunity to evaluate the benefits and impacts of an FRE alternative compared to an alternative with lesser environmental impacts and greater economic benefits.

The DEIS concludes, with no evidence or support, that, "In the long term, the Local Actions Alternative would not greatly reduce flooding in the basin but would reduce flood damage. Surface and groundwater throughout the study area would continue to experience substantial flood risk during both major and catastrophic floods." DEIS, p. 54. This is contradicted by statements that the Local Actions Alternative meets the stated purpose and objectives and could be effective:

> The Local Actions Alternative considers a variety of local-scale options that local governments and agencies could choose to do in the future. These actions could achieve the Applicant's objective to reduce flooding from storms in the Willapa Hills through improving floodplain function, land use management actions, buying out or relocating at-risk properties or structures, improving flood emergency response actions, and increasing water storage from Pe Ell to Centralia.

DEIS, pp. S-6 - S-7, p.24.

None of these action elements, however, are developed to a level of specificity for the DEIS to evaluate the flood damage reduction benefits that could be achieved. Some examples (*See* Local Actions Alternative Technical Analyses Review for additional detail) include:

- Buy-out or Relocation of At-Risk properties: No assessment of how many flood prone properties are currently available and voluntarily for sale is provided. The Technical Analyses Review referred to above indicates from Pe Ell to just downstream of

Chehalis/Centralia at least 59 properties for sale. No description is provided of any of the numerous successful programs in the U.S. that provide support for buyouts and relocations.

- Land Use Management: Specific mechanisms for minimizing floodplain development are not defined. No description of how buyouts and relocations could reduce flood damage is provided. No analysis of how local flood protection measures (levees, floodwalls, floodgates, pump stations) could reduce flood damage is included.
- Floodplain Storage Improvement: No information is provided about how to identify effective floodplain storage areas or at what scale they are needed to be effective.
- Floodproofing: No description or analysis of effectiveness of floodproofing versus other elements of Local Actions Alternative are provided.
- Early Flood Warning Systems: No analysis is provided about the extent and effectiveness of the current flood warning system or where improvements might be needed.

Channel migration protection was also referred to as part of the Local Actions Alternative. Erosion accounts for a significant percentage of flood damage in the Chehalis Basin yet the DEIS fails to address erosion risks in any way. No comprehensive mapping of erosion hazards or channel migration zones has been completed, other than for the Newaukum Restorative Flood Protection Assessment (Abbe et al., 2020). Mapping of erosion hazards and channel migration zones is both essential to flood damage reduction and is a valuable element for local communities in planning to reduce flooding risks. This work is also an essential component of land acquisition and relocation programs. *See* Local Actions Alternative Technical Analyses Review.

Without specificity of the potential impacts and benefits, it is impossible to judge the merits of the Local Actions Alternative. These shortcomings in the DEIS analysis result in an underestimation of the potential viability of the Local Actions Alternative and related actions to accomplish flood damage reduction at a lower environmental, social and economic cost to the Chehalis Basin and State of Washington. A viable Local Actions Alternative would:

- Offer sustainable long-term holistic solutions using local structural flood defenses, relocation/upland development, property acquisition and flood proofing that deliver net environmental benefits without introducing long-term liabilities such as catastrophic flooding caused by a dam failure.
- Forever remove the risk of flood damage through buyouts and relocations as permanent solutions requiring no ongoing operation, maintenance, or replacement costs that come with an FRE dam. For every dollar spent on acquisition of flood-prone properties there is a $2 to $7 return (Figure 1; Hawley et al. 2012). Acquisitions and relocations also provide valuable environmental benefits.

- Create jobs and directly contribute to local economies.
- Support economic development in upland areas that do not conflict with environmental goals and treaty rights, including programs and legislative actions to ensure development in the Cities and Ports of Chehalis and Centralia are not adversely impacted.
- Build resiliency into the community by protecting designated critical land uses in the floodplain against all flooding (not just major flooding) and encourage other growth to shift to upland areas.
- Be completely compatible with the Aquatic Species Restoration Plan, opening up large areas of floodplain for restoration and sustaining the natural processes such as flooding and channel migration that support ecosystems services and resilient fish and wildlife populations.

Id. See also, Land Use Comment Matrix.

The Office of Chehalis Basin has already initiated development of the Local Actions Alternative through its Community Flood Assistance and Resilience ("CFAR") Program, which the DEIS fails to acknowledge. If pursued in earnest, the CFAR program would deliver effective flood damage relief through flexible means, tailored to individual preferences and site-specific conditions for all levels of flooding, not just extreme floods. *Id*.

To date, more than $50 million of state money has been spent developing the Proposed Project, while only approximately $4 million has been invested in developing a Local Actions Alternative through the CFAR program. With a similar investment commitment, a viable Local Actions Alternative could provide a realistic means for the Chehalis Basin Strategy to achieve both flood damage reduction and habitat restoration and resiliency goals, simultaneously increasing the vitality and resiliency of this basin for all its communities, ecosystems, and species. *Id*.

SEPA requires that an EIS contain a *detailed discussion* of alternatives to the proposed action. RCW 43.21C.030(c)(iii). In particular, SEPA requires evaluation of reasonable alternatives that would mitigate adverse effects of proposed actions on the environment. A viable but unexamined alternative renders an EIS inadequate. Therefore, DEIS's failure to adequately consider the Local Actions Alternative renders it inadequate.

6. DEIS Should Have Considered Additional Reasonable Alternatives.

With regard to the stated purpose of protecting the Centralia-Chehalis airport against flood damage, it would have been reasonable to include the Levee improvements around the Centralia-Chehalis airport in the Local Actions Alternative, particularly given its lesser environmental impacts and likely mitigability of those impacts. Another reasonable alternative to protect the airport would be moving it, consistent with numerous levee setbacks throughout Washington that have been funded by the State. The Port of Centralia-Chehalis, which operates the airport, has

authorities pursuant to Ch. 53.04 RCW and Ch. 53.08 RCW that could be employed to this end. The DEIS provides no supporting justification for not including other reasonable alternatives. *See* Economics & Socioeconomic Analysis Review, major finding 16.

Because there has been no cost/benefit analysis completed as part of the DEIS, there is no information or justification that allows the public and decision makers to weigh the economic benefits of the airport for the region versus the costs of protecting it from flood damage. This is an important consideration for decision makers given the potential cost of construction of the Levee improvements is between $4.1 million and $5.1 million (in 2016 $), with annual maintenance estimated at $8,000 (in 2016 $), and the fact that the Olympia Airport is a mere 20 miles to the north. Levee costs are included in the PEIS (Appendix C, p. 20), but not in the DEIS. *See* Local Actions Alternative Technical Analyses Review for elaboration of this potential alternative.

7. DEIS Provides No Requisite Comparison of Alternatives.

Because the DEIS fails to meaningfully analyze the Local Actions Alternative (*see* Section V.B.7 below), it cannot and does not include a comparison of impacts of the two Alternatives as required by WAC 197-11-440(5)(c)(vi). Nor does the DEIS adequately compare these two Alternatives to the No-Action Alternative. *See also* Economics & Socioeconomic Analysis Review, major finding 9. As a result, the DEIS fails to "provide impartial discussion of significant environmental impacts and [to] inform decision makers and the public of reasonable alternatives, including mitigation measures, that would avoid or minimize adverse impacts or enhance environmental quality." WAC 197-11-400(2).

Such a comparison could have highlighted the cost-effectiveness of other alternatives. For example, for a late-century major flood scenario, if the FRE is built, only 148 valuable structures would no longer be flooded. DEIS, p. 117. At a rough placeholder cost of $500,000 each, these valuable structures could be purchased for $74 million. Similarly, under a late-century catastrophic flood scenario, 1,280 structures would no longer be flooded. *Id*. At $500,000 each, they could be purchased for $640 million, still less than the cost of the proposed Project overall, especially in light of the many unaccounted-for costs. *See* Economics & Socioeconomic Analysis Review, major finding 8.

The chosen proposed Project Alternative—an unwarranted expandable FRE dam—does not meet the SEPA requirement to analyze an alternative that meets the stated Project objectives at a lower environmental cost. Conversely, the Local Actions Alternative meets the Project objectives as the least-environmentally harmful alternative, but it was not meaningfully analyzed in the DEIS (*see* Section VI below). This is a fundamental failure rendering the DEIS wholly inadequate under state law, unable to withstand legal challenge, and thus, requires denial under Ecology's substantive authority.

B. Data/Analysis of Impacts Are Inadequate Under SEPA.

Construction and operation of the proposed Project would significantly adversely affect environmental conditions in the Chehalis Basin. The DEIS admits significant unavoidable impacts, or significant impacts,[8] for every element of the environment considered, as summarized in Exhibits S-5 and S-6. DEIS, pp. S-11, S-13-S-16. Those conditions and the effects thereon will significantly and adversely affect the ability of the Basin and estuary to sustain fundamental physical and ecological processes that create and sustain the habitats that affect the abundance and productivity of fish, wildlife, and plants. These ecological processes and the fish, wildlife and plants they support, are essential to the ability of the Nation to exercise its treaty-protected rights. Additionally, habitats of the species present in those areas would be adversely affected by the anticipated increased demand for development of the floodplain following reduction of flood risk. Despite the obvious stated significant impacts, however, the DEIS consistently, and for every environmental element, **under-reports, under-analyzes, and/or under-represents** the magnitude and intensity—both in space and time—of those significant impacts. Best available science was not employed in most of the analyses supporting the conclusions in the DEIS. The Nation elaborates in detail below and in various Technical Memos and Comment Matrices referenced in this letter and provided as Attachments.

1. Fundamental Errors in Analysis Create a Cascade of Impacts Insufficiently Analyzed.

Consistent with best available science, the Nation's technical review of the DEIS findings focuses on ecological linkages between the physical and biologic processes and the biological feedback and amplification responses that will occur as a result of impacts from the proposed Project, considering well-established interactions between geomorphic, hydrologic, and ecological processes that form and maintain high quality aquatic, riparian and floodplain habitat. Construction and operation of dams, and their associated upstream reservoirs, result in both direct and indirect impacts to aquatic, wetland, and riparian ecosystems. Flood control dam operations designed to capture and hold back high flows have been reported to result in a "cascade of effects," or impacts, both within dam reservoirs and on downstream river, wetland, and riparian ecosystems, impacts that are amplified over the lifetime of a project. *See* Cascade of FRE Facility Ecosystems Effects Technical Memo.

A flood control dam alters the natural flow, sediment, and wood regimes, creating what is referred to as a first-order impact that sets in motion a cascade of effects to the fundamental physical processes that form and sustain river ecosystems. Alteration of the natural flow, sediment and wood regimes directly affects both downstream sediment transport and channel hydraulics, resulting in channel incision, alteration of channel and floodplain morphology over time, referred to as a second-order impact. These impacts affect instream flows and groundwater

[8] The DEIS subjectively describes impacts throughout as "minor," or "moderate" or "significant" without describing any process, criteria, or threshold for such designations. In many instances, "minor" or "moderate" determinations, particularly related to downstream impacts, are scientifically unsupported. The use of these designations and their application appears to be arbitrary and inconsistent with SEPA.

levels that directly and indirectly set up a third-order impact to existing plant, fish and wildlife habitat and how this habitat changes over time. This, in-turn, adversely affects the plant and animal populations and their habitats. Changes in plant communities, such as vegetation encroachment into a side channel that now has a reduced flow regime, may subsequently cause changes in channel hydraulics, causing channel incision and decoupling channel and floodplain lateral connectivity, causing feedback that further alters plant communities, habitats, and fish and wildlife populations. This leads to higher order -impacts. *Id*.

The DEIS and underlying discipline technical analyses include **critical assumptions, omissions, and errors** that result in a **gross underestimation** of the potential for and magnitude of ecosystem-scale impacts and the amplification of ecosystem impacts over time if the proposed Project is approved for construction and operation. *Id*.

