

Trout Unlimited (Alex Gustafson)

Trout Unlimited (TU) is grateful for this opportunity to comment on the revised draft State Environmental Policy Act Environmental Impact Statement (DEIS) for the proposed Chehalis River Basin Flood Damage Reduction project. With over 300,000 members and supporters – including 4,000 in Washington – and over 350 staff, Trout Unlimited has the benefit of applying vast expertise, including our staff fisheries scientists, to support efforts requiring careful analysis, such as the one at hand. Our strength is derived from our grassroots members and volunteers working together with our staff toward the common goal of ensuring resilient fish populations for future generations. For almost a decade, Trout Unlimited has worked with the Office of the Chehalis Basin through the Aquatic Species Restoration Program. TU is dedicated to using the best available science to guide our efforts requiring careful analysis.

Trout Unlimited is an organization dedicated to conserving, protecting and restoring North America's cold-water fisheries and their watersheds, and our analysis of the revised draft SEPA EIS (DEIS) reflects that mission. Our analysis leads us to conclude that the proposed Chehalis River Basin Flood Damage Reduction Project construction of a Flood Retention Expandable dam (FRE) and improvement to the Airport Levee (collectively referred to as the proposed project), if implemented, would pose an unacceptable threat to salmon and steelhead sustainability in the basin. Beyond the significant and unavoidable impacts to aquatic species and habitats identified in the DEIS, it also lacks critical analysis of the proposed mitigation, and a thorough life-cycle cost analysis for the proposed facility. Given the clear significant impacts without feasible mitigation, compounded with an incomplete cost analysis, TU does not believe the proposed project will meet the needs of fish or people.

Our comments on the proposed Chehalis River Basin Flood Damage Reduction Project are as follows:

Direct Impacts on Native Fish

Water Quality: Salmon and steelhead are cold water fish that typically need water temperatures between 12° and 16° C to successfully complete their life cycle. When water temperatures exceed this range and reach 18 to 20 C, salmon and steelhead have increased basal metabolic costs, reduced growth rates, increased predation risks, greater risk of disease and required increased energy expenditure as they seek cold water refugia. As such salmon and steelhead often experience increased stress, reduced growth and higher mortality rates at high temperatures. Water temperature in the upper Chehalis River is already impaired and without intervention via habitat restoration are expected to get worse with climate change. Recent data (2019-2022) indicates that mean water temperatures in the Chehalis River upstream of Pe Ell exceeded optimal water temperatures for salmon and steelhead of 16° C on 92% of days between June and September and during August water temperatures often reach 18° to 20° C. In addition to direct stress on fish, warm water contains less dissolved oxygen and dissolved oxygen levels above Pe Ell were recorded below the Department of Ecology's 9.5 mg/L threshold 2 out of 3 years surveyed (2016-2018). The construction of the FRE facility is expected to have significant negative impacts on water quality in the reservoir footprint and downstream reaches. Modeling indicates that water temperatures in the Chehalis River within the proposed reservoir footprint and immediately downstream are expected to increase by up to 2° C, which will likely cross the lethal threshold for salmon and steelhead populations.

Spring Chinook in particular spawn in August and September, when water temperatures are at their highest and elevated temperatures associated with the loss of riparian vegetation are expected to lead to increased pre-spawn mortality. A study by Bowerman et al. (2018) showed that female spring Chinook pre-spawning mortality rates in the upper Willamette River basin, Oregon were consistently greater than 80% when water temperatures exceeded 20° C. Other studies have shown a similar result and indicate that fungal and pathogen loads increase significantly with higher water temperatures and low dissolved oxygen levels (Keefer et al. 2010, Carey et al. 2024). The Spring Chinook population in the upper Chehalis River is already declining and at risk of extirpation in the Chehalis watershed a situation that the construction of the FRE facility is going to make worse.

The operation of the proposed FRE Facility is also expected to increase turbidity in the Chehalis River, with changes in water levels in the temporary reservoir potentially resulting in landslides within the reservoir footprint. The increased sedimentation from such landslides and sedimentation in the Chehalis River would have a significant adverse impact on salmon and steelhead populations, resulting in the loss of viable spawning habitat, smothering eggs and reducing the abundance of macroinvertebrates that juvenile salmon and steelhead depend on while rearing in freshwater. It is clear that the water quality impacts of the FRE facility will have significant adverse effects on salmon and steelhead populations and will greatly accelerate their decline in the Chehalis Basin.

