

State Environmental Policy Act Draft Environmental Impact Statement

Proposed Chehalis River Basin Flood Damage Reduction Project



SUMMARY

Floods are getting worse and salmon runs are in serious decline in the Chehalis Basin. Climate change will be driving more frequent and higher flood levels, and steeper declines in fish runs in the future. Communities in the basin are working with the Chehalis Basin Board on a long-term strategy to address these two catastrophes with a wide variety of programs and actions. To address flooding, one part of this strategy is to consider large-scale flood damage reduction actions. The project evaluated in this Draft Environmental Impact Statement (EIS) is one of the proposed actions for consideration.

The Washington Department of Ecology (Ecology) has prepared a Draft EIS for the proposed Chehalis River Basin Flood Damage Reduction project. The Applicant, the Chehalis River Basin Flood Control Zone District, proposes to construct a flood retention facility and associated temporary reservoir near Pe Ell, Washington, on the Chehalis River and make changes to the Chehalis-Centralia Airport levee to reduce flood damage in the Chehalis-Centralia area. The Proposed Project is evaluated in this Draft EIS under the State Environmental Policy Act (SEPA) requirements.

What is in the Draft SEPA EIS?

The Draft EIS:

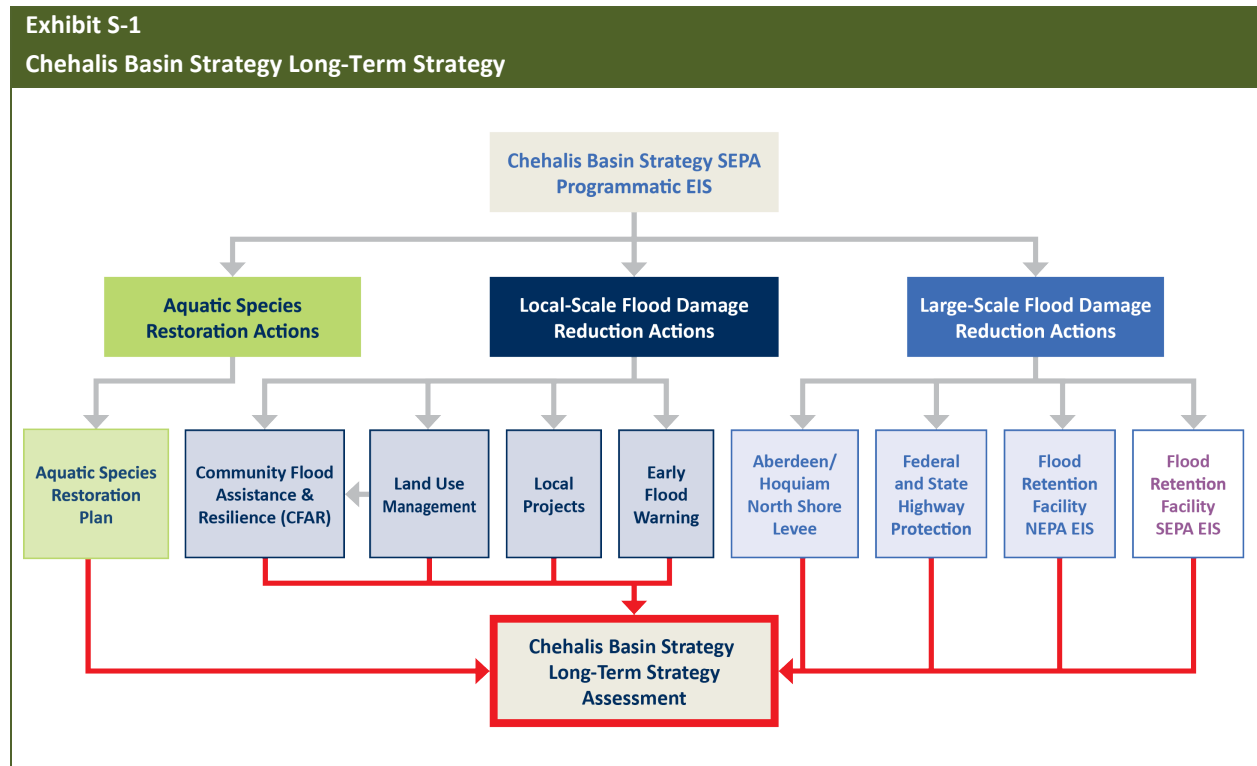
- Describes the Proposed Project and alternatives
- Describes methods, data, and scenarios used for analysis
- Identifies probable significant adverse environmental impacts from the Proposed Project and alternatives
- Proposes mitigation measures for the Applicant to develop and implement

How Does the SEPA EIS Fit in the Chehalis Basin Strategy?