The DEIS fails to account for the ways in which climate change projections for increased frequency and magnitude of peak flows of all sizes will also affect sediment transport. This, in turn, will exacerbate downstream channel incision and related impacts to habitat-forming processes and habitat quality. However, none of these impacts are considered in the DEIS.

Four major first-order impacts related to **upstream** reservoir ecosystem hydrology and sediment supply are individually underestimated in the DEIS:

- The frequency and duration of reservoir impoundment are underestimated for both current and future climate conditions.
- The frequency and duration of backwatering events and their associated impacts are not considered or analyzed.
- Increases in the frequency and magnitude of landslides and hillslope erosion, and therefore sediment delivery, are drastically underestimated.
- Flow releases during reservoir pool drawdown will increase the duration of flows potentially capable of bank erosion, which was not analyzed.

Id.

There are three main shortcomings in the DEIS analyses that indicate that the **FRE will be operated more frequently and for a longer duration than presented in the DEIS, particularly under future climate conditions.** *See* Hydrology Technical Memo 2 - Hydrology and Climate Change. In summary, the DEIS: 1) fails to consider observed flows; rather, it states the operators will rely on predicted flows as the basis for closure of the FRE and impoundment in the reservoir; 2) fails to consider multiple sequential rain events that would affect reservoir drawdown; and 3) inadequately addresses future climate predictions by assuming a 26% increase in annual peak flows based on averaging across sites and across recurrence intervals instead of using a well-established ensemble approach to develop a range of possible future hydrological conditions. Accordingly, the FRE facility would likely be operated once every 1.8 and 1.4 years, on average, under mid- and late-century climate scenarios, as opposed to the DEIS estimates of 5 years and 4 years, respectively. The methods and analysis used to develop these conclusions are presented in

Hydrology Technical Memo 1 - Observed and Predicted Flows, and Hydrology Technical Memo 2 - Hydrology and Climate Change.

The DEIS also fails to quantify the frequency and magnitude of impacts due to backwatering when the FRE is not intentionally impounding water. Backwatering occurs when streamflow is obstructed by a natural flow constriction, channel-spanning blockage, or infrastructure that lacks the conveyance capacity to pass the full volume of discharge downstream. *See* Hydrology Technical Memo 2 - Hydrology and Climate Change. The conveyance capacity of the Low-Level Outlets ("LLOs") of the FRE facility is limited, and backwatering will initiate at discharges of 8,500 cfs or greater: "For flows over 8,500 cfs, the water would start to pond at the outlet entrances and rise into the reservoir area." DEIS, p 14. The DEIS acknowledges that ponding affects river processes such as sediment transport (DEIS, p F-69) and transport of large woody material (DEIS, p F-78), fish passage (DEIS, Appendix 1-Attachment A, p G-108), and wildlife habitat and use (DEIS, p F-73). However, under the mid-century climate scenario, the frequency of backwatering is 11 times in 31 years and under the late-century climate scenario it is 9 times in 31 years (note that the decrease in frequency of these events is due to an increase in the frequency of the FRE operation threshold being met). Thus, **backwatering would occur and first-order river processes such as bedload transport and downstream flow levels would be adversely affected more frequently than the DEIS states would occur with the proposed Project**. *Id*.

Significant errors and flaws in the analysis of geologic hazards are propagated in the landslide analyses, sediment transport impact analyses, and habitat impact analyses. *See* Earth Discipline Report - Geology Technical Analyses Review. The Nation's analysis demonstrates: 1) widespread slope instability within the watershed; 2) a much greater potential for slope instability resulting from vegetation removal and fluctuating reservoir levels than was disclosed in the DEIS; 3) significantly more landslides and landslide potential than is revealed in the DEIS; 4) a resulting underestimation of sediment inputs into the Chehalis River from landslides; and 5) landslide impulse waves due to reservoir operations pose significant risk to the environment and the Project, yet are not described or analyzed despite extensive published science. Because the frequency of reservoir filling and draining overtime is underestimated in the DEIS, resulting in higher reservoir pool conditions for longer inundation periods, the frequency of resulting landslides is also substantially underestimated. Further, the DEIS fails to identify and evaluate all impacts from reservoir area hillslope deforestation. *Id*., *and see* Earth Comment Matrix.

The **increased landslide occurrences will dramatically increase the sedimentation rate in the reservoir area**. Because landslides and landslide potential are extremely underrepresented in the DEIS, the estimated 840,500 cubic yards of sediment delivered by landslides will be much higher -- potentially 16 million cubic yards or higher over the life of the Project. **A significant portion of landslide sediment inputs will be fine grained material that will adversely affect salmonid egg survival.** The rapid input of fine sediments to the reservoir following slope failure will affect flows and water exiting the reservoir, likely evacuating a large portion of the suspended sediments from the reservoir. These fine-grained sediments will be transported and deposited downstream where it will have ecological impacts. **These impacts resulting from the**

proposed Project will be so great that fish populations in the Chehalis River will be irreparably damaged, if not potentially lost all together. *Id*.

As a result of underestimating several first-order impacts to individual processes, **upstream** impacts to second- and third-order functions such as channel morphology, sediment transport, vegetation community composition, and aquatic habitat are also underestimated. The operation of the FRE facility and filling of the reservoir will contribute to increased frequency of landslides and will impair establishment of mature riparian vegetation. The impacts to vegetation will subsequently contribute to landslide frequency, reduced water quality, and loss of large wood recruitment. *Id*.

The same first-order impacts that drive the cascade of ecosystem impacts in the upstream reservoir are also applicable to **downstream** ecosystems, including underestimation of the frequency and duration of reservoir impoundment, the frequency and magnitude of landslides and therefore sediment supply, and reductions in large wood recruitment. *See* Cascade of FRE Facility Ecosystems Effects Technical Memo for further explanation.

In addition to those impacts, the following first-order impacts **downstream** of the FRE facility are individually underestimated in the DEIS:

- Reductions to groundwater recharge are underestimated based on underestimated frequency of peak flow events that would trigger FRE operation and underestimated recharge rates.

- The hydrologic connection between groundwater and surface water are inadequately analyzed, resulting in underestimated impacts to floodplain water bodies, wetlands, and baseflow.

- Reductions to downstream sediment transport and coarse sediment supply are underestimated.

- The potential of increased bank erosion due to prolonged reservoir drawdown flows from the Project is not analyzed.

- Impacts to downstream sediment transport processes are underestimated due to flawed modeling assumptions, including but not limited to the Project increasing channel incision in a system already impacted from historic incision.

- The increase in fine sediment supply from increased frequency and magnitude of landslides and hillslope erosion, and thus, downstream impacts of fine sediment to aquatic habitat are underestimated. This is particularly important with regard to increasing salmonid egg mortality.

- The determination of minor impacts on downstream floodplain water bodies and wetlands is inconsistent with the DEIS supporting documents, and does not account for well-established linkages between large flood events and the formation and maintenance of floodplain water bodies and wetlands.

Id.

Linkages between some first-, second-, and third-order **downstream** impacts are made in the impacts analysis presented in the individual Earth, Water, and Wildlife Discipline Reports provided in DEIS appendices, but the analysis, and particularly the conclusions drawn by the DEIS, are inadequate and poorly-supported. For example, despite acknowledging interrelated impacts to peak flows and habitat forming processes, the DEIS analysis of downstream impacts to floodplain water bodies and wetlands incongruously concludes the impacts will be 'minor' (Table 1. Comparison of inconsistent DEIS impact assessments for floodplain off-channel water bodies and associated wetlands; p. 17 Floodplain Wetland report, and DEIS p. 100). Floodplain water bodies and wetlands are created and maintained through dynamic fluvial processes such as avulsions, abandonment of side channels, and oxbow cut offs. The DEIS analysis (DEIS Exhibit 3-2) quantifies between 3,514 and 4,679 acres as no longer flooding under FRE operations (DEIS Appendix N, Table N-13). This means that the fluvial disturbance and habitat generation processes inherent to flooding would also no longer be occurring across these acres of floodplain. Consequently, the floodplain water bodies and wetland areas no longer flooded under FRE operations would over time lose much of their aquatic and riparian fish and wildlife habitat functions. This indirect impact to wetlands, water bodies, and their habitats and species is grossly under-represented in the DEIS. *Id*.

Similarly, flaws in the sediment transport model result in the DEIS under-estimating the impacts to fundamental sediment transport and geomorphic processes associated with operation of the proposed Project. Downstream of the FRE facility, there would be a greater increase in fine sediment and a greater decrease in coarse sediment. These underestimations of impacts to sediment supply and transport cascade throughout the river ecosystem and drive consequent impacts to second- and third-order processes, also under-estimated in the DEIS. Further, the geomorphic impact assessment presented in the DEIS Earth Discipline Report incorrectly limits impacts to the large woody material recruitment, channel formation, sediment transport, and channel migration to areas upstream of the South Fork Chehalis (identifying significant and moderate impacts only in areas of the main-stem Chehalis River upstream of the South Fork Chehalis confluence at river mile (RM) 85). The data and rationale presented in the DEIS do not support this limitation, as explained in the Cascade of FRE Facility Ecosystems Effects Technical Memo. Because there are demonstrated flaws in the hydraulic and geomorphic modeling approaches, all the DEIS conclusions reached using these hydraulic and geomorphic impact assessments are inadequate. *Id*.

Finally, the synchronous alteration expected by the proposed Project to multiple, connected natural processes that sustain aquatic habitat sets up a positive feedback loop in which the overall impact to ecosystems is amplified relative to the alteration of any one process. This amplification

and the consequent indirect impacts are not adequately or appropriately analyzed in the DEIS and its associated discipline reports. **Thus, the DEIS significantly misrepresents the scale, intensity, and complexity of all ecosystem impacts, and thus under-represents the significant and pervasive consequences for fish, fisheries, and impacts to treaty-protected resources.**

2. Flawed Fish Modeling Results in Under-Representation of Impacts to Salmonids.

The DEIS relies upon two computer models to provide quantitative and qualitative projections of effects of the proposed Project on populations of spring Chinook, fall Chinook, coho and steelhead as follows: (1) the Ecosystem Diagnosis and Treatment (EDT) Model and (2) the Integrated EDT-LCM Model (hereafter referred as the Hybrid Model). *See* Technical Report - Salmon Population Modeling.

On behalf of the Nation, two scientists with extensive fish modeling experience[9] reviewed the projections produced by these two models to quantify and characterize effects of the proposed Project and the "no action alternative." The third, the Local Actions Alternative, was not evaluated by the models. Because the DEIS does not provide sufficient, specific information and data to permit thorough scientific evaluation of modeling procedures, the scientists requested additional data and information from the developers of the EDT and Hybrid Models.

Based on their review of the DEIS and additional information, Messers. Lestelle and Morishima conclude that there are substantial uncertainties regarding the models, methods, and parameters employed in DEIS salmon modeling. Further, the modeling procedures were flawed, owing to numerous errors and an apparent mismatch of linking results from a steady-state model to a multi-generational modeling component intended to model year-specific changes in streamflow characteristics. Omissions of other factors, such as consideration of variability in freshwater, estuarine, and marine environments, inter- and intra-species interactions, and lack of consideration for effects on harvest opportunities result in substantial information gaps.

Evaluation of climate change is overly simplistic and the methods employed do not reflect current science. The DEIS does not present a separate evaluation of climate change. Rather, assumptions regarding future conditions are incorporated into analyses of the alternatives considered. DEIS, p. S-3. *See* Technical Report – Impacts on Fish and Fisheries, for discussion about how the consideration of climate change in the DEIS is inadequate and flawed and how the resulting significance of impacts is under-reported.

[9] Larry Lestelle and Gary Morishima have extensive experience developing and reviewing fisheries, environmental, and ecological computer models and are familiar with how EDT and the Hybrid models have been applied in the EIS. Mr. Lestelle is one of the architects of the EDT Model. Both reviewed and refined a third model, a Life Cycle Model, being developed under contract by NOAA, used in the Hybrid Model. *See* Technical Report - Salmon Population Modeling for summary vitaes for each.

