

Key Findings from State Draft Environmental Impact Statement dated Feb. 27, 2020

Key Findings of the Water Analysis (DEIS pg. 39)

In the summer, the temperature of the Chehalis River and streams in the temporary reservoir area would increase up to 5.4°F and up to 9°F in Crim Creek. This is mainly from the removal of trees for construction and operation of the FRE facility which would reduce shade and cover in upland and riparian zones. Dissolved oxygen levels in the temporary reservoir area would decrease.

Temperatures below the FRE facility would increase by 5.4°F. The increase would be less farther from the FRE facility and end 20 miles downstream.

When water is released from the temporary reservoir, it would exceed water quality standards for turbidity. This would also happen during storms when sediment may be resuspended.

These impacts on water temperature, dissolved oxygen, and turbidity would exceed water quality standards and be **significant adverse impacts** on surface water quality. Impacts would be **unavoidable unless** the proposed Surface Water Quality Mitigation Plan meets regulatory requirements and implementation is feasible.

Construction would use up to 150 million gallons of water from the Chehalis River. This would require a water use permit and would be a **moderate to minor adverse impact**. FRE facility operation would have **moderate adverse impacts** on the quantity of surface water upstream.

Key Findings of the Earth Analysis (DEIS pg. 56)

While very unlikely, if ground shaking from a large earthquake damaged the FRE structure at the same time the temporary reservoir is holding water, the impacts would be **significant and unavoidable**. This event would cause loss of human life; loss and damage of public infrastructure; and extensive damage to private properties, livestock, buildings, and the environment.

Changing water levels in the reservoir could result in landslides. Discharge of fine sediments to the Chehalis River could cause turbidity that exceeds water quality standards. This could occur within the temporary reservoir area or downstream of the FRE facility following intense rainstorms and floods after the temporary reservoir is drained. These impacts would affect water quality and fish and aquatic habitat and would be **significant adverse impacts**.

Construction and operation of the FRE would permanently change the river channel at that site, and this would be a **significant adverse impact**. The reduction in peak flows would affect channel-forming processes downstream and would be a **significant adverse impact**. Large woody material would be removed from the river system and be a **significant adverse impact**.

These significant adverse impacts on water quality and aquatic habitat would be **unavoidable unless** the mitigation plans proposed for the Applicant meet regulatory requirements and implementation is feasible.

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Key Findings of the Fish Species and Habitats Analysis (DEIS pg. 70)

Construction and operation of the Proposed Project would have a **significant adverse impact** on aquatic habitat from the headwaters of the Chehalis River to the middle mainstem. The removal of vegetation, increase in temperature, and reduced water quality would negatively affect aquatic habitat and species. Construction and operation would have **significant adverse impacts** on spring-run Chinook salmon, fall-run Chinook salmon, coho salmon, and steelhead from degraded habitat, noise, and fewer fish surviving passage around the FRE facility.

Construction would have a **significant adverse impact** on migratory non-salmon fish such as lamprey and whitefish and a **moderate adverse impact** on resident fish such as minnows and sculpin. Operations would have **significant adverse impacts** on these fish.

Construction and operation would also have a **moderate adverse impact** on Southern Resident killer whales. It would have **significant to moderate adverse impacts** on shellfish and aquatic macroinvertebrates.

These significant impacts on fish and aquatic species and habitat would be **unavoidable unless** the Fish and Aquatic Species and Habitat Management Plan and other mitigation plans meet regulatory requirements and implementation is feasible.

Key Findings of the Wildlife Species and Habitats Analysis (DEIS pg. 86)

The construction of the FRE facility would cause **significant adverse impacts** on wildlife habitat and species from tree removal in the temporary reservoir area. This would cause permanent changes in the 600-acre area of upland, river, and wetland habitat.

Operation of the FRE facility would have **significant adverse impacts** from recurring flooding of the temporary reservoir area. This would cause permanent changes in vegetation in 847 acres and mortality of wildlife that are unable to adapt or relocate.

The FRE construction and operations would increase water temperature in the temporary reservoir area and downstream. Changes to downstream habitat and reductions in the quantity and quality of aquatic habitat would be a **significant adverse impact**.

These significant impacts on wildlife species and habitat would be **unavoidable unless** the Wildlife Species and Habitat Management Plan, Vegetation Management Plan, and other mitigation plans meet regulatory requirements and implementation is feasible.

Cottonwood habitat downstream of the FRE site would be **moderately** affected by the Proposed Project. Wildlife would be **moderately impacted** by decreased water quality conditions.