- **Construction:** Construction of the FRE Facility would take place during the summer low flow period, a time when flows, dissolved oxygen and water temperatures are already limiting factors for fish in the upper Chehalis. Construction is expected to use approximately 2 million gallons of water per day on average, further exacerbating water quality impacts on the survival of native fish during the already stressful summer low flow period. In water construction is planned to occur continuously for 10 hours a day over a three-month period across two years and will occur during a period when adult spring Chinook are actively migrating through the upper Chehalis. The disturbance caused by construction, noise, vibration, and water use, etc., will put significant additional pressure on a population that is already in decline. Based on the integrated model and EDT simulations, spring Chinook populations are expected to decline by between 41% and 68% during construction and similar unacceptable losses are expected for other species and runs during construction.

- **Large Woody Debris and Sediment Transport:** Construction of the FRE facility will have a significant impact on salmon and steelhead habitat by reducing channel forming flows and significantly reducing the recruitment of large woody debris downstream of the facility. Reduced large woody debris recruitment due to removal at the dams' trash collector and removal of vegetation in the reservoir footprint is expected have significant negative impacts on habitat conditions downstream in the Chehalis River. Large woody debris is a key component of salmon and steelhead habitat, adding complexity, contributing to riffle and pool formation and substrate retention, and aiding in building and maintaining spawning gravel and macroinvertebrate communities. Large wood also directly supports slow pool habitats, which provide cool water and refuges for juvenile fish and migrating adults.

- **Spawning Habitat:** Thousands of salmon and steelhead spawn in the areas that would be affected by the FRE facility. Spring Chinook have an extended freshwater holding period from spring through fall and rely extensively on mainstem habitats in the upper Chehalis for spawning. Of the

Spring Chinook spawning upstream of the FRE facility, 93% of the redds in recent surveys were located within the proposed temporary reservoir area. Similarly, 87% of Fall Chinook spawning upstream of the FRE facility constructed redds within the reservoir footprint. Coho Salmon also utilize the proposed reservoir site as spawning habitat and 32% of redds upstream of the FRE Facility were located within the reservoir footprint, while 31% of winter steelhead redds upstream of the FRE facility occurred in the area as well. In the case of steelhead and Coho Salmon, recent genetics work indicates that steelhead spawning in tributaries draining the Willapa Hills (South Fork Chehalis and Upper Chehalis (including above the FRE site) represent a genetically distinct population group, with a significant amount of the overall spawning of this group occurring upstream of the FRE location. Similarly, Coho salmon spawning in the upper Chehalis River (upstream of the FRE facility) represent a genetically distinct population.

Clearly the area that would be impacted by the FRE facility is critical spawning habitat for salmonids and the construction of the facility and removal of vegetation in the reservoir footprint is likely to severely impair the habitat. Spring Chinook in particular spawn in August and September, when water temperatures are at their highest and elevated temperatures associated with the loss of riparian vegetation are likely to lead to increased pre-spawn mortality.

- **Juvenile Rearing:** Juvenile Chinook and Coho Salmon and Cutthroat Trout and Rainbow Trout/Steelhead are abundant in the upper Chehalis River and during the summer months some of the highest densities of juvenile salmonids were located within the reservoir footprint. These juvenile salmonids, and especially steelhead make frequent migrations upstream and downstream of the proposed FRE facility site, in search of rearing habitat to maintain optimal bioenergetic conditions (prey availability, rearing habitat, water temperature and dissolved oxygen levels). Densities of larger juvenile steelhead are consistently higher in high gradient reaches, that feature short pools, and larger substrates. These habitat types match those within the proposed FRE facility footprint, where riparian vegetation would be removed. Therefore, juvenile salmonids are expected to be highly impacted by the habitat impacts associated with the facility. The ability of the habitat in the FRE footprint to produce larger smolts is also significant, as larger smolts consistently have higher downstream and marine survival rates and as such a reduction in habitat associated with larger individuals will have long-term negative consequences for the overall viability of these populations.

- **Migration Survival:** The construction of the proposed FRE Facility is expected to have severe impacts on the survival of salmon and steelhead moving through the site. Table E-10 in the DEIS indicates that adult upstream survival rates are expected to range from just 9% for Coastal Cutthroat, 34% for spring Chinook, 65% for both fall Chinook and Coho Salmon and 69% for winter steelhead during construction and the non-flood retention phases. Even the highest survival rates are extremely low and well below the >90% survival targets that many other dams are required to meet. As such these low survival rates will result in an unacceptable and significant adverse impact on adult salmon and steelhead returns to the upper Chehalis watershed.

