May 21, 2020

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

Dear Reviewers:

Thank you for the opportunity to participate in the outcome on the Draft Chehalis Basin Environmental Impact Statement (DEIS). We appreciate that this is a very complex project and hope our input will be of assistance in making decisions that will benefit the environment, visitors and residents of the Chehalis Basin Watershed.

FOGH is a broad-based 100% volunteer tax-exempt 501(c)(3) citizens group made up of crabbers, fishers, oyster growers and caring citizens. The mission of FOGH is to foster and promote the economic, biological, and social uniqueness of Washington's estuaries and ocean coastal environments. The goal of FOGH is to protect the natural environment, human health and safety in Grays Harbor and vicinity through science, advocacy, law, activism and empowerment.

We incorporate by reference comments submitted by the Quinault Indian Nation, the Confederated Tribes of the Chehalis Reservation, Audubon Washington, Grays Harbor Audubon Society, Citizens for a Clean Harbor, Twin Harbors Waterkeeper, Earth Ministry, Wild Salmon Center, Conservation Northwest, South Sound Sierra Club, Washington League of Women Voters, American White Water, Orca Network, Orca Conservancy, Pacific Rivers, Coast Salmon Partnership, Wild Fish Conservancy, and Wild Steelhead Coalition.

As we have commented before, the Chehalis basin drains 2,660 square miles and is broken into two separate WIRAs, the upper 23 and lower 22, which empty into the Grays Harbor Estuary and the Pacific Ocean. It goes without saying that what happens upstream affects the ecology of those waters downstream. As a result the water-quality, water-quantity and timing of flow are of significant importance to the health and economic vitality of the region.

We are concerned that consideration is given to any sort of dam or water retention configuration and strongly oppose that as a solution, partial or in whole. Dams have proven to be destructive to salmon and Steelhead runs and present unintended consequences that cannot be mitigated. As Mark Cedergreen, former CEO of the Westport Charter Boat Association and advisor to the Pacific States Marine Fisheries Commission stated, referring to the salmon run on the Columbia River, "...its production today [is] about 10-15 percent of what it was pre-dam." The Chehalis River runs are smaller to begin with and they cannot suffer a decline from their present levels.

The treaty tribes, e.g., Quinault Indian Nation, and others such as the Confederated Tribes of the Chehalis and Shoalwater Bay Tribe depend upon the delicate balance that nature provides to sustain their culture and sustenance. The natural flow of waters during flood events depends upon healthy and natural storage of wetlands and riparian areas. The data for "cooling" water temperatures as described in the permanent reservoir scheme is flawed. At most the cool water would be available for about one mile downstream of the dam. Beyond that point the water temperature would increase the further it travels downstream along the agricultural lands that lack adequate riparian zones. Any interruption of this natural process only exacerbates problems elsewhere - usually downstream.

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A comprehensive review of all zoning law and local SMPs (Shoreline Master Programs), exemptions and variances shows that significant variance in and around the basin drainage area would have to be made. Stringent prohibitions must be made to filling or modifying wetlands and riparian areas. Mitigation for projects should NOT be allowed out of area or kind. If a proposed project would jeopardize existing functions and values then it should not go forward.

We are concerned that the DEIS identified 72 instances of "significant adverse impacts", and yet the prospect of the dam is still being considered. What alternatives have been studied? Has raising the I-5 corridor been seriously addressed?

We are concerned that there has been a woefully inadequate analysis of greenhouse gasses (GHG) and in particular the greenhouse flux, due to the flooding of the landscape. Following flooding of landscapes to create any kind of reservoir, terrestrial plants die and no longer assimilate carbon dioxide (CO_2) by photosynthesis, thereby resulting in a loss of a sink for atmospheric CO_2. In addition, bacteria decompose the organic carbon that was stored in plants and soils, converting it to CO_2 and methane (CH_4). What are the expected GHG emissions of the reservoir once it has been flooded? What is the effect of decomposition and greenhouse flux when a system is inundated, drained, and inundated again over the expected time lines?

According to the DEIS, the removal of trees would promote the spread of invasive vegetation and "increase the chance for invasive species to colonize the area." The proposed Mitigation Measures under WILDLIFE -1 (Vegetation Management Plan) alludes to a "multi-phased and detailed planting plan. The plan does not address nor acknowledge how the invasive vegetation (for example scotch broom, or knotweed) would be handled during the construction, during the time that the dam was "open" or what would happen once the dam was closed because of a rain event. The plan suggests the planting of native species within 90-days of completing a drawdown. What native vegetation would survive under total inundation for upwards of one month or longer? What would be the cost of the initial invasive cleansing of the reservoir area, and what would be the cost and time period of subsequent "repairs" after each future event? Would herbicides be considered?

We note that the basin is described as Forestland making up approximately 84 - 87% of the WRIAs. Considerable data has been collected and various reports have shown that large trees have a greater water storage capacity relative to water use than smaller trees. We encourage that forest practices need to be enforced and special consideration should be given to the critical areas that lie within those permitted areas. Perhaps the cut cycle of the forest practices should be studied and a calculation used to determine the effects of water storage in trees if the cycle is increased to 80-years from its current level.

We concur that dredging-style practices will negatively impact and dramatically affect flooding in the lower main stem and downstream cities. Actions that speed drainage from the upper WRIA will interfere with and potentially overwhelm the rivers; streams and other tributaries as they begin their own natural drainage system of storm generated waters.