Numerous errors were identified in the model inputs used in the life stage projections produced by EDT and questions remain regarding how the stochasticity in streamflow years was actually modeled.

While they agree with the DEIS findings of significant impacts to salmonids under the assumptions prescribed by the DEIS and agree that the exclusion of consideration of benefits from implementation of the Chehalis Basin Aquatic Species Restoration Plan (ASRP) was appropriate, Messers. Lestelle and Morishima conclude impacts of the proposed Project on the affected salmon populations are likely under-reported. Their analysis and findings are thoroughly documented in the Technical Report - Salmon Population Modeling. Due to the likely severity and types of impacts on salmon population viability and structure, Messers. Lestelle and Morishima conclude that **the impacts of the Project cannot be mitigated**. The errors, omissions, and inconsistencies identified in the models and their parameterizations are so substantial that Ecology cannot reasonably rely upon them as the basis for projections of impacts to fish, treaty-protected fisheries, and cultural resources. Therefore, Ecology lacks an adequate and accurate basis on which to evaluate either the scale and intensity of impacts of the proposed Project. In short, the uncertainties surrounding the accuracy of model projections are large and the risks to salmonid species are too great.

3. Analysis of Other Fisheries Impacts is Inadequate.

In presenting findings regarding impacts on salmonids, the DEIS does not adequately evaluate all of the vital characteristics used to assess viability of populations. The DEIS is largely focused on spawner abundance of the populations that would result in the absence of harvest. NOAA Fisheries relies upon the concept of a viable salmonid population ("VSP") to guide assessment and recovery under the ESA, as well as in assessing the relative strength of a salmonid population to maintain its viability under different environmental conditions (McElhany et al. 2000). The VSP framework consists of four characteristics: abundance, intrinsic productivity, population spatial structure, and diversity. Each is vitally important, describing different characteristics needed for a population to maintain viability given environmental variability and the uncertainty posed by various factors that influence salmonid mortality. The VSP framework is a foundational part of the ASRP (ASRP Steering Committee 2019). *See* Technical Report – Impacts on Fish and Fisheries.

The DEIS gives only brief, superficial evaluation to the other aspects of VSP characteristics besides abundance. While the DEIS acknowledges that genetic diversity of the populations produced in the upper Chehalis Basin would be significantly impacted by the proposed Project, it suggests that such losses may not be that important to the aggregate populations of the entire Chehalis Basin:

> The salmon and steelhead in the two subbasins of the Chehalis River evaluated in this report represent only a fraction of the entire Chehalis Basin population (approximately 1.2% of spring-run Chinook salmon, 3.4% of fall-run Chinook salmon, 2.7% of coho salmon and 15.8% of steelhead; Ronne 2019).

DEIS, Appendix E, p. E-141.

Such a characterization implies that abundance should be the major consideration when determining importance, ignoring other characteristics that are seminal to the concept of a VSP. With the exception of steelhead, this statement implies that the losses that would occur as a result of the proposed Project would be very small compared to the overall population sizes (in aggregate) across the Chehalis Basin. However, the significance of component populations within the Chehalis Basin should not be viewed from the standpoint of the proportion of basin-wide abundance, but rather from the perspective of the need to provide the suite of characteristics necessary to support viability and sustainability (see guidelines in McElhaney 2000, p. 126). In large part, this suite of characteristics revolves around the seminal concept of resiliency, the ability to withstand and adapt to stresses. Component populations are extremely important because they represent genetic adaptions to different local environmental conditions, the foundation necessary for resiliency. Their loss would reduce diversity and diminish the ability of these species to sustain themselves in a variable and changing environment. The productivities and diversity of Chehalis salmon populations have already been severely reduced from levels that formerly supported the populations, indicating that resiliency of the populations in aggregate (by species) is weakened, making them more vulnerable to further loss of resiliency from the proposed Project (Mobrand Biometrics 2003; EDT modeling outputs from Chip McConnaha received September 2018). **When considering cumulative effects of other mortality factors not included in the DEIS (such as harvest), it becomes apparent the populations in the upper Basin would be at high risk of extinction with the proposed Project.** *See* Technical Report – Impacts on Fish and Fisheries for more detail.

Additionally, important points were missed in the DEIS, including the following:

- Several Chehalis Basin salmonid populations have been in a state of decline over at least the past two decades, as illustrated in the patterns seen for spring Chinook and winter steelhead. When viewed over the past century, the losses are even more significant (Mobrand Biometrics 2003; EDT modeling outputs from Chip McConnaha received September 2018). The proposed Project would further accelerate the declines.
- Each of the populations produced upstream of Rainbow Falls, with the possible exception of steelhead, currently perform at low levels (reflected in low abundances, productivities, and diversity) due to intensive land use practices in that area over the past century resulting in poor habitat conditions. Habitat restoration projects suited to that area (upstream of Pe Ell) are identified as a high priority within the ASRP. A dam would foreclose the opportunity for recovery and restoration.
- The spatial range of spring Chinook in the Chehalis Basin was once greater than it is now—and it appears to be contracting due to the decline in the population (*see* Technical Report – Impacts on Fish and Fisheries). The proposed Project would accelerate contraction. Loss of spatial structure to the population would further erode population viability.

- The upper Chehalis subbasin (upstream of the proposed dam site) has been a stronghold for steelhead production relative to other parts of the Chehalis Basin, based on findings from intensive spawner surveys over the past six years (Ronne et al. 2018; Ronne et al. 2020). The decline that is occurring in the spawning escapements in the Chehalis River system upstream of Aberdeen suggests that the upper Chehalis subbasin is particularly important to protect for the aggregate population in the Chehalis River system. Effects of the proposed Project as presented in the DEIS to this population segment are substantial, causing significant loss in abundance, productivity, and diversity (pp. E-117, 141, 143 - 144, 146). These losses would be further magnified as losses to the overall aggregate population.
- A viability analysis that considers productivity, abundance (or capacity), diversity, and interannual variability should have be performed to assess the potential impacts of the proposed Project on the viability of the populations produced in the upper basin. The models relied upon to evaluate impacts on salmonids in the DEIS are not suitable for such analyses; special types of models are used to perform viability analyses.

Id.

The DEIS also did not adequately address a large number of identified uncertainties t (*see* pp. E2-33 through 35). An example of one of those uncertainties that needed much greater attention is fish passage that would be required at the FRE facility. The DEIS acknowledges uncertainty with both upstream and downstream fish passage design, but then relies on a number of unsubstantiated assumptions. *Id*., and *see* Fish Species and Habitats Comment Matrix, comments 9-15).

A key supporting document for the fish passage analysis (CBS 2018) states with regard to the construction period: "Due to the extended period of diversion and the impact to salmon populations, for the following fish passage alternatives during construction, **it is assumed that the full fish passage criteria required by NMFS and WDFW must be met for the entire period of construction**." (emphasis added). DEIS Appendix E states: "The Applicant's fish passage design for the FRE facility must meet state and federal regulations and optimize fish passage **during construction and during operation**, including non-flood conditions and during flood retention events. NOAA Fisheries requires fish passage to be provided between the 95% and 5% exceedance flow values, or in other words the middle 90% of the streamflow of record when migrating fish are normally present at a site (NMFS 2011). The Revised Code of Washington (RCW) 77.57.030 requires provision for passage of all fish and fish life stages believed to be present in the system." (emphasis added). DEIS, App. E, p. E-76

The fish passage assumptions applied in the DEIS analysis are based on the preliminary designs applied in the PEIS, which were intended for the FRO structure as it was then envisioned. **Although the FRE design differs from the FRO, the actual design of the fish passage has not been revised for the FRE. The DEIS assumes that fish passage effectiveness for the FRE facility remains the same as was assumed for the FRO.** *Id*.; s*ee also*, Fish Species and Habitats Comment Matrix, comments 10-14, 26, 27. The configuration of the FRE and fish passage facilities will likely result in fish mortality that has not been considered or analyzed. *Id*. at comments 8-14; Water Comment Matrix, comments 15, 22, 31-33.

A major difference between the fish passage analysis for the PEIS and the FRE is that a construction period, requiring temporary fish passage facilities, was not evaluated under the PEIS. This introduces a major uncertainty into the DEIS that was not adequately addressed. It is critical to recognize that fish passage criteria for temporary facilities (i.e., during construction) are intended to be the same as during implementation following construction. NMFS (2011) states in its document entitled "Anadromous Salmonid Passage Facility Design" the following:

> Criteria listed previously in this document also apply to the interim passage plan. Where this is not possible, project owners must seek NMFS approval of alternate interim fish passage design criteria, and a final interim passage plan.

The DEIS states with regard to fish passage during the construction period: "The temporary bypass tunnel and temporary trap-and-transport process would be required to meet National Marine Fisheries Service and WDFW criteria for fish passage. The fish passage information provided by the Applicant is preliminary and has not been approved; more details would be required during permitting."

The annual duration of the in-water construction window period is uncertain and also of concern. The DEIS states that:

> Work in the river channel would take place over three separate in-water work windows, which are the time periods approved by regulatory agencies that avoid fish migration periods. The Washington Department of Fish and Wildlife (WDFW) approved in-water work window for the upper Chehalis River includes the month of August and the Corps window is from July to August. To meet the 5-year schedule, the Applicant stated they would request extensions to these work windows to September 30.

DEIS, p. 13.

If the requested extension of the annual construction period is granted, in-water construction would occur when spring Chinook are holding prior to spawning, adult fall Chinook and coho are actively migrating, and juvenile coho and steelhead are rearing and moving to suitable habitats. High temperatures and low flows that occur during this construction period would heighten physiological stress and susceptibility to disease, increasing mortality and reducing fitness of these cold-water species. If the requested extension is not approved, construction activity would take longer to complete, impacting more years of salmon passage and production. *See* Technical Report – Impacts on Fish and Fisheries.

While passage requirements during the construction period should be just as rigorous as in post-construction, we are concerned that the criteria would be relaxed during the 5-year construction period when a river by-pass tunnel and trap and haul activities would be employed. The DEIS concluded that the proposed Project would be unlikely to achieve the same criteria during construction (Appendix E3 p.E-10-11). The DEIS assumed that **fish passage effectiveness would be substantially lower during construction** than during post-construction for all species but particularly for coho and steelhead (*see* Tables E3-4 and E3-5 p. E3-12 and p. E3-14 below). Cumulative upstream passage effectiveness during construction ranges between

0.09 and 0.65, depending on species. Passage values this low have very significant adverse effects on salmonid populations. *Id*.

Table E3-4
Estimated Passage Effectiveness for Adult Salmonids Upstream and Steelhead Kelts Downstream During FRE Facility Construction (2025 to 2030)

SPECIES/RUN	TRAPPING EFFICIENCY[1]	HANDLING AND TRANSPORT TRUCK LOADING SURVIVAL	TRANSPORT, RELEASE, AND DELAYED MORTALITY	CUMULATIVE FISH PASSAGE EFFECTIVENESS (SURVIVAL)[1]
Spring-run Chinook Salmon	0.85	0.90	0.80	0.61
Fall-run Chinook Salmon	0.80	0.95	0.85	0.65
Coho Salmon	0.35	0.95	0.95	0.32
Steelhead	0.50	0.95	0.95	0.45
Steelhead (kelts)	0.60	0.90	0.90	0.49
Cutthroat	0.10	0.95	0.95	0.09

Notes:
Cumulative fish passage effectiveness is the product of trapping efficiency, handling and transport survival, and release and delayed mortality.
1. Includes effects of fish moving downstream from weir.

Table E3-5
Estimated Adult Salmonid Upstream Passage Effectiveness During FRE Facility Operations at Mid-Century (2030 to 2080)

SPECIES/RUN	NON-FLOOD RETENTION	FLOOD RETENTION
Spring-run Chinook Salmon	94%	91%
Fall-run Chinook Salmon	94%	91%
Coho Salmon	94%	91%
Steelhead	96%	91%

Source: Tables 11-4 and 11-5 (CBS 2017a).