- **Abundance:** Populations of salmon and steelhead are expected to face declines over the next 25 to 50 years in the upper Chehalis River due to habitat loss, climate change and a variety of other factors. However, these losses are expected to be substantially worse if the FRE Facility is constructed (see Table E-12 FRE Impacts or E-29 No Action Alternative). For example, spring Chinook Salmon are expected to decline by 51-53% over the next if no action is taken but will be extirpated above Crim Creek with the construction of the facility. Coho are expected to decline by 12-23% if no actions are taken or 96% over the next 25 years if the facility is constructed. Fall

Chinook 24% if no actions are taken or 53-57% if the facility is constructed. Winter steelhead 19% if no actions are taken or 54-55% if the facility is constructed. With spring Chinook declining not only in the Chehalis but across much of their range, constructing a project that will result in the extirpation of a population is an unacceptable impact. Additionally, this facility would permanently impair some of the most important habitat remaining in the Chehalis watershed. For example, while the Upper Chehalis only represents 4% of the total habitat in the basin, it accounts for 15% of the steelhead produced in the Chehalis watershed.

- **Pacific Lamprey:** In addition to the impacts to salmon and steelhead populations, Pacific Lamprey, which is a species of greatest conservation need in Washington, and Western Brook/Western River Lamprey both inhabit the upper Chehalis watershed above and below the FRE site. Lamprey ammocetes were found ~50% of survey reaches near or within the proposed project site, suggesting that the area is a key spawning and early rearing habitat. Pacific Lamprey populations have experienced significant declines across the Pacific Northwest, which have been attributed to fish passage at dams, habitat degradation, low flows and high-water temperatures, all of which are impacts expected from the construction of the FRE facility.

- **Fisheries/Recreation:** Steelhead runs are regularly below escapement goals in recent years within the Chehalis basin. Since 2019, this has resulted in on-and-off fisheries closures by Washington Department of Fish and Wildlife (WDFW) throughout the Chehalis River basin, including the upper river at and above the proposed FRE facility. Salmon runs have suffered the same fate, with seasonal fluctuations based on forecasts and allocations set during the annual North of Falcon season-setting process.

As noted in Appendix J, Recreation Discipline Report, according to WDFW 2023b, 0.3% of anglers identified the Chehalis River as a preferred place to fish—a relatively strong percentage, given that most named waterbodies received 0.1% or less in their survey.

While most harvest fishing for steelhead and salmon occurs below the proposed FRE facility and is represented by WDFW's catch record card data in Tables J-6 – 8, catch record card data only accounts for harvested fish and does not capture catch-and-release fishing, something highly valued by TU members.

The area at and above the proposed FRE facility is a popular fishery with catch-and-release steelhead anglers. A portion of this stretch of the river is part of the Weyerhaeuser Pe Ell South Permit Area and the 725 annual permits granting access to this area sell-out instantly each year. And although the proposed FRE facility only accounts for less than 1% of the 95,000 acres within the Weyerhaeuser permit area, the recreational access and value here is disproportionately high.

Since the upper Chehalis River, specifically the area within the proposed FRE facility area, is a significant recreation attraction within the Weyerhaeuser permit area, closure of the river and surrounding lands during construction and through operations would eliminate almost 14 miles of river to fishing, including access to a much larger recreation area used additionally for hunting, boating, and camping (Figure J-5).

As noted in Appendix J, this would have a Significant Adverse Impact on recreation, specifically fishing, during the construction and into operations, with most of this area becoming inaccessible or lost to the proposed FRE facility. While the applicant proposes to develop a Recreation Mitigation

Plan, to-date they have only produced a technical memorandum in 2021 containing only conceptual improvements and not an actual Recreation Mitigation Plan. Appendix J found that the Conceptual Plan lacked insufficient mitigation and no certainty around maintenance, monitoring, and adaptive management actions to offset the Proposed Action, and were neither clear about the technical feasibility or economic practicability for mitigation.

Therefore, we are supportive of the findings in Appendix J which state: "...the Proposed Action would have significant and unavoidable adverse environmental impacts on recreation," including the elimination of 13.2 miles of highly valued steelhead fishing on the Chehalis River and within the footprint of the proposed FRE facility.