Key Findings of the Wetland Analysis (DEIS pg. 97)

The construction of the FRE facility and levee would have **significant adverse impacts** on:

- 6.5 acres of wetlands and 214 acres of wetland buffer habitat in the temporary reservoir area.
- 6.6 acres of wetlands at the airport levee and 44.2 acres of wetland buffer
- Stream buffers covering 18.2 miles and 312.8 acres in the temporary reservoir area.

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- 0.3 acre of the Chehalis River, which would be permanently changed along with disturbance or elimination of 10.8 acres of stream buffers for the FRE site.

Operation of the FRE facility would have **significant adverse impacts** on:

- 9.8 acres of wetlands and 303 acres of wetland buffers during reservoir inundation
- 16.8 miles of streams and 25.5 miles and 441.3 acres of stream buffers during and following reservoir inundation

Building the FRE structure will permanently change the Chehalis River, which would be a **significant adverse impact**.

Mitigation under state, federal, and local laws would require no net loss of functions for wetlands, wetland buffers, streams, and stream buffers. These significant impacts on wetlands, wetland buffers, streams, and stream buffers would be **unavoidable unless** mitigation plans meet regulatory requirements and implementation is feasible.

Key Findings of the Tribal Resources Analysis (DEIS pg. 106)

Construction and operation of the Proposed Project could impact tribal resources in the following ways:

- Restricting or reducing access of tribal members to tribal resources
- Altering vegetation in the temporary reservoir and in riparian and flood-affected areas due to periodic inundation, which could affect water, habitat, fish, and wildlife
- Loss of fish habitat within the Chehalis River, including loss of salmon spawning habitat
- Loss of fish that would otherwise be available for tribal harvest, as well as wildlife and plants that are identified as a tribal resource
- Impacts on lamprey and habitat at Rainbow Falls
- Impacts on Southern Resident killer whales due to reduction of food sources
- Impacts on cultural and historic resources important to tribes
- Loss of wildlife and terrestrial habitat that could affect gathering and hunting

Key Findings of the Land Use Analysis (DEIS pg. 113)

The FRE facility and reservoir would be **inconsistent** with forest resource land use and zoning designations, which would be a **significant** impact on land use. The Applicant would need to apply for a rezone or a conditional use permit to remove this inconsistency. For associated forest practice activities, the Applicant will participate in pre-application consultation under the Forest Practices Rules.

The FRE facility would have impacts on habitats and critical areas that would be **inconsistent** with land use policies and regulations to maintain no net loss of ecological function and value for wetlands, critical areas, and shorelines. This would be a **significant** impact on land use. Mitigation is proposed for the Applicant to develop mitigation plans to ensure no net loss of functions. This would remove the inconsistency; however, implementation of the plans may not be feasible. The Airport Levee Changes would be **consistent** with land use designations and plans.

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Key Findings of the Recreation Analysis (DEIS pg. 123)

The Proposed Project would cause **significant adverse impacts** on recreation. 13.8 miles of the Chehalis River would no longer be accessible for kayaking and whitewater rafting, and 12.8 miles of riverbank would no longer be available for riverbank fishing.

The Proposed Project would also have **significant adverse impacts** on fish, which would impact recreational fishing by reducing the number of fish available to be caught.

The temporary reservoir area (847 acres) and FRE facility (34.9 acres) would not be open to the public so this area would no longer be accessible for hunting, camping, and other activities. The loss of access to recreational activities in the temporary reservoir area within the Pe Ell South Permit Area would be a **moderate adverse impact**.

The significant impacts on recreation and fish would be **unavoidable** unless the Recreation Mitigation Plan and other mitigation plans meet regulatory requirements and implementation is feasible. The Proposed Project would reduce flood depths and durations at many downstream recreational facilities but many would still remain flooded. The degree of reduction would vary by flood scenario and location.

Key Findings of the Cultural Analysis (DEIS pg. 129)

Cultural and historic resources are considered through the Section 106 process of the National Historic Preservation Act. For the Proposed Project, this process is being led by the Corps and includes the Chehalis Tribe, the Quinault Indian Nation, other affected tribes, DAHP, and the Applicant. The Section 106 process is still ongoing as of February 2020.

Construction of the FRE facility would affect four recorded archaeological sites and operation of the temporary reservoir could affect nine recorded archaeological sites. Construction of the Airport Levee Changes could affect eight recorded archaeological sites. Traditional Cultural Properties may also be affected.

No determination of eligibility or adverse effects has been made yet for potential impacts from the Proposed Project. As part of the Section 106 process, if there are adverse effects to cultural resources, an MOA would be negotiated among the Corps, DAHP, potentially affected Native American tribes, the Applicant, and other Section 106 parties. The MOA would determine mitigation and treatment requirements through the Section 106 process of the National Historic Preservation Act.