Based on the documentation provided in Appendix E3 (pp. E-10-11) of the process used to develop the fish passage assumptions that were applied in the DEIS analysis, the estimates for effectiveness of fish passage provisions appear to be simply educated guesses unsupported by rigorous analysis. The upstream passage facility would consist of a picket weir in conjunction with a temporary trap and haul facility. Picket weirs for collecting upstream adult salmon and steelhead are extremely difficult to maintain and operate during elevated flows in Western Washington rivers—they frequently fail. It is evident that high uncertainty exists in fish passage analysis, which was not included in the DEIS's analysis of impacts. *Id*.

It is very likely that post-construction passage effectiveness will be highly uncertain and vary by year as the dam operator and support teams learn to operate the facilities to meet the passage requirements. The DEIS ignores the challenges of evaluation, monitoring, and accurately reporting the effectiveness of fish passage to meet these requirements. Id.

Additionally, the DEIS analysis of impacts to other fish species, like lamprey and resident trout, is inadequate and largely broad brushed. *Id*. at comments 25, 29, 38, 61-63. The DEIS acknowledges, but fails to adequately address, water quality impacts (e.g., elevated temperatures and suspended sediment) that will negatively affect fish. *See* Water Comment Matrix, comments 15, 20, 37, 39-45, 47-49; Environmental Health & Safety Comment Matrix, comment 3.

In summary, the errors and omissions of the DEIS relating to impacts on fish include: the failure to acknowledge and/or analyze the full suite of impacts on salmonid populations; the failure to acknowledge or analyze the risks associated with uncertainties of environmental and biological effects during FRE construction activities (including mortalities of fish passage and trap and haul operations) and subsequent operation of the FRE facility; and the failure to consider the cascade of ecosystem impacts on environmental processes of the whole River system. Ecology cannot ignore these deficiencies and blindly sanction significant adverse impacts to treaty fish resources that were not sufficiently disclosed to public scrutiny. The potential to mitigate for these adverse effects cannot be left to future permitting and consultation processes. **The biological damage to salmon populations, and particularly for spring Chinook, cannot be fully mitigated.**

Based on the above, the Quinault Nation urges that the State of Washington, as a co-manager and public steward of the environment and its natural resources, to use its substantive SEPA authority to deny the Project and pursue less risky alternatives to accomplish the twin goals of the Chehalis Basin Strategy of reducing flood damage and restoring aquatic species habitat throughout the Basin.

4. Quarry Development Impacts Are Not Included or Analyzed.

Three quarries are proposed to provide the rock necessary for use in the concrete mixture for construction of the FRE facility. DEIS, p. 13. The DEIS indicates this would necessitate upgrading roads to the quarries, identifying material storage and processing sites, and constructing areas for offices and equipment storage. *Id*. Aerial photo review did not reveal any existing quarry activity in two of the three proposed quarry sites (North and South Quarries), and there are no registered quarries at these locations within the WDNR surface mine database. *See* Earth Discipline Report - Geology Technical Analyses Review, Earth Comment Matrix, comment 15. Development of these quarries will have known, foreseeable, direct impacts. The DEIS acknowledges that "up to 41 acres of habitat associated with the quarry roads could be disturbed or eliminated." DEIS, p. 89. However, neither proposed plans nor detailed descriptions for development of the three proposed quarries—or the associated impacts—are presented or analyzed in the DEIS or supporting documents. Similarly, the DEIS fails to analyze impacts from the concrete production facility that would also be located near the FRE facility and would include both roller-compacted and conventional concrete production. The site would include a roller-compacted concrete batch plant, conventional concrete batch plant, rock crushing and screening, rock storage, fly ash storage, and cement storage. DEIS, p. 13. Impacts from these activities are given short shrift in the DEIS, if they are addressed at all; mere mentions of minor impacts are found at pp. 115, 142, 180.

In particular, though the proposed quarry locations occur in areas of known or suspected slope instability and slope stability analysis, these impacts are not discussed in the DEIS. Nor is the fact that quarry locations are located adjacent to Type-S Waters and may be within the State of Washington Shoreline Jurisdiction (200 feet from designated waters), requiring best available science to consider impacts and mitigation. Impacts to wildlife from quarry development are discussed below in Section 6. *Id*., Earth Comment Matrix, comments 23 and 52. These are significant failures under SEPA.

5. Hazards and Dam Safety Risks Are Mischaracterized.

The importance of a rigorous evaluation of landslide potential cannot be understated, as this geologic process affects the performance, longevity, and public safety related to the FRE, in addition to having significant environmental impacts. The FRE itself will directly affect the frequency, extent, and potentially the magnitude, of landslides, thereby increasing the risk to the public and ecological systems. The Earth Discipline Report - Geology Technical Analyses Review, reveals several shortcomings in the DEIS that result in a significant under-representation of risk and safety hazards:

- The DEIS omits many significant landslides and other mass wasting processes that could affect the FRE dam design, FRE operations, ecological impacts, and impacts to public safety, thereby such impacts were under-estimated.

- Conclusions from the slope stability analysis are used throughout the project design and DEIS impact analyses; errors and uncertainties from this analysis would have relevant impacts that greatly under-estimate significance of impacts in the DEIS and the errors would be propagated in the public safety impact analyses.

- The proposed drawdown rate of 10 feet per day greatly exceeds the hydraulic conductivity reported for the soils and slope instability and widespread landslides would be expected during reservoir draw down. In addition, the modeling utilized overly conservative parameters or incorrect parameters to evaluate slope stability, even when these values contradicted actual field observations. There is well established science relating reservoir water level operations to land sliding, none of which is referenced. The proposed operation conflicts with international guidelines to limit drawdown rates not to exceed hillslope hydraulic conductivity.

- The potential for multiple-event reservoir inundations and longer impounded periods was not considered, nor were uncertainties and risks identified.

- There is evidence that a landslide may have dammed the Upper Chehalis River within the proposed reservoir site during the 2007 flood – causing a flood wave containing a viscous mixture of water and landslide debris (sediment, boulders, trees) to propagate downstream (*see* Figure 6, Earth Discipline Report - Geology Technical Analyses

Review). However, the potential risk of this occurring again and the subsequent impacts to the proposed dam structure have not been evaluated by any of the baseline studies supporting the DEIS. No analysis was conducted to describe the likelihood of a potential landslide dam occurring and its associated impacts to the river or the proposed FRE facility. Furthermore, there is no mention of how the proposed dam will address these potential impacts to its infrastructure and operations in the Combined Dam and Fish passage Supplemental Design report dated September 2018 (Anchor QEA 2018).

- Landslides can deliver debris and mass into a filled reservoir that is capable of generating large displacement or impulse waves. Displacement wave analysis is required under federal design guidance manuals. Displacement waves can overtop the dam and create life-threatening conditions downstream of the dam, as well as potentially damaging dam infrastructure and affecting foundation stability such that a catastrophic dam failure is possible. Displacement waves were not identified nor discussed in the DEIS.

- Evidence shows that dams fail most often from overtopping, and that the consequences and costs of this are immense. Yet this potential impact is not analyzed in the DEIS.

- Washington State and federal dam design and planning standards set a high bar because the potential risk from dams is very high. However, these standards do not appear to have been followed for the design, planning or assessment of the FRE facility.

See also, Environmental Health & Safety Comment Matrix, comments 2, 6-9; Public Services & Utilities Comment Matrix, comments 1-5.

6. Wildlife Impacts Are Not Fully Analyzed.

The DEIS fails to adequately analyze impacts to wildlife, particularly those protected under the federal ESA, Bald and Golden Eagle Protection Act, and Migratory Bird Treaty Act. Marbled Murrelets are a federally- and state-listed threatened species. The proposed action is not consistent with the federal Marbled Murrelet Recovery Plan, which states that suitable habitat should be preserved in large, contiguous blocks to minimize nest predation. *See* Wildlife Species and Habitat Comment Matrix, comment 1. The construction of the FRE will have impacts to nesting marbled murrelets that were not analyzed because the DEIS underestimates the nesting season. *Id*. at comments 29-31, 36. The DEIS fails to address or analyze impacts from the development of the quarries that will include blasting and road development. The noise and direct injury will negatively affect many bird species in violation of state and federal law. *Id*. at comments 5, 9, 26, 29, 33-35, 37; Noise & Vibration Comment Matrix, comment 2. The DEIS provides both inaccurate and inconsistent information pertaining to the bald eagle nesting season, and as a result, underestimates impacts to bald eagles. *See* Wildlife Species and Habitat Comment Matrix, comment 28; and comments 24-25. Furthermore, impacts to potential golden eagle habitat are not considered. *Id*. at comment 17. The DEIS fails to recognize the significance of and risk to the local Columbia Torrent Salamander population, a species found within the reservoir footprint and on the Federal Register's list of substantial findings for which an ESA

status review is being initiated. The DEIS fails to acknowledge the number of individual Columbia Torrent Salamanders that would be killed as a direct result of the inundation. *Id*. at comments 2-5, 10. *See also*, Noise and Vibration Comment Matrix.

7. DEIS Fails to Meaningfully Analyze Impacts/Benefits of Local Actions Alternative.

Importantly and disappointingly, besides not fully considering reasonable alternatives, the DEIS also utterly fails to reasonably analyze the flood damage reduction benefits of the Local Actions Alternative, stating:

> The Local Actions Alternative represents a local and non-structural approach to reduce flood damage in the study area. It considers a variety of local-scale options that local governments and agencies could choose to do in the future. These actions could potentially achieve the Applicant's objective through improving floodplain function, land use management actions, buying out or relocating at-risk properties or structures, improving flood emergency response, and increasing water storage from Pe Ell to Centralia. The Local Action Alternative does not identify specific projects because those decisions would be made by local governments. Therefore, the EIS does not analyze the feasibility or economic practicability of these potential actions.

The DEIS concludes, without basis, that, "In the long term, the Local Actions Alternative would not greatly reduce flooding in the basin but would reduce flood damage. Surface and groundwater throughout the study area would continue to experience substantial flood risk during both major and catastrophic floods." DEIS, p. 54. This is contradicted by statements that the Local Actions Alternative could be effective:

> The Local Actions Alternative represents a local and non-structural approach to reduce flood damage in the Chehalis-Centralia area (the Proposed Project's purpose). The Local Actions Alternative considers a variety of local-scale options that local governments and agencies could choose to do in the future. These actions could achieve the Applicant's objective to reduce flooding from storms in the Willapa Hills through improving floodplain function, land use management actions, buying out or relocating at-risk properties or structures, improving flood emergency response actions, and increasing water storage from Pe Ell to Centralia.

DEIS, p. 24. This is in addition to similarly contradicting statements in Appendix G pertaining to Land Use. The DEIS admits that, "A floodproofing plan could be developed to protect structures, such as the same structures that would no longer be inundated under the Proposed Action. . . ." DEIS, Appendix G, p. G-57. It also concludes, without basis, that, "Residences and buildings would continue to experience substantial flood risk under the Local Actions Alternative." *Id*. at G-58

The DEIS makes no substantive attempt to determine scale and intensity of impacts or benefits of the Local Actions Alternative. Nor does the DEIS quantify the area or structures that could be protected from flooding by local actions such as raising the freeboard height requirements. DEIS, pp. 120-121. This is in stark contrast to the use of modeling to identify impacts on 4,374 buildings under the No Action Alternative. *Id*.

The DEIS includes analysis of only hardened approaches to floodplain storage and channel migration. If, as stated, 75% of the residential structures and 25% of the commercial, industrial, and other non-residential structures in the Chehalis River floodplain could be protected through elevation, other floodproofing measures, and buy-outs, this would seem a significant benefit that would meet the stated project purpose and objectives. *Id*. However, the DEIS fails to provide any substantive explanation of why it determined floodproofing, buy-outs, and relocations would have 'significant to minor' impacts. DEIS, p. 121.