In summary, the DEIS did not properly address or mitigate:
Problems with dam proposal:
1. Would not protect I-5 nor other flood-prone areas under most flood events
2. Highest risk for damage to ecological functions – salmon, Steelhead and other species
3. Highest cost of all proposed projects. Cost-benefit not detailed or analyzed
4. Limited federal funding for new large scale projects like water retention
5. Project design is still in early phase and cost estimates may change significantly
6. Need for significant additional technical and design work if the project moves forward, including for fish passage facilities which state trap and truck, but the reservoir eliminates historical spawning areas.
7. Process for approval and construction of a dam can take 8–15+ years, with many opportunities for challenge by opponents

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8. Damming rivers is the most expensive, most damaging alternative and should not be considered.

Problems with levees:

1. Levees would increase flooding in other areas, and create similar process to end cut erosion
2. One proposal for levees would only provide I-5 and airport with protection - not a basin-wide solution.
3. Levee proposal for Twin Cities –same concerns as above – increase flooding in other areas; not basin-wide solution.

Alternatives

1. What is the financial relationship between the Chehalis Basin Strategy and the Aberdeen/Hoquiam levees? Are these projects independent of each other?
2. You do not include complete financial analysis for any of the alternatives.

"...the benefits and costs of Alternative 1 & 2 do not include the Aberdeen/Hoquiam North Shore Levee, Local Projects, Land Use Management, and Flood Warning System Improvements." "...the benefits and costs of Alternative 3 & 4 do not include the Aberdeen/Hoquiam North Shore Levee, Local Projects, Land Use Management, and Flood Warning System Improvements." Therefore, your cost-benefit analyses are incomplete and no decisions can be reached based on this data.

3. The information put forth about the four alternatives is incomplete and confusing. Other alternatives must be considered that would be better than any of the four proposed.
4. Why is there is no analysis of the impact of forest practices on flood events? Poor forest practices can cause or exacerbate flooding and improvements need to be included in these studies.

5. The table below summaries the contribution of the Maritime industry as measured in 2015. What would be the cost and impact to this industry and the individuals if an ESA listing was placed on the Chehalis River for Spring Chinook and certain Steelhead populations associated with the location of the dam. What would be the cumulative effect of the loss of those jobs and the "trickle down" of their impacts to human, wildlife, and ecosystem indicators?

In 2015, Washington's Maritime industry supported 69,500 jobs, $4.7 billion in wages, and $21.4 billion in business revenue. Exhibit E-1. Maritime Sector Employment, Revenue, and Wages by Subsector, 2015

Category	Employment	Wages (Millions)	Revenue (Millions)
Commercial Fishing and Seafood Products	15,900	$1,075	$9,428
Maritime Logistics and Shipping	22,200	$1,479	$5,212
Maritime Support Services	8,000	$569	$3,942
Recreational Boating and Boat Building	4,000	$169	$1,561
Shipbuilding, Repair and Maintenance	17,000	$1,226	$900
Passenger Water Transportation	2,300	$138	$394
Total	69,500	$4,656	$21,436

Sources: Washington State Employment Security Department, 2016; United States Census Bureau, 2014; Washington State Department of Revenue, 2016; Community Attributes Inc., 2016

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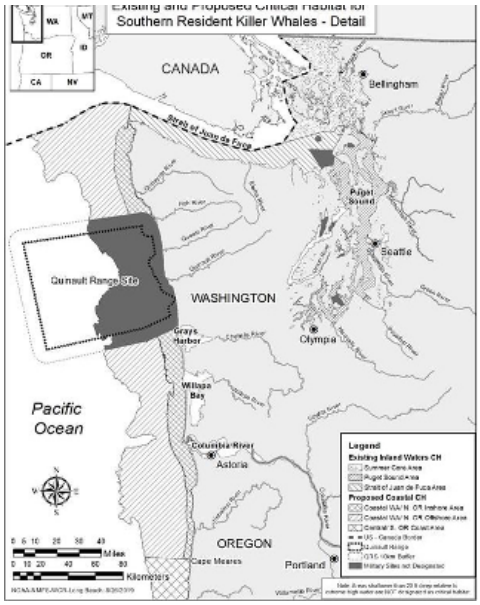
As habitat is lost and more impervious surface is permitted in and around the watersheds of Western Washington, the stocks of salmon on the Coast of Washington have become even more critical to the already listed, Orca or Killer Whales of Puget Sound. Members of L pod of Southern Resident Killer Whales were seen off the coast near Westport as recent as February 13, 2018 and have been

Orca siting map



Critical Habitat

In Summary

1. Damming rivers is the most expensive, most damaging alternative and should not be considered.
2. Building any type of dam is in violation of tribal treaties and will negatively impact usual and customary fishing rights.
3. A dam on the Upper Chehalis will not impact most flooding that occurs from rivers below the dam site. How effective would it be for preventing flooding in much of the basin?
4. A dam presents the highest risk for damage to ecological functions – salmon, Steelhead, wildlife, invertebrates and other dependant species, including humans.
5. The geomorphology of the site is highly unstable and the potential for catastrophic failure is high and needs further modeling to weigh the impacts of a possible destruction on the civilian population.
6. Sequencing of the water flow of tributaries flowing into the Chehalis River needs to be analyzed for potential bank erosion and scouring.

At present we cannot support and vehemently oppose any retention solutions. We suggest that the DEIS is flawed in its considerations and must be supplemented with additional studies that result in "softer" and more reasoned alternative solutions that take into consideration the entire ecosystem of the watershed.

Sincerely,

Arthur (R.D.) Grunbaum
President

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