- **Nonnative Fish:** Nonnative warm water fish are increasing in abundance in the lower Chehalis watershed and present a significant predation risk for native species such as salmon and steelhead smolts. With climate change, the impacts of non-native warm water fish species on the native fish community are expected to increase. As the climate warms the habitat in the Chehalis basin is expected to become more ideal for nonnative species, such as bass and as such these species are expected to increase abundance and distribution. The construction of the FRE facility is likely to add to this issue with water temperatures expected to increase by up to 0.3° C for approximately 14 miles downstream of the facility.

Additional Concerns

- **Cost, Feasibility, and Uncertainty:** The first dam proposal failed due to inadequate planning and siting analyses, as well as concerns from tribes, fishermen, and local leaders. Instead of reassessing their plans and shifting course, flood district leaders have returned with a proposed dam far larger and more expensive than the original. The revised proposed FRE requires a much larger foundation to make it expandable, and to provide for a permanent reservoir. The new design calls for a 45% wider structure, increasing the width from 1550 to 2250ft at the crest; it will increase the required concrete by 65%. There is no plan for how to pay for the dam, but the huge cost would likely fall to Washington taxpayers. Based on the track record of past projects of this size and complexity the \$1.3 - \$1.6 billion cost is grossly underestimated. We can expect it to cost far more. These estimates do not include the expense of necessary additional contractor-supported technical studies, engineering and design, permitting, and direct costs of mitigation. Cost estimates for ongoing operations and maintenance, nor a facility life-cycle cost, are also not included. The construction timing is likely underestimated at four to six years and does not account for any uncertainties or contingencies. This project proposal lacks the necessary details to fully estimate the costs critical for determining the feasibility of implementing and operating a structure of this size. If pursued, it would threaten to egregiously exceed budget projections due to critical cost omissions.

- **Mitigation:** WAC-197-11-660(2)(a and b) states that SEPA decision makers are required to analyze the environmental impacts of mitigation measures when the measures themselves represent a substantive change to the proposal so that the mitigation measures themselves are likely to have significant adverse environmental impacts and the mitigation will not be analyzed in a subsequent environmental document prior to their implementation. The absence of any specificity or critical analysis of the mitigation proposed is a critical failure by DOE to convey to the public the intensity, scale, and cost which would be required to address the significant adverse impacts if the proposed project were to move forward. "There is uncertainty around whether mitigation is technically feasible or economically practicable." (Summary, page S-20).

Summary and Closing Remarks

As mentioned in our introduction, we are extremely sensitive to the need to identify an approach to flood damage reduction in the Chehalis Basin that protects the lives and livelihoods of its residents, while sustaining the critical fish populations that rely on this watershed. Taking no action is unacceptable in our view. However, Trout Unlimited feels the proposed FRE project poses an unacceptable risk to fish populations in the Chehalis River basin.

The DEIS makes it very clear to us that the proposed project seeks to address the problem of flooding (albeit partially) at a very significant cost to fish populations. As such, it seems inconsistent with the objectives of the Chehalis Basin Strategy, which is to fix both problems in tandem; codified in RCW 43.21A.732. While acknowledging the years of hard work and expertise that have gone into developing the revised proposal, we strongly urge the Chehalis Basin Board and the Office of the Chehalis Basin to reconsider and re-analyze local flood damage reduction actions and/or other combined approaches that do not have the inherent unavoidable negative impacts on fish populations associated with the proposed FRE facility. We fully acknowledge that property acquisition is a politically sensitive approach to the problem and will not be possible in many instances. We do believe that moving people out of harm's way (where feasible with willing landowners) is at least part of the solution to meeting the flood damage reduction objectives over the long term in an economically sustainable way.

For these reasons, and those we describe elsewhere in these comments, TU cannot support the proposed project, which very clearly would have significant negative impacts to salmon and steelhead in the basin. To meet the Chehalis Basin Strategy objectives in the near-term and long-term, we strongly support prioritizing projects that provide dual benefits of flood damage reduction and habitat restoration. We seriously urge continued commitment to developing less damaging and more cost-effective alternatives like the Local Actions Non-Dam alternative in conjunction with the Aquatic Species Restoration Plan as viable solutions to flood reduction. We greatly appreciate your consideration of these comments, and we are happy to answer any questions you may have about our concerns.