As discussed in the section above, the DEIS neither takes the requisite "hard look" nor provides a reasonably thorough discussion of environmental impacts throughout its many pages. The DEIS does not properly afford decision makers adequate opportunity to make a politically accountable decision based on detailed consideration of all affected environmental values. The DEIS fails to comply with the basic requirements of SEPA to provide full disclosure and detailed consideration of all affected environmental values. **This is a fundamental failure rendering the DEIS inadequate under state law and unable to withstand judicial review.**

C. Geographic Scope Is Unreasonably Limited.

SEPA requires consideration of impacts throughout a reasonable affected geographic range. The study area of the DEIS is limited to the mainstem of the Chehalis River to river mile 9, the area of maximum inundation for the FRE, the area associated with the Airport Levee Changes, and 1,500 feet upstream into three tributaries of the Chehalis River including the Skookumchuck River, the South Fork Newaukum River, and the South Fork Chehalis River. DEIS, pp. 33-34. There is no rationale provided for this extremely narrow focus, which has the effect of limiting and minimizing the full range of impacts that should be considered in the DEIS. Consistent with the Strategy, which should be guiding the DEIS, the geographic area should be consistent with the entire Basin.

The geographic study area unreasonably excludes all surface waters downstream of river mile 9 at Montesano that support habitat for aquatic species that will be affected by the Project. This geographic scope is too limited to account for the extent, range and intensity (spatial and temporal) of impacts reasonably anticipated from the Project, including the direct, indirect and cumulative impacts that extend beyond the boundaries of the study area but influence environmental conditions in the study area. Limiting the considerations in this manner fails to account for watershed processes that will be negatively affected by the Project. *See* Cascade of FRE Facility Ecosystems Effects Technical Memo and Technical Report – Impacts on Fish and Fisheries.

The DEIS also fails to relate and analyze these impacts to downstream ESA-listed species, such as Southern Resident Killer Whales ("SRKW"), anticipated to be adversely affected by lower salmon runs resulting from the Project. *See* Fish Species and Habitats Comment Matrix, comments 44, 45, 101. Though the DEIS acknowledges the importance of Chinook in the recovery of SRKW, it neglects to analyze the role that the dam will be playing in undermining recovery efforts through elimination of Chehalis basin spring Chinook, a key food source for the SRKW. *Id*.

The Nation submitted comments in its PEIS comment letter indicating the dire state of abundance and stability of the spring Chinook population in the Chehalis Basin as contrary to the characterizations being made about the status of the population. Further, the Nation highlighted the likelihood of a petition to list spring Chinook as threatened or endangered under the ESA, given the species' precarious position. *See* Quinault Nation PEIS Comment Letter, pp. 15-16 and Attachment 2. Similarly, the Washington State Department of Fish and Wildlife is on record with its position that a "major dam on the Chehalis River would exacerbate negative effects for fish, wildlife, and habitat in the basin." *See* Letter from Director Kelly Susewind to Chehalis Basin Board dated June 6, 2019, attached as Exhibit D. Director Susewind further noted that spring Chinook in the Chehalis Basin are likely to be listed under the ESA. *See* additional elaboration on the likelihood of an ESA petition being filed for spring Chinook in the Technical Report – Impacts on Fish and Fisheries, *and* s*ee* Fish Species and Habitat Comment Matrix, comment 128.

As indicated in the Nation's scoping comments, analysis should have more thoroughly addressed impacts to the SRKW, listed as Endangered under the ESA, particularly given the likelihood that the dam will eliminate spring Chinook in the Chehalis Basin causing harm to the SRKW by further reducing food for these already starving whales in violation of the ESA.

Additionally, salmon (Chinook and coho) originating in the Chehalis Basin are harvested by commercial, recreational, and subsistence fisheries throughout the Chehalis Basin and the Grays Harbor estuary. These species are also harvested over an extensive marine geographic area beyond the Basin's boundaries. For example, Chehalis Basin fall Chinook are primarily north-migrating and are harvested at various stages of maturity over an area that ranges from the Washington Coast to Southeast Alaska. Similarly, the geographic harvest region for Chehalis Basin coho extends from Southern Oregon through mid-British Columbia. SEPA requirements are not met as a result of this limitation. *See* Fish Species and Habitat Comment Matrix, comment 47, Technical Report – Impacts on Fish and Fisheries, and Economics & Socioeconomic Analysis Review, major finding 11.

D. Cumulative and Indirect Impacts Were Not Fully Considered As Required by SEPA.

SEPA requires that an EIS must fully evaluate all of the direct, indirect, and cumulative impacts of projects. WAC 197-11-792(c). Implicit in SEPA is the requirement that the decision makers consider more than what might be the narrow, limited environmental impact of the immediate, pending action. "The agency cannot close its eyes to the ultimate probable

environmental consequences of its current action." *Cheney v. City of Mountlake Terrace*, 87 Wash. 2d 338, 344, 552 P.2d 184, 188 (1976). The DEIS fails in this regard.

1. DEIS Ignores Key Cumulative and Indirect Impacts.

Many cumulative impacts and indirect impacts were not included or analyzed in the DEIS. Most conspicuous is the absence of any analysis of the reasonably foreseeable expansion of the FRE to the FRE-FC. The proposed Project would add $60 million to $100 million to the price tag of the dam in order to build "a foundation and hydraulic structures capable of supporting future construction of a larger dam with up to 130,000 acre feet of storage"—the FRE-FC. App. 1, Att. A-2, pp. ES-1, 6. The dam designer, HDR, went to the extent of providing design configurations, construction details and cost opinions for the FRE-FC, evident throughout the Report at App.1, Att. A-2. Because a larger foundation would be built for a potential future expansion, it seems logical that a future expansion would also be likely. This likelihood is evidenced by the DEIS's statements about "uncertainty" driving the need for flexibility for the expanded dam being tied to climate predictions: "The FRE-FC is configured to provide additional storage that can be used in some combination of increased flood protection that reflects hydrologic changes (e.g., effects of global warming), or as a permanent storage pool for augmentation of downstream river flows for fish and aquatic habitat enhancement." *Id*. at 5; *and see Id*. at 42. In fact, the data used to develop the FRE and FRE-FC designs indicate that by 2060-2080 the FRE will likely be overwhelmed by the late century flows. *See* analysis in Section V.A.2. above. The building of an expanded dam is a likely indirect consequence of the building of an expandable dam, and therefore, reasonably foreseeable. Accordingly, the impacts of the FRE-FC expanded dam should have been analyzed as an indirect and cumulative impact.

Additionally, we note many other indirect and cumulative impacts that should have been analyzed in the DEIS as follows.

The likely ESA petition for listing spring Chinook, which, if accepted, would fundamentally alter the Project analysis, was not meaningfully considered. *See* Section V.C. above.

Although the DEIS acknowledges that potential cumulative impacts might occur from "future expansion of agriculture, rural, residential, and commercial development in the floodplain," little or no attention is given to assessing what these impacts might be. DEIS, Appendix 2, p. 2-26. Particularly given climate change projections, any such expansion would put more people and assets at risk, increasing the risk of future flood damage. To be consistent with Project goals, new development should not occur in flood-prone areas (including the area that would be impacted by a catastrophic dam failure with a full reservoir pool). Similarly, the DEIS recognizes that some benefits might accrue due to restoration actions in the Basin, but how these might combine with expected impacts of the proposed Project is left unanswered and open to considerable conjecture. *See* Technical Report – Impacts on Fish and Fisheries.

Five major sources of cumulative impacts to salmonids are completely ignored or are only superficially incorporated into the DEIS. Each of these sources would likely compound adverse

effects so that overall population performance would be severely reduced in conjunction with the proposed Project. These sources are:

1. Variability in freshwater survival unrelated to effects of the proposed Project
2. Variability in estuarine and marine survival and effects of climate change on marine survival
3. Harvest impacts
4. Effects of increased abundances of exotic fishes within the mainstem Chehalis River corridor
5. Hatchery fish impacts

See Technical Report – Impacts on Fish and Fisheries, for discussion of the importance of these cumulative effects as they relate to salmonids.

There is no analysis provided regarding impacts to resident trout species such as rainbow and cutthroat trout. *See* Fish Species and Habitats Comment Matrix, comment 25.

The DEIS proposes an in-water work window that exceeds current regulations and that will harm spawning spring Chinook salmon, and could harm incubating steelhead eggs. *Id*. at comments 83, 86. It assumes conditions for a Hydraulic Project Approval that are likely unrealistic. *Id*. at comment 68.

The DEIS admits indirect land use impacts associated with the Project:

> Indirect land use impacts could include the potential for increased development in areas predicted to experience no flooding or less severe flooding as a result of the Proposed Action. DEIS Appendix G, p. G-49.
>
> In the future, there is a possibility that the full extent of the buildable area could be utilized if it were removed from the threat of a catastrophic flood. *Id*.
>
> The FRE facility is likely to alter the FEMA 100-year floodplain. If the floodplain is altered, a Letter of Map Revision, Conditional Letter of Map Revision, or Physical Map Revision may be required by Lewis County and FEMA. *Id*. at p. G-35
>
> Where land use regulations relating to floodplain management have been relaxed due to removal from the SFHA, there could be a perception that areas that were formerly in the SFHA are entirely safe from flooding. Floods larger than the modeled late-century catastrophic flood, like the 2007 flood, may still inundate portions of these areas. *Id*. at p. G-50.

However, the DEIS fails to adequately analyze these indirect effects of induced future development in the floodplain and their associated human risks and impacts to fisheries and

aquatic species habitats. *See* Land Use Comment Matrix, comments 6, 7, 17-20; Water Comment Matrix, comment 14.

The DEIS fails to analyze impacts to future salmonid harvest—either pursuant to the Nation's treaty-reserved rights or non-Indian commercial and recreational harvest —including harvest impacts throughout the Pacific Rim. *See* Economics & Socioeconomic Analysis Review, major findings 11 & 14; Technical Report – Impacts on Fish and Fisheries.

The DEIS fails to analyze indirect impacts from logging the reservoir area and associated repeated loss of regenerating riparian areas that will affect aquatic habitat such as channel complexity and channel forming processes. Similarly, the DEIS fails to assess impacts to industrial forest lands and infrastructure upslope of the reservoir area due to the fluctuation of the water levels in the reservoir, which increases landslide potential upslope of the maximum pool elevation of the reservoir. This will directly affect value of the land for future timber harvest, as well as threatening forest roads. *See* Forest Practices Technical Analyses Review, Land Use Comment Matrix, comments 2, 13, 25, 26, Earth Comment Matrix, comment 43.

Overall, the DEIS fails to consider or analyze the physical and ecologic process linkages inherent in riverine ecosystems, and thus, fails to consider the consequent indirect impacts of the cascade of ecosystem effects and the amplification of those effects over time that will result from the proposed project. *See* Section V.A.1. above, and Cascade of FRE Facility Ecosystems Effects Technical Memo. The proposed Project will result in a cascade of impacts to both existing floodplain/off-channel water bodies and wetlands, as well as a loss of the physical processes that create and sustain the future formation of floodplain wetlands and floodplain/off-channel water bodies, resulting in a significant, unmitigable amplification of impacts over time. *Id*.

Additionally, because mitigation for the many significant impacts has not been developed, neither the reasonableness nor resulting effects of that mitigation have been analyzed.

SEPA requires consideration and analysis of direct, indirect, and cumulative impacts. WAC 197-11-792. This necessarily includes discussion of how future projects, together with the proposed Project, will affect the environment in order to provide complete disclosure of environmental consequences to allow informed decision making. There are many such impacts, all of which are reasonably foreseeable, and accordingly, should have been discussed in the DEIS.