In 2017, a Chehalis Basin Strategy Programmatic EIS evaluated large projects that might be used for the Chehalis Basin Strategy to reduce damages from floods and restore degraded aquatic species habitat. It considered several concepts to reduce flood damage and restore aquatic habitat. The Governor's Work Group, the predecessor to the Chehalis Basin Board, recommended a project-level EIS be completed to further identify the probable significant impacts of a flood retention facility. In October 2017, the Chehalis River Basin Flood Control Zone District's Board of Supervisors decided to become the project sponsor for a proposed flood retention facility.

The Chehalis Basin Board is expected to use the information in the SEPA EIS, along with other information, to inform their recommendations for the long-term Chehalis Basin Strategy to address the social, environmental, economic, and other public health and safety considerations related to both flood

damage reduction and aquatic species habitat restoration objectives. Exhibit S-1 shows how the SEPA EIS fits within the Chehalis Basin Strategy.



What is the Purpose of the SEPA EIS?

Ecology has prepared this Draft EIS using the SEPA requirements in the Washington Administrative Code (WAC) 197-11. Ecology determined the Proposed Project would likely have significant adverse impacts on the environment so an EIS was required. An EIS evaluates the probable significant adverse impacts on the environment from a proposed project and alternatives. It considers the future conditions when the project is proposed to be constructed and operated.

Scoping was held from September 28 to October 29, 2018. Scoping comments were used by Ecology to identify what to study in the EIS.

An EIS does not approve or deny a proposed project. It provides information about the probable significant environmental adverse impacts of a proposal. Local and state agencies will use the SEPA EIS as part of any future permitting decisions related to the project.

How was Climate Change Included in the EIS?

The EIS incorporates climate change projections for precipitation, temperature, flood peak flows, streamflow, and sea level rise throughout the analyses and modeling as part of the future conditions for all scenarios and for all resource areas. Climate change predictions are included in the baseline conditions for the Proposed Project, No Action Alternative, and Local Actions Alternative and are consistent between those. No separate impact findings for climate change or quantitative comparisons between the Proposed Project and alternatives related to climate change are made in this EIS.

Flood Terminology Used in the EIS

Major Flood: Water flow rate of 38,800 cfs or greater at the Grand Mound gage. This would be similar to the 2009 flood. In late-century, this type of flood has a 1 in 4 (25%) chance of occurring in any given year.

Catastrophic Flood: Water flow rate of 75,100 cfs or greater at the Grand Mound gage. This would be similar to the 1996 flood. In late-century, this type of flood has a 1 in 27 (4%) chance of occurring in any given year.

What is the Applicant's Proposed Project?

The Proposed Project includes a flood retention facility and temporary reservoir, referred to as the Flood Retention Expandable (FRE) facility, and changes to the Chehalis-Centralia airport levee (Exhibit S-2).

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. The Airport Levee Changes are intended to improve the levee protection level at the Chehalis-Centralia Airport during catastrophic floods. The purpose of the Proposed Project is to reduce flood damage in the Centralia and Chehalis area. It would not protect all basin communities from all flooding, and it is not designed to stop regular annual flooding from the Chehalis River or smaller floods.

The flood retention facility would store floodwaters in a temporary reservoir during major or larger floods (Exhibit S-3). For analysis in this EIS, based on future conditions for a catastrophic flood, the temporary reservoir would hold 65,810 acre-feet of water and extend 6.4 miles. For normal conditions and for smaller floods, the river and fish would pass through the outlets at the base of the flood retention structure. When a major flood or larger is predicted, the outlet gates would close, and water would be stored in a temporary reservoir. For this EIS, a storage period of up to 35 days was evaluated for a catastrophic flood scenario.

Applicant's Purpose and Objective

Purpose: 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.

Objectives: To reduce flooding coming from the Willapa Hills and improve the levee protection level at the Chehalis-Centralia Airport.