February 4, 2026

Meg Bommarito
Washington State Department of Ecology
SEPA Revised Draft EIS for Chehalis River Flood Damage Reduction Project
P.O Box 47775
Olympia, WA 98504-7775

RE: Public comments on Draft SEPA EIS for the revised Chehalis River Basin Flood Damage Reduction Project

Also submitted electronically via: <https://admin.ecology.commentinput.com/?id=6U54ErkfW>

Dear Ms. Bommarito,

Trout Unlimited (TU) is grateful for this opportunity to comment on the revised draft State Environmental Policy Act Environmental Impact Statement (DEIS) for the proposed Chehalis River Basin Flood Damage Reduction project. With over 300,000 members and supporters – including 4,000 in Washington – and over 350 staff, Trout Unlimited has the benefit of applying vast expertise, including our staff fisheries scientists, to support efforts requiring careful analysis, such as the one at hand. Our strength is derived from our grassroots members and volunteers working together with our staff toward the common goal of ensuring resilient fish populations for future generations. For almost a decade, Trout Unlimited has worked with the Office of the Chehalis Basin through the Aquatic Species Restoration Program. TU is dedicated to using the best available science to guide our efforts requiring careful analysis.

Trout Unlimited is an organization dedicated to conserving, protecting and restoring North America's cold-water fisheries and their watersheds, and our analysis of the revised draft SEPA EIS (DEIS) reflects that mission. Our analysis leads us to conclude that the proposed Chehalis River Basin Flood Damage Reduction Project construction of a Flood Retention Expandable dam (FRE) and improvement to the Airport Levee (collectively referred to as the proposed project), if implemented, would pose an unacceptable threat to salmon and steelhead sustainability in the basin. Beyond the significant and unavoidable impacts to aquatic species and habitats identified in the DEIS, it also lacks critical analysis of the proposed mitigation, and a thorough life-cycle cost analysis for the proposed facility. Given the clear significant impacts without feasible mitigation, compounded with an incomplete cost analysis, TU does not believe the proposed project will meet the needs of fish or people.

Our comments on the proposed Chehalis River Basin Flood Damage Reduction Project are as follows:

Direct Impacts on Native Fish

Water Quality: Salmon and steelhead are cold water fish that typically need water temperatures between 12° and 16° C to successfully complete their life cycle. When water temperatures exceed this range and reach 18 to 20 C, salmon and steelhead have increased basal metabolic costs, reduced growth

rates, increased predation risks, greater risk of disease and required increased energy expenditure as they seek cold water refugia. As such salmon and steelhead often experience increased stress, reduced growth and higher mortality rates at high temperatures. Water temperature in the upper Chehalis River is already impaired and without intervention via habitat restoration are expected to get worse with climate change. Recent data (2019-2022) indicates that mean water temperatures in the Chehalis River upstream of Pe Ell exceeded optimal water temperatures for salmon and steelhead of 16° C on 92% of days between June and September and during August water temperatures often reach 18° to 20° C. In addition to direct stress on fish, warm water contains less dissolved oxygen and dissolved oxygen levels above Pe Ell were recorded below the Department of Ecology's 9.5 mg/L threshold 2 out of 3 years surveyed (2016-2018). The construction of the FRE facility is expected to have significant negative impacts on water quality in the reservoir footprint and downstream reaches. Modeling indicates that water temperatures in the Chehalis River within the proposed reservoir footprint and immediately downstream are expected to increase by up to 2° C, which will likely cross the lethal threshold for salmon and steelhead populations.

Spring Chinook in particular spawn in August and September, when water temperatures are at their highest and elevated temperatures associated with the loss of riparian vegetation are expected to lead to increased pre-spawn mortality. A study by Bowerman et al. (2018) showed that female spring Chinook pre-spawning mortality rates in the upper Willamette River basin, Oregon were consistently greater than 80% when water temperatures exceeded 20° C. Other studies have shown a similar result and indicate that fungal and pathogen loads increase significantly with higher water temperatures and low dissolved oxygen levels (Keefer et al. 2010, Carey et al. 2024). The Spring Chinook population in the upper Chehalis River is already declining and at risk of extirpation in the Chehalis watershed a situation that the construction of the FRE facility is going to make worse.

The operation of the proposed FRE Facility is also expected to increase turbidity in the Chehalis River, with changes in water levels in the temporary reservoir potentially resulting in landslides within the reservoir footprint. The increased sedimentation from such landslides and sedimentation in the Chehalis River would have a significant adverse impact on salmon and steelhead populations, resulting in the loss of viable spawning habitat, smothering eggs and reducing the abundance of macroinvertebrates that juvenile salmon and steelhead depend on while rearing in freshwater. It is clear that the water quality impacts of the FRE facility will have significant adverse effects on salmon and steelhead populations and will greatly accelerate their decline in the Chehalis Basin.