2. DEIS Assumes Project Permit/Approval Issuance Without Consideration of Applicable Legal Requirements.

As acknowledged in the DEIS, many permits and approvals would be required for this proposed Project. DEIS, pp. 35-38. The DEIS gives no consideration to the complexities of the legal requirements and limitations for obtaining such permits and approvals. In some cases, current legal requirements would not likely support issuance. For example, there are myriad requirements to log the reservoir area that have not been considered or analyzed. *See* Forest

Practices Technical Analyses Review; Land Use Comment Matrix, comment 21. Because the DEIS fails to acknowledge the Quinault Nation as a co-manager with the State of Washington in regulating off-Reservation fisheries within its usual and accustomed areas including the entirety of the Chehalis Basin, the DEIS fails to consider the need for Quinault Nation consent for forest practices decisions as a participant in the Timber Fish and Wildlife process. *Id*. There are zoning and other land use requirements and limitations not considered in the DEIS relating to shorelines (like the requirement to mitigate for net losses to shoreline ecological functions), road building, and the need for a conversion from forest practices to a dam. *See* Land Use Comment Matrix, comments 8, 10-13, 21, 28; Forest Practices Technical Analyses Review. Because quarry development was not considered or analyzed, permit requirements, including the potential for shoreline-related requirements, were not addressed. *See* Earth Comment Matrix, comments 15 and 23. The DEIS fails to address how a water right might be issued in light of the Basin being over-appropriated. *See* Water Comment Matrix, comment 18.

Similarly, the Project is proposed to occur on land owned by two private entities. The DEIS assumes both entities will voluntarily sell their lands so provides no discussion of the timing and costs of potential eminent domain actions if that assumption is false. Such a bare assumption is unwarranted without more discussion.

The DEIS's failure to disclose and consider all legally-required permits and permitting requirements for actions and impacts caused by or related to the FRE violates SEPA.

E. Mitigation is Not Described or Analyzed as Required by SEPA.

As set forth above, SEPA requires that mitigation for environmental effects identified in the DEIS also be identified and discussed in enough detail that a decision maker can understand and assess whether and to what extent significant impacts can be avoided or mitigated. If impacts cannot be avoided or mitigated, SEPA provides that a decision maker may deny, and probably should deny, permits for the project. Further NEPA case law is instructive. While detailed and definite mitigation plans need not be completed for environmental review, the descriptions and discussion of mitigation must not be a mere list, must not be perfunctory, and must be definite enough that the reasonableness and success of the mitigation measure can be judged and with some assurance that the intended mitigation will occur if the measure is implemented. There is no actual mitigation measure discussion or analysis in this DEIS. Where mitigation is briefly mentioned, it meets none of the requirements of statute, regulation, or case law.

While mitigation is mentioned for many of the significant adverse impacts identified in the DEIS, the DEIS approaches the mitigation for all impacts in the same nonspecific and inadequate manner. That consistent approach is first described in the summary of the DEIS:

> There is uncertainty if the proposed mitigation is technically feasible or economically practicable…[t]he applicant ***may*** provide mitigation plans. ***If*** the agencies determine the plans meet regulatory requirements and the implementation

> is feasible, then the [significant adverse] impacts would be addressed as part of the permitting process.

DEIS, p. S-17 (emphasis added). This is not mitigation. It is not a mitigation plan. It is not a mitigation proposal. It is not a discussion of any actual mitigation linked to the mechanisms of impacts from the proposed Project, or the likelihood of their success. Rather, this is merely the possibility of a mitigation discussion and maybe plans at some indefinite point post-DEIS that may address some impacts.

This same non-discussion of mitigation occurs throughout Chapter 5, the mitigation chapter, with the same language used for every identified significant adverse impact with the possible exception of ground-shaking hazards. For example, as to water quality adverse impacts, the DEIS states:

> [M]itigation proposed…to develop and implement a Surface Water Quality Mitigation Plan to address these impacts; ***however there is uncertainty if the mitigation plan is technically feasible and economically practicable***. The Proposed Project would have significant and unavoidable adverse environmental impacts on surface water quality, unless the Applicant develops a Surface Water Quality Mitigation Plan that meets regulatory requirements for which implementation is feasible.

DEIS at pp. 43 and 47 (emphasis added). This paragraph says nothing and is circular in nature. It says that mitigation may be proposed at some later date that such mitigation may or may not adequately address water quality impacts, and that it may or may not be allowed or may or may not be feasible. **This does not just fall short of the legal requirements for mitigation, it is a complete failure to discuss and analyze mitigation as required by SEPA.** It is simply a paragraph that has the word mitigation in it. And this paragraph, either verbatim or with very similar language, occurs throughout Chapter 5 of the DEIS, whether it concerns significant adverse impacts to water quality, or fish and habitat, or fish passage and movement, or movement of woody debris and riverbed materials, and regardless of whether it is discussing impacts from construction or from operation. *See also e.g.,* DEIS at pp. 53, 73, or 76-77. Mitigation measures must be reasonable and capable of being accomplished. **The mere fact that the DEIS concedes that the completely speculative mitigation may neither be technically feasible or economically practicable provides ample support for Ecology to deny the permits for the proposed Project using its substantive SEPA authority.**

In order to provide information sufficient for a governmental decision regarding whether to allow a project that will have significant adverse environmental impacts, mitigation must be identified and discussed. The DEIS wholly fails to identify or discuss mitigation at all much less mitigation that is "reasonable and capable of being accomplished." RCW 43.21C.060. The DEIS does not disclose or discuss mitigation measures. WAC 197-11-440(4). The DEIS does not discuss reasonable mitigation measures that would mitigate significant adverse impacts that are identified. WAC 197-11-440(6)(a). The DEIS does not clearly indicate those mitigation

measures, if any, that could be implemented or might be required, as well as those, if any, that agencies or applicants are committed to implement. WAC 197-11-440(6)(c)(iii). The DEIS does not indicate what the intended environmental benefits of mitigation measures are for significant adverse impacts, does not discuss their technical feasibility and economic practicability, and makes no mention of whether there is concern about whether a mitigation measure is capable of being accomplished, because of course, there are no actual mitigation measures identified to assess whether they can be accomplished. The DEIS discloses only the possibility of some mitigation proposal, someday, post-EIS.

The DEIS's statements on mitigation are even less thorough than the mitigation disclosure and discussion that has been *rejected* by federal courts under NEPA in the cases cited above. Those courts have stated that mitigation cannot be a "mere list" or perfunctory discussion. In this case, the DEIS does not even contain a list of mitigation measures—just mitigation "topics" (e.g. there may be a mitigation plan for dissolved oxygen, or for habitat restoration, or for woody debris). There is not even a perfunctory discussion of mitigation. Rather, there is no discussion.

Many other EISs prepared in the relatively recent past, for projects as significant as the dam, have included analysis of mitigation options. A survey of EISs for five significant Washington projects in the last five years (Tesoro Savage in Vancouver, Millennium Bulk Terminal in Longview, Tesoro Refinery in Anacortes, Westway Crude by Rail in Grays Harbor, Port of Kalama Methanol, and Tacoma LNG Plant) demonstrates EISs for all five projects included mitigation for environmental impacts. Attached as Exhibit E.

The DEIS wholly fails to meet the most basic, minimal requirements of SEPA for including disclosure and discussion of meaningful mitigation measures that are capable of implementation for the many significant adverse environmental effects from the dam, from both construction and operation. This is a substantial failure, and as a result, decision makers are not properly informed as to the true severity and consequence of impacts in the absence of clarity around what mitigation is feasible and what is not.

F. The DEIS Improperly Fails to Analyze Treaty Right and Cultural Impacts.

The intent of SEPA is to identify potential environmental harm, including potential harm to salmon, steelhead, shellfish, and other treaty-protected resources. Yet, despite the implementation of SEPA for nearly 50 years, the populations of salmon, steelhead and other species upon which the Nation depends have declined. Development and other activities over the last century continue to negatively affect fisheries habitats and cause ever-decreasing populations of the various species that Quinault members harvest. As the DEIS highlights, salmon populations are seriously reduced within the Chehalis Basin, and this decline did not result from any single action, but the accumulation of many actions over a long time period. The DEIS admits "significant and unavoidable impacts" for all aquatic habitat, all salmonids, all non-salmon native fish, including lamprey, freshwater mussels, and macroinvertebrates. DEIS, p. S-15. However, the technical review of the DEIS provided in this letter and all attachments demonstrates the consequences to the Nation's treaty fishing rights have been grossly

underestimated and, as set forth above. The magnitude of economic damages from fisheries disruptions could be substantial. *See* Economics & Socioeconomic Analysis Review, major finding 14.

Ecology had more than adequate opportunity between the time it received the Nation's scoping comments (November 14, 2016) and its publication of the DEIS for public comment (February 27, 2020) to engage in government-to-government consultation in order to ascertain and address impacts to the Nation's rights. Ecology previously consulted with the Nation for the Westway Crude by Rail EIS in 2015. According to the Nation's survey of EISs (Ex. E), a similar process was likely employed with tribes affected by the Millennium Project, and both Tesoro projects in Vancouver and Anacortes for which Ecology was the lead or co-lead. The Nation has repeatedly communicated concerns about impacts to its treaty rights to Ecology since 2006. Further, Nation staff and consultants interacted with Ecology's Project Manager for this DEIS repeatedly throughout the last two years. *See* Ex. A for a compilation of such correspondence. Nonetheless, Ecology has wholly failed to engage on the issues that matter to the Nation and consult with the Nation on the proposed Project, a Project that will significantly adversely affect the Nation and resources upon which the Nation depends. The DEIS's decision to defer treaty rights to the anticipated separate but parallel NEPA decision document is inappropriate. Failure to address treaty right impacts violates state law and fails to prove sufficient information for Ecology to make a fully-informed decision about the Project.

Failure to address cultural interests and instead relying on a separate but parallel Section 106 consultation process similarly violates state law. By relying on the Section 106 study that is limited by the Area of Proposed Effect ("APE"), the DEIS fails to accurately assess the cultural impacts downstream of the proposed FRE. The Corps-defined APE is confined to a few discreet areas including the dam and reservoir footprint and Rainbow Falls, and not consistent with the area studied in the DEIS. *See* Tribal Resources Comment Matrix, comments 5, 7; Cultural Resources Comment Matrix, comments 1, 7, 10.

G. Environmental Justice Impacts to the Nation Not Considered.

Overall, the Environmental Justice process requires that no minority or low-income population group should bear a disproportionate share of potential adverse environmental and socioeconomic impacts resulting from major projects such as the dam/levee Project proposed for the Chehalis Basin. In addition, special efforts should be made to reach out to such communities to ensure that they understand the proposed project, its potential impacts on them, and to ensure that those communities' concerns and the effects upon them are heard and understood by the decision makers so that decisions can be altered to avoid burdens being disproportionately-borne.

The DEIS fails to properly analyze or consider the impacts of the proposed Project from an environmental justice perspective, particularly the impacts on the Nation's cultural, economic, and historic interests as well as the impacts to the Nation's treaty rights. The DEIS's outrageous conclusion that there are no disproportionate impacts on low-income or minority communities (but for possibly some additional burdens to low-income communities from ground-shaking) is

wholly unsupported and incorrect. The DEIS states that land use impacts will occur where people do not live, therefore disproportionate impacts on environmental justice populations are not expected. This determination ignores the economic outcomes that will likely drive up land values in floodplain areas that are currently marginal because of flooding. These tend to be the same areas were minority and low-income populations are able to afford to live. *See*, Environmental Justice Comment Matrix, comments 10-14.

Overall, as set forth throughout this letter, the assessment of impacts from the proposed Project in the DEIS is incomplete, inaccurate, and/or improperly deferred to other processes at later dates. These failures alone hamper and undermine a thorough and accurate assessment and discussion of environmental justice implications and impacts of the dam that will fall disproportionately on the Nation and its members. *See* also Economics & Socioeconomic Analysis Review, major finding 12.

Further, the DEIS fails to actually and accurately assess and discuss environmental justice impacts from the significant and unavoidable environmental impacts to fish and habitat and water quality that the DEIS does identify. That failure occurs in multiple ways.

1. Environmental Justice Communities Are Too Narrowly Defined.

First, and most egregiously, the DEIS fails to include the Quinault Indian Nation in its environmental justice assessment. *See,* Appendix D to DEIS, in particular part 2.1 and Table D-4, which shows exclusion of the Nation from consideration. This failing is inexplicable, as elsewhere in supporting documents, for example in the Tribal Resources Discipline Report in Appendix L, the DEIS acknowledges the Nation's deep cultural, subsistence, historic, and economic ties to the Chehalis Basin, including subsistence, economic and cultural reliance on the fish in the Basin. The DEIS and supporting documents acknowledge that the Nation has treaty rights to hunt, gather and fish in the Basin. Further, the Nation has been deeply and completely engaged at every step in this process from very early in the Basin flood control meetings and process, to the submission of detailed scoping comments for the DEIS.