Exhibit S-2

Vicinity Map and EIS Study Area

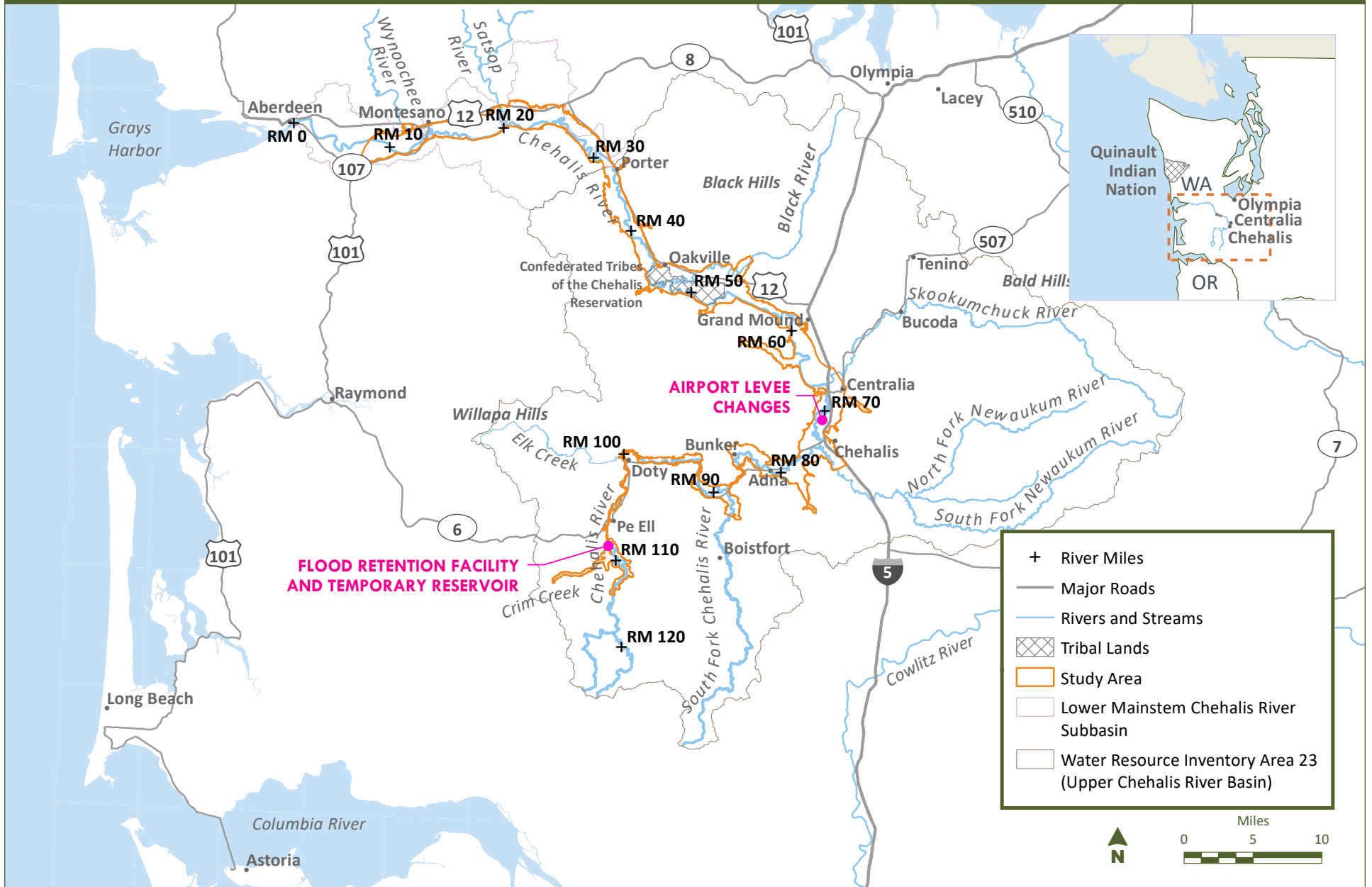
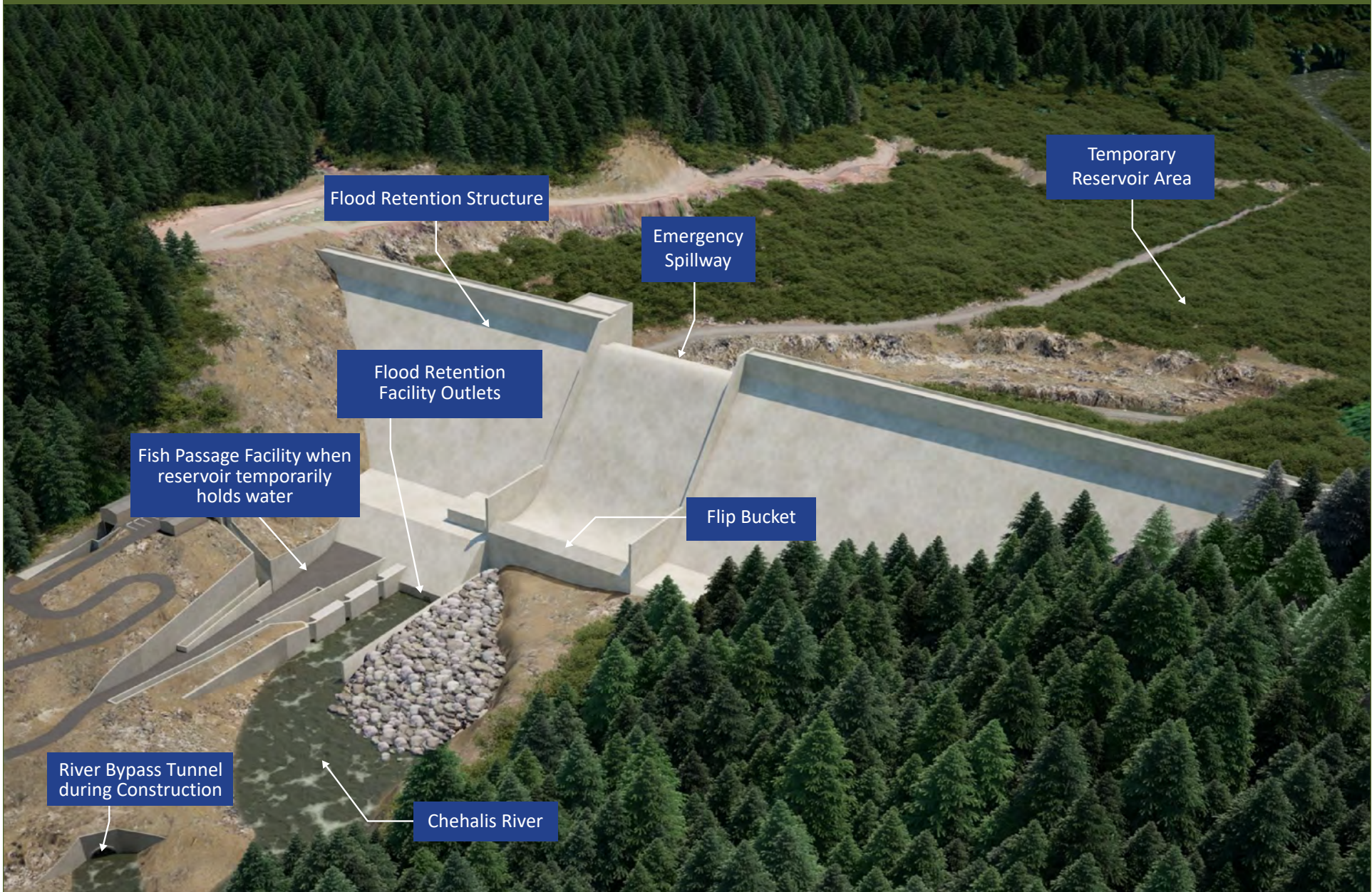