- **Construction:** Construction of the FRE Facility would take place during the summer low flow period, a time when flows, dissolved oxygen and water temperatures are already limiting factors for fish in the upper Chehalis. Construction is expected to use approximately 2 million gallons of water per day on average, further exacerbating water quality impacts on the survival of native fish during the already stressful summer low flow period. In water construction is planned to occur continuously for 10 hours a day over a three-month period across two years and will occur during a period when adult spring Chinook are actively migrating through the upper Chehalis. The disturbance caused by construction, noise, vibration, and water use, etc., will put significant additional pressure on a population that is

already in decline. Based on the integrated model and EDT simulations, spring Chinook populations are expected to decline by between 41% and 68% during construction and similar unacceptable losses are expected for other species and runs during construction.

- **Large Woody Debris and Sediment Transport:** Construction of the FRE facility will have a significant impact on salmon and steelhead habitat by reducing channel forming flows and significantly reducing the recruitment of large woody debris downstream of the facility. Reduced large woody debris recruitment due to removal at the dams' trash collector and removal of vegetation in the reservoir footprint is expected have significant negative impacts on habitat conditions downstream in the Chehalis River. Large woody debris is a key component of salmon and steelhead habitat, adding complexity, contributing to riffle and pool formation and substrate retention, and aiding in building and maintaining spawning gravel and macroinvertebrate communities. Large wood also directly supports slow pool habitats, which provide cool water and refuges for juvenile fish and migrating adults.
- **Spawning Habitat:** Thousands of salmon and steelhead spawn in the areas that would be affected by the FRE facility. Spring Chinook have an extended freshwater holding period from spring through fall and rely extensively on mainstem habitats in the upper Chehalis for spawning. Of the Spring Chinook spawning upstream of the FRE facility, 93% of the redds in recent surveys were located within the proposed temporary reservoir area. Similarly, 87% of Fall Chinook spawning upstream of the FRE facility constructed redds within the reservoir footprint. Coho Salmon also utilize the proposed reservoir site as spawning habitat and 32% of redds upstream of the FRE Facility were located within the reservoir footprint, while 31% of winter steelhead redds upstream of the FRE facility occurred in the area as well. In the case of steelhead and Coho Salmon, recent genetics work indicates that steelhead spawning in tributaries draining the Willapa Hills (South Fork Chehalis and Upper Chehalis (including above the FRE site) represent a genetically distinct population group, with a significant amount of the overall spawning of this group occurring upstream of the FRE location. Similarly, Coho salmon spawning in the upper Chehalis River (upstream of the FRE facility) represent a genetically distinct population.

Clearly the area that would be impacted by the FRE facility is critical spawning habitat for salmonids and the construction of the facility and removal of vegetation in the reservoir footprint is likely to severely impair the habitat. Spring Chinook in particular spawn in August and September, when water temperatures are at their highest and elevated temperatures associated with the loss of riparian vegetation are likely to lead to increase pre-spawn mortality.

- **Juvenile Rearing:** Juvenile Chinook and Coho Salmon and Cutthroat Trout and Rainbow Trout/ Steelhead are abundant in the upper Chehalis River and during the summer months some of the highest densities of juvenile salmonids were located within the reservoir footprint. These juvenile salmonids, and especially steelhead make frequent migrations upstream and downstream of the proposed FRE facility site, in search of rearing habitat to maintain optimal bioenergetic conditions (prey availability, rearing habitat, water temperature and dissolved oxygen levels). Densities of larger juvenile steelhead are consistently higher in high gradient reaches, that feature short pools, and larger substrates. These

habitat types match those within the proposed FRE facility footprint, where riparian vegetation would be removed. Therefore, juvenile salmonids are expected to be highly impacted by the habitat impacts associated with the facility. The ability of the habitat in the FRE footprint to produce larger smolts is also significant, as larger smolts consistently have higher downstream and marine survival rates and as such a reduction habitat associated with larger individuals will have long-term negative consequences for the overall viability of these populations.