Nonetheless, when choosing the area assessed for the purposes of determining whether any group is disproportionately affected by the significant, unavoidable and adverse impacts from the dam to fish, habitat, and water quality, the DEIS includes only "census units" that are residences immediately adjacent to the Chehalis River. This, of course, ultimately excludes the Nation and Quinault people from any kind of environmental justice assessment. The Nation may well be the most-affected community from the impacts to fish and habitat, yet the DEIS does not even deign to mention the Nation in the environmental justice assessment. DEIS at p. 146-147; Appendix D Figs. D-1 and -2, Tables D-5 and-6. Only on page 18 of Appendix D, are the Quinault people mentioned as one of several tribal groups, and the Appendix says only that any potential impact to their interests will be addressed in some later, non-SEPA process. The message in the DEIS is that because the Quinault have a unique and specific interest as a tribe, and because the Quinault people were historically forced to be confined to a reservation that is not immediately on the River, they are now disqualified from environmental justice considerations under SEPA analysis.

This is preposterous, the antithesis of environmental justice, and it runs directly contrary to policies and commitments expressed by the State of Washington and the express direction by the CEQ guidance and the ruling of the court applying that guidance in *Standing Rock Sioux Tribe*, 255 F. Supp 3d 101, 137-38. In that case, the court highlighted the obligation to ensure that environmental justice analysis should not be constrained in such a way as to exclude or dilute effects to communities such as tribes. Yet, that is precisely what the DEIS does.

Similar to what the DEIS does here, the court in *Standing Rock* found the EIS inadequate because the Army Corps of Engineers examined only a handful of census tracts that were in immediate physical proximity to the pipeline, even though the effects of an oil spill from that pipeline would significantly affect Standing Rock tribal members to a degree that was disproportionate to other communities in the region. *Id.* Here, by narrowly-constraining the environmental justice assessment to those census tracks that are physically along the Chehalis River itself, the DEIS excludes any consideration of the significant negative impacts on the Quinault people from further destruction of fish and habitat that the Quinault have relied on since time immemorial (it also has the effect of arbitrarily excluding from analysis other stakeholders in the Basin). As Appendix L shows, the Nation's interests in the Chehalis Basin are substantial. Fishing, in particular, is integral to the Nation's economic, subsistence, and cultural wellbeing in a way that is not likely true for any community other than other tribes in the area. *See* Technical Report – Impacts on Fish and Fisheries. The Nation's subsistence and cultural reliance on the Chehalis Basin is unique, and the unavoidable and significant impacts identified in the DEIS will affect food and lifeways for the Nation well out of proportion to effects felt by other communities.

2. Impacts Disproportionate to the Nation Are Ignored.

Second, the exclusion of the Nation in the consideration of environmental justice means that many significant environmental justice implications of the dam are ignored or missed in the DEIS. Executive Order 12898 directs that considerations such as differences in subsistence or food consumption are an integral component of proper environmental justice analysis. The CEQ guidance directs that adequate assessment and analysis of environmental justice considerations require research and analysis of cultural, social, occupational, historic, and economic factors particular to the community that may suffer disproportionate impacts. None of that analysis has occurred in the DEIS with respect to the Quinault people. Appendix L pays lip service to the fact that the Nation has deep and long cultural, social, occupational, historic and economic ties to the Chehalis River Basin, particularly the fish. Further, the Quinault people have historically relied heavily on fish for food, and still do, to an extent greater than non-native populations in the area. Yet there was no effort to quantify or qualify that consumption or to analyze what further depletion of fish stocks that are already in precarious positions might mean for a community whose very sustenance relies on those fish.

It is only in Appendix D that there is any acknowledgement that there will likely be additional closures to fishing because of the depletions of fish stocks caused by construction and operation of the dam. Appendix D, p. D-27. In the Appendix, it is noted that this will not have a

disproportionate impact on any environmental justice communities because fish stocks have been in decline and there have been closures in the past. *Id.* In other words, the authors seem to suggest that, because the Nation and its members have already been harmed continuously over time by various actions and inactions within the Basin, further harms could not disproportionately affect the Nation. This is particularly absurd given that the dam results in additional significant negative unavoidable impacts to fish and habitat, including the likely extirpation of spring Chinook. The DEIS apparently takes the position that environmental *injustice* is the baseline and therefore, continuing environmental *injustice* cannot have a disproportionate effect. This is, of course, preposterous, wholly unsupportable, and inadequate given the intent and requirements for including environmental justice considerations and analysis in environmental review. In particular, it is directly contrary to the direction from the Executive Order and CEQ guidance, as well as SEPA itself, to examine and disclose cumulative impacts, including those that disproportionately affect Indian tribes.

3. Environmental Justice Review Cannot Be Deferred to Later Processes Outside SEPA.

Third, the attempt to postpone environmental justice analysis particular to the Nation to other, later processes outside the DEIS is improper and makes for an incomplete and inadequate DEIS. Appendix D and the DEIS repeatedly defer the obligation to engage in analysis of environmental justice in the DEIS by claiming that to the extent there may be a disproportionate effect on any tribe, including the Nation, those effects will be analyzed elsewhere, pointing to government-to-government consultation. Appendix D, p D-18. Again, this runs counter to applicable guidance. The CEQ guidance requires that, in the environmental review process (not some later process), tribal input must be sought at a level "consistent with government to government consultation." It does not say wait until consultation (assuming consultation properly happens at all) to seek tribal input. Rather, the input is supposed to be part of the environmental review itself in order to inform government decision making, inform the public, and allow a comprehensive environmental justice analysis within the context of the information gathering and analysis that is part of an EIS. Consultation with tribes and environmental review under SEPA are two separate and distinct obligations. While they may overlap or have similarities, they are not substitutes for each other.

Here, the DEIS, while acknowledging significant tribal interests, including treaty rights and significant unavoidable impacts to fish, habitat and water quality, simply defers any environmental justice analysis to the consultation process. (Although, again, the DEIS claims there will not be any disproportionate impacts on any environmental justice community.) Appendix D even goes so far as to claim that no determinations regarding significance of impacts to either cultural resources or tribal resources are made in the DEIS, describing those determinations as "separate" from environmental review. This is directly counter to SEPA, to NEPA, and to guidance and policies concerning environmental justice requirements as part of environmental review. Appendix D, p. D-25. *See also*, portions of Appendix L at *e.g.,* p. L-24

suggesting that cultural impacts will be deferred to consultation, if any, under section 106 of the National Historic Preservation Act.[10]

In sum, the DEIS fails to conform to environmental justice requirements to assess and discuss disproportionate impacts to the Nation from the proposed Project. It does so by cutting the Nation out of consideration with an artificially narrow definition of environmental justice communities; it does so by failing to connect the significant unavoidable impacts to fish and habitat and water to the special interests of the Nation in those resources for food, culture, history and economics; and it does so by deferring the obligation to examine environmental justice impacts to other later processes disconnected from environmental review and uncertain in their timing and outcomes. The DEIS is inadequate in its failure to address environmental justice impacts on the Nation.

H. Economics and Socioeconomic Impacts/Benefits Were Not Addressed.

For a proposed Project that has already received substantial state investment, and that has such a significant magnitude and cost—environmentally and financially—it is an abuse of discretion and arbitrary and capricious not to have provided the public and decision makers with a full cost-benefit analysis. Overall, there is an absence of necessary economic and social analysis presented in the DEIS. Where there are passing references suggestive of proposed Project costs, economic implications or related social impacts, the fundamental supporting data, information and analysis is absent. Assessment of the net benefits of the proposed Project is dependent on a variety of factors, the most basic of which relies upon identifying all associated costs and benefits, monetizing those that can reliably be monetized. However, the economic benefit of the proposed Project is unclear as costs and benefits are not developed or analyzed and uncertainty is not considered in the DEIS. Nor does the DEIS explore the effects of risk, which would be applied to the benefit estimates if they existed. Likewise, the DEIS fails to assess the considerable economic consequences of impacts to natural resources, including the ecosystem services they provide. Notably, the recent ecosystem service valuation conducted for the Chehalis Basin reveals the magnitude of the region's ecosystem services. Study results indicate that the Basin's natural capital provides an estimated minimum of $1.1 billion to upwards of $15.7 billion in ecosystem service benefits annually. *See* Table 1, Economics & Socioeconomic Analysis Review.

[10] This failure also puts the entire environmental justice review—to the extent it occurs in some consultation—outside the public process, yet another violation of SEPA.

Table 1. Summary Asset Value of the Chehalis Basin

	ASSET VALUE			
	Low		High	
	2%	7%	2%	7%
Minimum	$49,148,681,066	$16,272,428,654	$53,023,502,383	$17,555,326,832
Maximum	$622,911,396,122	$206,237,095,910	$675,692,683,790	$223,712,228,898
Periods (years)	100	100	100	100
Annual Value	***$1,140,384,242***	***$14,453,253,371***	***$1,230,290,727***	***$15,677,924,052***

Source: Resource Dimensions, 2020. Monetary values reflect 2019 dollars using Consumer Price Index conversion factors. A Net Present Value formula is used to compare benefits that are produced at different points in time, which employs both a 2% and 7% discount rate.

See Economics & Socioeconomic Analysis Review for detailed critiques of each of these failures.

Additionally, the DEIS severely misrepresents the true costs of the proposed Project. First, the costs attributed to the Chehalis-Centralia Airport levee improvements are not found in the DEIS. According to the PEIS, levee improvements are estimated at between $4.1 and $5.1 million (in 2016 $), with annual maintenance estimated at $8,000 (in 2016 $). Appendix C, p. 20.

The costs of mitigation, adaptive management, and contingency plan development are ignored, as are the costs of obtaining permits and purchasing the Project land from private parties. *See* Section V.D.2 above. Teardown and rebuilding costs for the FRE are not included. The projected lifespan of the FRE is 100 years. At the end of the 100 years, it will have to be torn down or significantly rehabilitated. Excluding these costs is misleading and will leave future generations with a significant bill. Quarry development and access roads (e.g., land acquisition, quarry development and road construction, including stream crossings) were entirely ignored in the DEIS. *See* Economics & Socioeconomic Analysis Review, major finding 8 for further detail.

Related to these cost errors and omissions, the DEIS does not provide inflation-adjusted cost estimates for the FRE using the time period in which construction is projected to occur (e.g., 2025 to 2030), resulting in an under-estimation of nearly $100 million. Table 2 provides a comparison of cost estimates in 2017 and 2025 dollars, assuming an average annual rate of inflation of 2.4%:

Table 2. Estimated Direct Project Costs for FRE Option (2025$)

Feature	Lower Bound ($million)		Weighted/Middle ($million)		Upper Bound ($million)	
	2017$	2025$	2017$	2025$	2017$	2025$
FRE RCC Dam	$307	$371	$358	$432.8	$419	$506.5
Upstream Fish Passage: CHTR Facility	$32	$38.7	$43	$51.9	$65	$78.6
Total	**$339**	**$409.8**	**$401**	**$484.8**	**$484**	**$585.1**

Id.

The overarching failure of the DEIS to reasonably address mitigation for various resources (e.g., wetlands, streams, aquatic, terrestrial and riparian habitat, fish and wildlife species and habitat, surface water quality, recreation), similarly ignores future costs associated with mitigation strategies presented, as well as costs for ongoing monitoring and adaptive management, and long-term management of compensatory mitigation sites in perpetuity to ensure mitigation effectiveness. *Id*. at major findings 3, 6, 8.

Due to these significant shortcomings, the DEIS fails to fulfill SEPA requirements to provide adequate information about economic considerations affecting state policy decisions.