Exhibit S-3

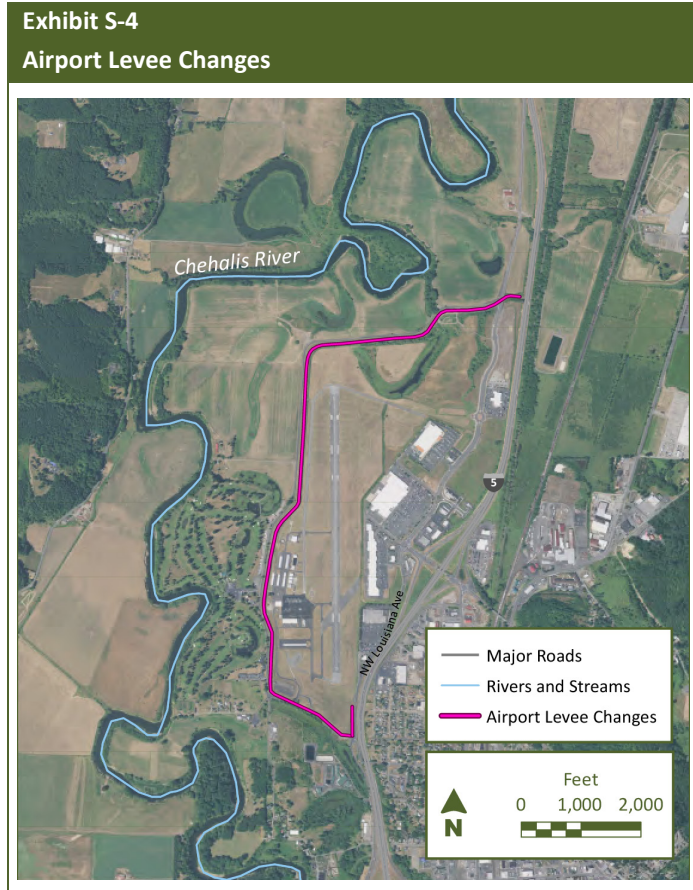
Flood Retention Facility Illustration



Source: HDR 2018

When the reservoir is holding water, fish would have to move upstream using a fish ladder and a trap-and-transport process. During construction, a temporary trap-and-transport process would be used. The Proposed Project also includes constructing quarries to provide rock for building the flood retention structure and roads for access to the quarries and flood retention facility areas.

The Airport Levee Changes include raising the existing airport levee and part of NW Louisiana Avenue (Exhibit S-4). The existing temporary retaining walls and the rock on top of the levee would be removed and 4 to 7 feet would be added to the height of the existing levee. The project would also raise a portion of NW Louisiana Avenue along the southern extent of the airport and replace utility infrastructure.



What Other Alternatives are Evaluated in the EIS?

In addition to the Proposed Project, a Local Actions Alternative and a No Action Alternative were evaluated in the EIS. SEPA regulations require that an EIS analyze reasonable alternatives. In general, this means alternatives that could achieve the project objectives and have lower environmental costs. Over the past decades, many flood hazard projects and concepts have been studied. Ideas such as re-routing or raising I-5, other levees, floodwalls, flood retention facilities, and restoration actions have all been assessed for effectiveness in controlling floods. These alternatives were considered but not further analyzed in this EIS because they had higher environmental costs, were not economically feasible, or did not meet the Proposed Project objectives.

Local Actions Alternative

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.

No Action Alternative

The No Action Alternative represents the most likely future, including the effects of climate change, if the Proposed Project is not constructed. Some large- and small-scale efforts would continue basin-wide as part of the Chehalis Basin Strategy work. Local flood damage reduction efforts would continue based on local planning and regulatory actions.

The No Action Alternative includes projects to reduce flood damage that are in progress, funded, or permitted as of June 2019. These projects include local floodproofing efforts, Chehalis River Basin Flood Authority projects, and some early Chehalis Basin Strategy and Aquatic Species Restoration Plan projects. The No Action Alternative does not include other possible future restoration, mitigation, or adaptation action that may be taken. The EIS shows that substantial flood damage risks will continue to affect people, the environment, transportation, and structures. The EIS also shows that reductions in the number of salmon and steelhead from climate change will bring population abundances below 70% of historical abundance in the study area (a target in other Washington State salmon recovery plans), but to a lesser degree than the reductions from the Proposed Project.

What Geographic Area is Analyzed in the EIS?

The Chehalis Basin is primarily in Lewis County and Grays Harbor County and includes portions of Thurston, Pacific, Cowlitz, Mason, and Wahkiakum counties. The mainstem Chehalis River starts in the central Willapa Hills above Pe Ell in Lewis County and flows approximately 120 miles north-northwesterly to the Grays Harbor estuary and the Pacific Ocean. The flood retention facility would be located on property currently owned by Weyerhaeuser and the Panesko Tree Farm and used for commercial forest. The site is south of State Route 6 in Lewis County, on the mainstem Chehalis River at approximately river mile (RM) 108, about 1 mile south of Pe Ell. The Applicant is also proposing to raise the existing Chehalis-Centralia Airport levee and part of NW Louisiana Avenue. The locations of the Proposed Project are shown in Exhibit S-2.

What Resources Would Be Impacted by the Proposed Project?