- **Migration Survival:** The construction of the proposed FRE Facility is expected to have severe impacts on the survival of salmon and steelhead moving through the site. Table E-10 in the DEIS indicates that adult upstream survival rates are expected to range from just 9% for Coastal Cutthroat, 34% for spring Chinook, 65% for both fall Chinook and Coho Salmon and 69% for winter steelhead during construction and the non-flood retention phases. Even the highest survival rates are extremely low and well below the >90% survival targets that many other dams are required to meet. As such these low survival rates will result in an unacceptable and significant adverse impact on adult salmon and steelhead returns to the upper Chehalis watershed.
- **Abundance:** Populations of salmon and steelhead are expected to face declines over the next 25 to 50 years in the upper Chehalis River due to habitat loss, climate change and a variety of other factors. However, these losses are expected to be substantially worse if the FRE Facility is constructed (see Table E-12 FRE Impacts or E-29 No Action Alternative). For example, spring Chinook Salmon are expected to decline by 51-53% over the next if no action is taken but will be extirpated above Crim Creek with the construction of the facility. Coho are expected to decline by 12-23% if no actions are taken or 96% over the next 25 years if the facility is constructed. Fall Chinook 24% if no actions are taken or 53-57% if the facility is constructed. Winter steelhead 19% if no actions are taken or 54-55% if the facility is constructed. With spring Chinook declining not only in the Chehalis but across much of their range, constructing a project that will result in the extirpation of a population is an unacceptable impact. Additionally, this facility would permanently impair some of the most important habitat remaining in the Chehalis watershed. For example, while the Upper Chehalis only represents 4% of the total habitat in the basin, it accounts for 15% of the steelhead produced in the Chehalis watershed.
- **Pacific Lamprey:** In addition to the impacts to salmon and steelhead populations, Pacific Lamprey, which is a species of greatest conservation need in Washington, and Western Brook/Western River Lamprey both inhabit the upper Chehalis watershed above and below the FRE site. Lamprey ammocetes were found ~50% of survey reaches near or within the proposed project site, suggesting that the area is a key spawning and early rearing habitat. Pacific Lamprey populations have experienced significant declines across the Pacific Northwest, which have been attributed to fish passage at dams, habitat degradation, low flows and high-water temperatures, all of which are impacts expected from the construction of the FRE facility.
- **Fisheries/Recreation:** Steelhead runs are regularly below escapement goals in recent years within the Chehalis basin. Since 2019, this has resulted in on-and-off fisheries closures by Washington Department

of Fish and Wildlife (WDFW) throughout the Chehalis River basin, including the upper river at and above the proposed FRE facility. Salmon runs have suffered the same fate, with seasonal fluctuations based on forecasts and allocations set during the annual North of Falcon season-setting process.

As noted in *Appendix J, Recreation Discipline Report*, according to WDFW 2023b, 0.3% of anglers identified the Chehalis River as a preferred place to fish—a relatively strong percentage, given that most named waterbodies received 0.1% or less in their survey.

While most harvest fishing for steelhead and salmon occurs below the proposed FRE facility and is represented by WDFW's catch record card data in Tables J-6 – 8, catch record card data only accounts for harvested fish and does not capture catch-and-release fishing, something highly valued by TU members.

The area at and above the proposed FRE facility is a popular fishery with catch-and-release steelhead anglers. A portion of this stretch of the river is part of the Weyerhaeuser Pe Ell South Permit Area and the 725 annual permits granting access to this area sell-out instantly each year. And although the proposed FRE facility only accounts for less than 1% of the 95,000 acres within the Weyerhaeuser permit area, the recreational access and value here is disproportionately high.

Since the upper Chehalis River, specifically the area within the proposed FRE facility area, is a significant recreation attraction within the Weyerhaeuser permit area, closure of the river and surrounding lands during construction and through operations would eliminate almost 14 miles of river to fishing, including access to a much larger recreation area used additionally for hunting, boating, and camping (Figure J-5).

As noted in Appendix J, this would have a *Significant Adverse Impact* on recreation, specifically fishing, during the construction and into operations, with most of this area becoming inaccessible or lost to the proposed FRE facility. While the applicant proposes to develop a Recreation Mitigation Plan, to-date they have only produced a technical memorandum in 2021 containing only conceptual improvements and not an actual Recreation Mitigation Plan. Appendix J found that the Conceptual Plan lacked insufficient mitigation and no certainty around maintenance, monitoring, and adaptive management actions to offset the Proposed Action, and were neither clear about the technical feasibility or economic practicability for mitigation.

Therefore, we are supportive of the findings in Appendix J which state: "...the Proposed Action would have significant and unavoidable adverse environmental impacts on recreation," including the elimination of 13.2 miles of highly valued steelhead fishing on the Chehalis River and within the footprint of the proposed FRE facility.