Findings of the Environmental Health and Safety Analysis (DEIS pg. 134)

While very unlikely, if ground shaking from a large earthquake damaged the FRE structure while the temporary reservoir is holding water, the impacts would be **significant and unavoidable**. This would cause loss of human life; loss and damage of public infrastructure; and extensive damage to private properties, livestock, buildings, and the environment.

Construction and operation of the Proposed Project could cause possible spills of oil or hazardous materials and discharge of contaminated water. Required permits and plans would reduce these impacts and these would be **moderate to minor adverse impacts** on environmental health and safety. Emergency services could be affected by construction traffic but the impact would be **minor**.

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Key Findings of the Air Quality and Greenhouse Gas Analysis (DEIS pg. 141)

Total GHG emissions associated with construction and operation of the FRE facility and the Airport Levee Changes would be 123,439 metric tons. The emissions include if trees removed from the temporary reservoir are burned, which would also cause carbon monoxide emissions. The impacts of GHG emissions would be **significant adverse impacts**.

A plan is proposed for the Applicant to mitigate for 100% of the GHG emissions. To reduce carbon monoxide and GHG emissions, a measure is proposed for the trees removed from the reservoir area to be used and not burned.

Emission of criteria and toxic air pollutants from construction and operation and GHG emissions from operation of the Proposed Project would be below federal and state limits and have **minor or no adverse impact**.

Key Findings of the Environmental Justice Analysis (DEIS pg. 146)

While very unlikely, if ground shaking from a large earthquake damaged the FRE structure at the same time the temporary reservoir is holding water, the impacts would be **significant and unavoidable**. This event would cause loss of human life; loss and damage of public infrastructure; and extensive damage to private properties, livestock, buildings, and the environment.

Such an event would have a **significant and disproportionate adverse impact** on environmental justice populations.

Key Findings of the Noise and Vibration Analysis (DEIS pg. 151)

During construction, all noise and vibration impacts on people would be below federal and state limits and would be **minor adverse impacts**.

There would be **no adverse noise or vibration impacts** from operations.

Noise and vibration impacts on fish and wildlife are discussed in Section 5.3 for fish and Section 5.4 for wildlife.

Key Findings of the Public Services and Utilities Analysis (DEIS pg. 156)

The FRE facility and temporary reservoir would have a **significant adverse impact** on the Pe Ell water supply line from Lester Creek. Mitigation is proposed for the Applicant to work with the City of Pe Ell to study if the line would require moving or improvement to avoid damage from construction or inundation and to provide funding.

Potential impacts from utility conflicts or service disruptions during construction of the FRE or airport levee would be temporary and **minor**.

Operations of the FRE would increase electrical use in Lewis County by less than 1%. So the impact on utilities would be **minor**. Airport levee operations would have **no impact** on public services and utilities.

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Key Findings of the Transportation Analysis (DEIS pg. 163)

Construction traffic from the Proposed Project would have a **moderate adverse impact** on roadways in the Pe Ell area and near the Chehalis-Centralia airport. Operational traffic associated with the FRE facility and levee would be **minor**.

The Proposed Project would require several forest roads to be upgraded and widened for construction and operation, but impacts would be **moderate to minor** with required permits.

Mitigation is proposed for roads not covered under Forest Practices Rules at the FRE facility site or in the temporary reservoir area for the Applicant to meet all Forest Practices Act requirements for road building, maintenance, and abandonment.

The Proposed Project would reduce flood depths and durations for roads airports, and railroads, including I-5 and SR 6, but many areas would remain flooded to some level. The amount of reduction would vary by flood scenario and location.

Key Findings of the Visual Quality Analysis (DEIS pg. 177)

The FRE facility would have large-scale construction activities, change the shoreline and upland landscapes, and be a new dominant structure in a previously undeveloped area. But the site is located in an area where public access and views are limited. The site is not visible from any designated scenic routes or recreational trails.

Construction of the FRE facility would have **moderate visual impacts**. Removal of trees in the temporary reservoir footprint would be a **moderate impact** because it would be similar to current logging operations, but cover a larger single area.

There would be **moderate long-term impacts** on visual quality from the FRE facility and temporary reservoir.

Construction and operation of the Airport Levee Changes would have **minor impacts** on visual quality.

Cumulative Impacts (DEIS, Chapter 6)

The Proposed Project, in combination with the activities described above, would contribute to cumulative impacts on water, earth, fish and aquatic species and habitat, wildlife species and habitat, wetlands, land use, recreation, environmental health and safety, air quality, environmental justice, public services and utilities, and transportation.

The Proposed Project, in combination with the activities described above, could contribute to cumulative impacts on tribal resources and cultural resources.