Construction and operation of the Proposed Project would have significant impacts on fish, wildlife, aquatic and terrestrial habitat, recreation, earth, water, air, and wetlands. These impacts would occur in the flood retention facility and temporary reservoir area and downstream of the facility to the confluence with the South Fork Chehalis River. This includes significant impacts on spring-run and fall-run Chinook salmon, coho salmon, steelhead, lamprey, mountain whitefish, freshwater mussels, amphibians, and macroinvertebrates. Some of the amphibians are listed or candidates for listing in Washington State as endangered, threatened, or sensitive.

Modeling was done to identify impacts on salmon and steelhead in two areas of the Chehalis Basin near the proposed flood retention facility. The modeling predicts declining numbers of salmon and steelhead into the future with the Proposed Project. The subbasin upstream of Crim Creek supports populations of salmon and steelhead that are genetically unique from salmon and steelhead in other subbasins of the Chehalis River Basin. The modeling predicts that the Proposed Project would reduce the genetic diversity within and among salmon populations of each species across the Chehalis Basin. Spring-run Chinook spawn in three primary areas within the Chehalis Basin. The Proposed Project would significantly affect one of these three important spawning areas. Reductions in the number of salmon and steelhead in the late-century from the Proposed Project are significant because they bring population abundances even further below 70% of historical abundance than the reductions predicted from climate change alone. The Proposed Project could reduce future restoration options in the subbasins above and below Crim Creek and within the larger basin for the fish species and habitats they rely on.

Significant downstream impacts of the flood retention facility include possible impacts on the Town of Pe Ell's water supply, environmental health and safety, environmental justice populations, and wetlands from the Airport Levee Changes. In addition, the Proposed Project would eliminate peak channel-forming flows downstream, reduce input of large woody material, and significantly affect habitat.

These significant impacts are considered unavoidable impacts unless mitigation is technically feasible and economically practicable. The next page discusses the proposed mitigation in more detail. Significant adverse environmental impacts and proposed mitigation are described in Exhibits S-5 and S-6.

Tribal resources and cultural resources would also be impacted by the Proposed Project. Determinations of impacts and mitigation for these resources are made in government-to-government consultation and through the federal National Historic Preservation Act Section 106 process, which is currently in progress.

Environmental impacts from the Proposed Project downstream past Centralia and Chehalis would be moderate to minor.

Impact Analysis Considerations

Timeframes

The Applicant proposes to construct the Proposed Project from 2025 to 2030, if permitted. The operational period analyzed was from 2030 to 2080. It was divided into two timeframes for impact analysis:

- **Mid-century** = 2030 to 2060
- **Late-century** = 2060 to 2080

Scenarios

- **Major flood:** A flood when water flow is 38,800 cfs or more at the Grand Mound gage, similar to the 2009 flood
- **Catastrophic flood:** A flood when water flow is 75,100 cfs at the Grand Mound gage, similar to the 1996 flood
- **Recurring flood:** A major flood or greater that occurs in 3 consecutive years

How does the Proposed Project Affect Flooding?

Analysis shows the Proposed Project reduces flood duration and extents for many locations downstream of the facility. The amount of change varies based on the scenario and location and is shown in a mapbook available in Chapter 10 of the EIS. For the catastrophic flood scenario in the late-century, much of the land in the study area from Pe Ell to just upstream of the confluence of the South Fork Chehalis River would be no longer inundated, with flood depths being reduced by 1 inch to more than 8 feet lower than without the Proposed Project. This area mainly consists of rural and agricultural lands. In the City of Centralia, some residential areas would be protected. In the City of Chehalis, flood levels for much of the study area would be reduced by 3 to 5 feet. The Chehalis area would still experience flooding, and some areas would still have more than 10 feet of inundation during catastrophic flood events in the late-century. Downstream of Centralia, the modeled reduction in inundation during a late-century catastrophic flood scenario would be less than 3 feet with most of the area still inundated.

The EIS found that in the late-century, 2,955 existing structures could be inundated during a catastrophic flood in late-century. The Proposed Project would eliminate flooding for 1,280 of these structures. In the late-century, the Proposed Project reduces the flood levels at the Chehalis-Centralia airport by 50% for a catastrophic flood and reduces the duration of flooding from 60 hours to 40 hours. For I-5, six of seven interchanges that were analyzed would be inundated for less than 24 hours under the late-century catastrophic flood scenario. One would remain flooded for 48 hours. Actual freeway closure times would vary based on the Washington State Department of Transportation's need to prioritize the safety of the traveling public, which requires additional preparation and recovery time and involves closing approximately 20 miles of I-5 whenever any portion within that stretch is underwater.