- **Nonnative Fish:** Nonnative warm water fish are increasing in abundance in the lower Chehalis watershed and present a significant predation risk for native species such as salmon and steelhead smolts. With climate change, the impacts of non-native warm water fish species on the native fish community are expected to increase. As the climate warms the habitat in the Chehalis basin is expected to become more ideal for nonnative species, such as bass and as such these species are expected to increase

abundance and distribution. The construction of the FRE facility is likely to add to this issue with water temperatures expected to increase by up to 0.3° C for approximately 14 miles downstream of the facility.

Additional Concerns

- **Cost, Feasibility, and Uncertainty:** The first dam proposal failed due to inadequate planning and siting analyses, as well as concerns from tribes, fishermen, and local leaders. Instead of reassessing their plans and shifting course, flood district leaders have returned with a proposed dam far larger and more expensive than the original. The revised proposed FRE requires a much larger foundation to make it expandable, and to provide for a permanent reservoir. The new design calls for a 45% wider structure, increasing the width from 1550 to 2250ft at the crest; it will increase the required concrete by 65%. There is no plan for how to pay for the dam, but the huge cost would likely fall to Washington taxpayers. Based on the track record of past projects of this size and complexity the \$1.3 - \$1.6 billion cost is grossly underestimated. We can expect it to cost far more. These estimates do not include the expense of necessary additional contractor-supported technical studies, engineering and design, permitting, and direct costs of mitigation. Cost estimates for ongoing operations and maintenance, nor a facility life-cycle cost, are also not included. The construction timing is likely underestimated at four to six years and does not account for any uncertainties or contingencies. This project proposal lacks the necessary details to fully estimate the costs critical for determining the feasibility of implementing and operating a structure of this size. If pursued, it would threaten to egregiously exceed budget projections due to critical cost omissions.
- **Mitigation:** WAC-197-11-660(2)(a and b) states that SEPA decision makers are required to analyze the environmental impacts of mitigation measures when the measures themselves represent a substantive change to the proposal so that the mitigation measures themselves are likely to have significant adverse environmental impacts and the mitigation will not be analyzed in a subsequent environmental document prior to their implementation. The absence of any specificity or critical analysis of the mitigation proposed is a critical failure by DOE to convey to the public the intensity, scale, and cost which would be required to address the significant adverse impacts if the proposed project were to move forward. *“There is uncertainty around whether mitigation is technically feasible or economically practicable.” (Summary, page S-20).*

Summary and Closing Remarks

As mentioned in our introduction, we are extremely sensitive to the need to identify an approach to flood damage reduction in the Chehalis Basin that protects the lives and livelihoods of its residents, while sustaining the critical fish populations that rely on this watershed. Taking no action is unacceptable in our view. **However, Trout Unlimited feels the proposed FRE project poses an unacceptable risk to fish populations in the Chehalis River basin.**

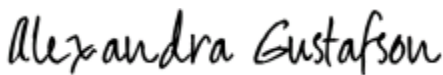
The DEIS makes it very clear to us that the proposed project seeks to address the problem of flooding (albeit partially) at a very significant cost to fish populations. As such, it seems inconsistent with the objectives of the Chehalis Basin Strategy, which is to fix both problems in tandem; codified in RCW 43.21A.732. While acknowledging the years of hard work and expertise that have gone into developing the revised proposal, we strongly urge the Chehalis Basin Board and the Office of the Chehalis Basin to reconsider and re-

analyze local flood damage reduction actions and/or other combined approaches that do not have the inherent unavoidable negative impacts on fish populations associated with the proposed FRE facility. We fully acknowledge that property acquisition is a politically sensitive approach to the problem and will not be possible in many instances. We do believe that moving people out of harm's way (where feasible with willing landowners) is at least part of the solution to meeting the flood damage reduction objectives over the long term in an economically sustainable way.

For these reasons, and those we describe elsewhere in these comments, TU cannot support the proposed project, which very clearly would have significant negative impacts to salmon and steelhead in the basin. To meet the Chehalis Basin Strategy objectives in the near-term and long-term, we strongly support prioritizing projects that provide dual benefits of flood damage reduction and habitat restoration. We seriously urge continued commitment to developing less damaging and more cost-effective alternatives like the Local Actions Non-Dam alternative in conjunction with the Aquatic Species Restoration Plan as viable solutions to flood reduction.

We greatly appreciate your consideration of these comments, and we are happy to answer any questions you may have about our concerns.

Sincerely,



Alex Gustafson
Chehalis Restoration Project Manager
206-572-0778
Alex.Gustafson@tu.org



Penny Mabie
State Chair Washington Council of Trout Unlimited
206-715-4342
wacounciltu@gmail.com