VI. QUINAULT INDIAN NATION SUPPORTS A NON-DAM ALTERNATIVE TO FLOOD DAMAGE REDUCTION IN THE CHEHALIS BASIN.

A Local Actions Alternative could be developed into a viable Local Actions Program with enough specificity to enable comparison of benefits and impacts to the proposed Project, and with enough specificity to enable evaluation of implementation feasibility and community support. The Local Actions Alternative Technical Analyses Review provides a comprehensive list and analysis of recommended elements of a Local Actions Program, which include, but are not limited to:

- **Flood damage avoidance**: The best possible flood protection is to avoid building in areas prone to flood or erosion damage. Focusing development in areas not subject to natural hazards eliminates the high costs of flood damage and protective measures.

- **Floodplain Storage and Flood Attenuation Opportunities**: The Restorative Flood Protection Alternative (RFPA) assessed in the PEIS (Abbe et al. 2016, Abbe et al. 2020, as cited in the Local Actions Alternative Technical Analyses Review) described how floodplain restoration can increase floodplain storage and reduce the celerity (speed) of flood waves. These studies showed the potential to more than triple water storage and reduce downstream flood peaks by as much as 21%.

- **Local Flood Protection Actions**: Application of local levees, flood walls and pump stations to protect developed areas that cannot be relocated.

- **Channel Migration Risk Assessment**: The DEIS fails to address erosion risks in any way even though they account for a significant percentage of flood damage. A Local Actions Program would identify erosion risks and provide resources for relocation or buyouts in rural areas, and environmentally sensitive bank protection in developed areas (including for farmland on terraces).

- **Floodplain Buy-out Evaluation and Resources**: Helping people move out of harm's way not only protects them, but can save taxpayers millions of dollars in flood relief costs as well as with regard to the costs of building and maintaining flood defenses.[11] Acquisitions and relocations permanently remove flood damage liabilities while providing valuable environmental benefits. This is in stark contrast to structural solutions such as dams that ultimately will need major repairs or replacement, at costs far exceeding their initial cost. For every dollar spent on acquisition of flood prone properties there is a $2 to $7 return. Relocations have the added benefit of triggering new economic development and jobs related to developing new industrial, residential and agricultural areas. A Local Actions Program would provide benefits throughout the Chehalis Basin and can be targeted to provide the greatest benefits for the cost, focusing on structural solutions (e.g., levees, floodwalls) in densely populated areas, and non-structural solutions (e.g., floodproofing, buyouts, relocation) in rural areas. Such a program offers sustainable long-term solutions with no risk of catastrophic flooding caused by a dam failure. These are the only solutions permanently removing the risk of flood damage and requiring no ongoing operation, maintenance, or replacement costs.

- **Floodproofing and Agroforestry**: Flood proofing involves local structural actions such as raising structures above flood elevations or equipping the structure to withstand flooding (wet floodproofing). In situations where a structure cannot be moved or an owner is unwilling to relocate, this can provide the best means of reducing the costs of flood damage. "Agroforestry" is a term often used to describe robust, vertical, and diverse farms. These systems tend to:

    - incorporate perennial crops (i.e. tree fruits and nuts, berries),

[11] Moving people out of harm's way is the international platinum standard to address flood damage. In its scoping comment letter, the Nation presented substantial "Flood Protection by Nature Examples" (pp. 31-33). *See also*, Local Actions Alternative Technical Analyses Review for additional examples and resources available. The federal government is increasingly pushing for communities to commit to buy-out programs in chronic flood-prone areas (Mach et. al 2019). In a recent federal policy change, funding partially administered by the U.S. Army Corps of Engineers for flood protection and climate adaptation can be contingent on local governments agreeing to use eminent domain to purchase properties whose owners are unwilling to voluntarily sell: https://www.nytimes.com/2020/03/11/climate/government-land-eviction-floods.html?action=click&module=Top%20Stories&pgtype=Homepage.

    - emphasize a vertical structural component absent from most annual cropping systems,
    - incorporate more than one crop type and sometimes numerous crops, growing in conjunction

- **Land Use Management and Local Community Resiliency**: The core of a Local Actions Program would be effective regional land use management planning consistent with the goals of the Chehalis Basin Strategy to reduce flood damage and improve aquatic habitat. Land use management must consider a variety of factors, not just flood hazards and aquatic habitat, but also economic and community effects. A Local Actions Program would build resiliency into the community by protecting designated necessary or critical land uses in the floodplain against all flooding (not just major flooding) and encouraging other growth to shift to upland areas. New development in upland areas would create safer communities, resilient against the chronic flood damage that has plagued the area all of its developed history. Improvements to infrastructure would also create jobs and increase security.

The Local Actions Alternative Technical Analyses Review demonstrates the viability of a Local Actions Program on a reach-by-reach basis in comparison to the limited flood damage reduction benefits of the proposed dam/levee Project. For several reaches of the Chehalis River, we have determined the number and type of valuable structures that are projected to experience reduced depths of flooding with the proposed Project, and then describes how a viable Local Actions Program could accomplish flood damage reduction for these same areas. We provide one example herein (Figure 4), *see* the Local Actions Alternative Technical Analyses Review for details and more examples.

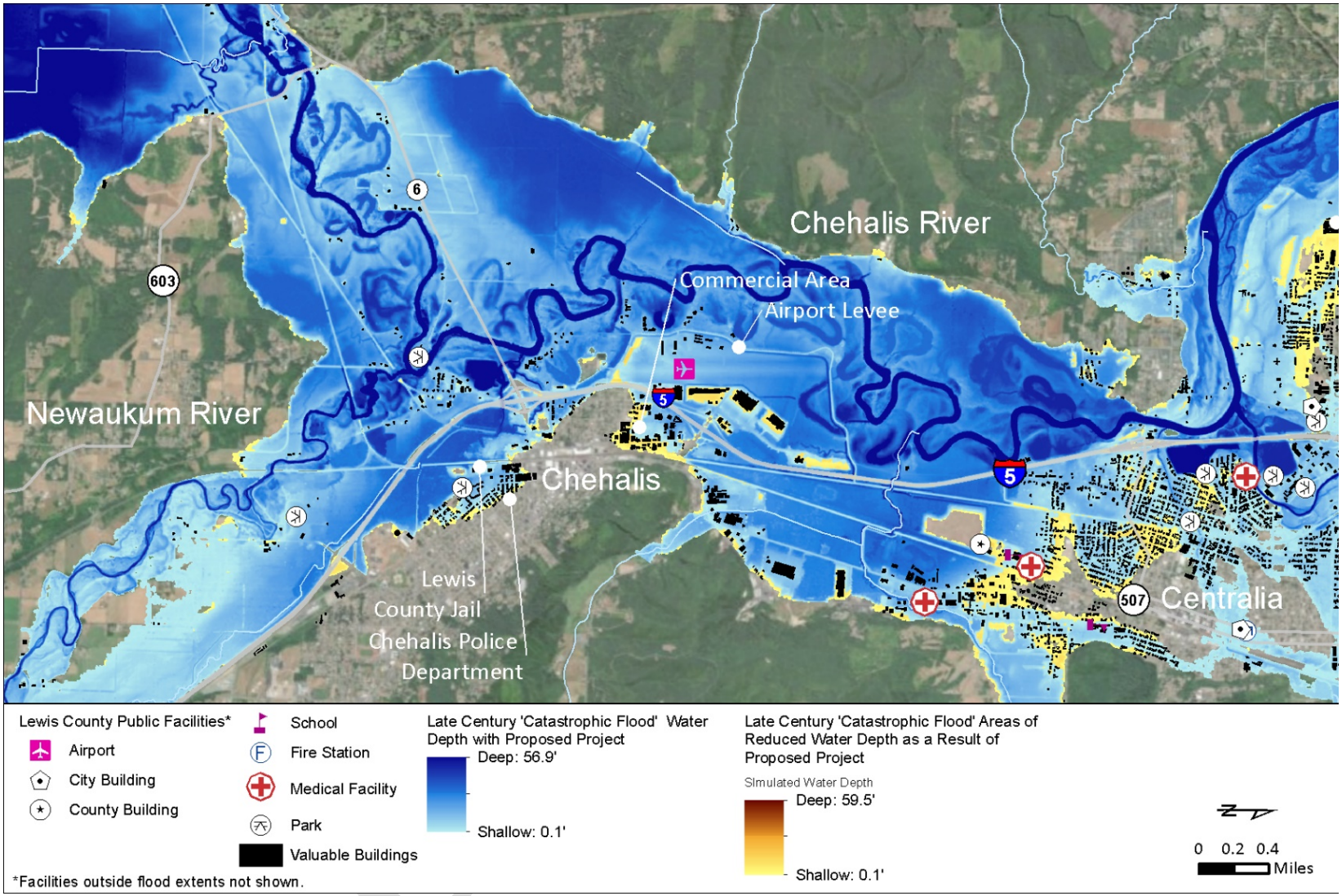


Figure 4. DEIS hydraulic model results showing depth of flooding for late-century DEIS-defined 'catastrophic flood' of 75,100 cfs, from confluence of Chehalis River with Newaukum River, downstream to City of Chehalis, including the Airport Levee. The model simulates flooding in all shaded areas. Yellow shading indicates areas which would experience reduced flood water depths as a result of the Proposed Project.

According to the hydraulic modeling done for the DEIS, the City of Chehalis receives very little benefit from the proposed Project (*see* Figure 4). A narrow band near the Lewis County offices is projected to experience reducing flood depths, however the Lewis County Jail appears to still flood with water depths of approximately 2+ feet. Overall, the proposed Project would result in reduced flooding for approximately 72 rural homes in the immediate area. By comparison, an entire commercial area north of the city could be protected from all levels of flooding with alternate structural measures such as raising existing levees, and/or constructing new floodwalls and pump stations. *Id*.

In the Airport Levee area, several retail businesses are projected to experience reduced flooding with the proposed Project, including Walmart, Grocery Outlet, Home Depot, I-5 Toyota, and Les Schwab. The DEIS dismisses the Airport Levee as being a viable component of the Local Actions Alternative because it would increase flood levels in surrounding areas unless coupled with the proposed FRE facility. The DEIS fails to explain the extent of that flood level increase (where and how much), and also does not explain that there is a standard FEMA process for authorizing flood level increases from such structures. If the Airport Levee were constructed in the absence of the FRE, it is likely that most of the flood rise would affect rural land. Under a Local Actions Program, the local government could pursue a process whereby any consequent flood level increase in these rural lands would be negotiated with land owners and ultimately authorized. A Local Actions Program would also consider strategic buyouts and relocations, particularly with respect to considering options for new development in safe areas of the I-5 corridor south of Chehalis to facilitate relocations. *Id*.

VII. CONCLUSION

Despite wholly inadequate analysis and under-representation of many significant impacts having disproportionate negative effect on the Nation, the DEIS admits that significant impacts that are probably incapable of being mitigated will result from the proposed Project. The DEIS provides no information or discussion regarding whether or how those significant adverse impacts can or will be mitigated. Therefore, the only reasonable and legally justifiable next step for the state is to deny the proposed Project under the substantive authority of SEPA.

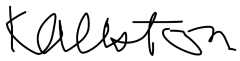
The better approach is one that benefits the entire Chehalis Basin, in keeping with the Strategy, by committing to pursue a robust Local Action Program based on an assessment of the flood and erosion risk areas. This would include implementation of a suite of local measures that will have the greatest positive impact in reducing flood risks and flood damage across the Basin and cause the least environmental harm.

Alternatively, if Ecology declines to deny the proposed Project under its substantive authority, the only viable next step is a supplemental DEIS that explicitly and fully addresses each of the many technical errors, omissions, under-representations, and failures to provide adequate analyses discussed in this letter and all incorporated materials.

Should you have any questions concerning these comments, do not hesitate to contact the undersigned. The Nation looks forward to continuing to work on a more comprehensive and less-damaging strategy for controlling flooding in the Chehalis Basin.

Sincerely,

Janette K. Brimmer
Earthjustice
Attorney for the Quinault Indian Nation



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