What Mitigation is Proposed for the Applicant to Implement?

The SEPA EIS identifies proposed mitigation measures for the Applicant to develop and implement. Mitigation is intended to reduce and compensate for impacts on the environment from construction and operation of the Proposed Project. These mitigation measures would be implemented with, or as part of, the required permits, plans, and approvals.

WAC 197-11-440 states the EIS may discuss the technical feasibility and economic practicability of mitigation if there is a concern that the measure is capable of being accomplished. The decision if mitigation is feasible and meets the regulatory requirements would be determined during the permitting processes by the permitting agencies. In some cases, additional information on the project design would be required which is not available at this early stage of design.

Proposed mitigation includes developing and implementing mitigation and management plans for various resources, including vegetation, wetlands and wetland buffers, streams and stream buffers, fish and aquatic species and habitat, wildlife species and habitat, riparian habitat, surface water quality, recreation, greenhouse gas emissions, and large woody material. These plans would need to be approved by agencies and would be developed in conjunction with each other.

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Significant Impacts from the Proposed Project

The Proposed Project would have probable significant adverse environmental impacts from both construction and operations. These significant impacts would occur in the upstream areas of the Chehalis Basin. The environmental impacts downstream of Chehalis and Centralia would be moderate to minor. A summary of key impacts is presented in this map.

Impacts in Flood Retention Facility and Temporary Reservoir Area:

FISH AND WILDLIFE HABITAT

Construction and operation of the flood retention facility would significantly degrade habitat. Water temperatures would increase by up to 9°F and habitat would be removed to build the retention structure. 90% of the trees in the 600-acre temporary reservoir area would be removed during construction. 847 acres would be temporarily flooded when the reservoir holds water, killing trees and vegetation.

FISH SPECIES

Construction and operation of the flood retention facility would degrade habitat, increase water temperatures, eliminate spawning areas, and reduce fish passage survivability. This would have significant impacts on spring-run and fall-run Chinook salmon, coho salmon, steelhead, other native fish like lamprey, and freshwater mussels.

WILDLIFE SPECIES

Habitat for wildlife would be degraded as described above. This, along with noise and reduced nesting and breeding areas, would significantly affect wildlife like amphibians and marbled murrelets.

WATER

Temperature increases of up to 9°F and decreased dissolved oxygen would affect Chehalis River water quality from construction and operation of the flood retention facility.

WETLANDS

11 acres of wetlands, 333 acres of wetland buffers, 17 miles of streams, 441 acres of stream buffers, and 0.3 acre of the Chehalis River would be permanently eliminated from the construction of the flood retention facility, road development, and removal of large trees and inundation in the reservoir area.

RECREATION

There would be a permanent loss of access to 14 miles of kayaking and 13 miles of recreational riverbank fishing.

LAND USE

Land use changes would be inconsistent with current land use and zoning designations.

AIR QUALITY AND GREENHOUSE GASES

Construction and operation would cause over 123,000 metric tons of greenhouse gas emissions.

FLOOD RETENTION FACILITY

Maximum Extent of Temporary Reservoir

Impacts Near Pe Ell:

PUBLIC SERVICES AND UTILITIES

A water supply line for Pe Ell's water system may be affected by construction of the FRE facility and the line could require relocation or improvement.

Impacts Between the Flood Retention Facility and the South Fork Chehalis River:

ENVIRONMENTAL HEALTH AND SAFETY

While extremely unlikely, if ground shaking from an earthquake causes a breach of the flood retention structure at the same time the reservoir is holding water, it would cause significant impacts on people, infrastructure, and the environment downstream.

WATER

Temperature increases of up to 5.4°F and decreased dissolved oxygen would affect Chehalis River water quality for about 20 miles downstream of the facility. Turbidity would increase when water is released from the temporary reservoir and after storms.

FISH HABITAT

Changes in the movement of sediment and removal of part of the river channel for construction and during reservoir inundation would significantly affect fish habitat. Operation of the flood retention facility would eliminate peak channel-forming flows and remove large woody material, reducing the habitat downstream.

FISH SPECIES

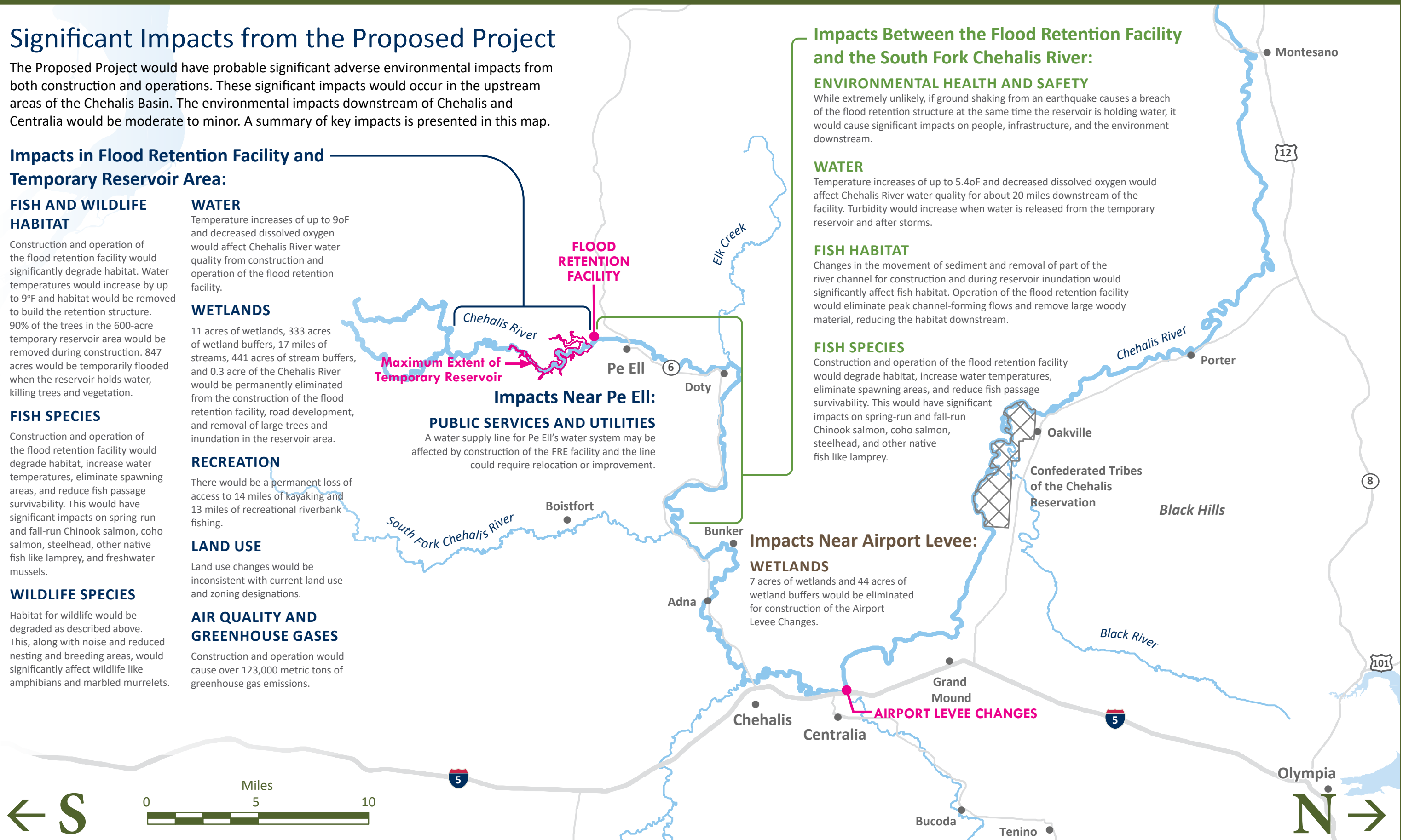
Construction and operation of the flood retention facility would degrade habitat, increase water temperatures, eliminate spawning areas, and reduce fish passage survivability. This would have significant impacts on spring-run and fall-run Chinook salmon, coho salmon, steelhead, and other native fish like lamprey.

Impacts Near Airport Levee:

WETLANDS

7 acres of wetlands and 44 acres of wetland buffers would be eliminated for construction of the Airport Levee Changes.

AIRPORT LEVEE CHANGES



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Significant Adverse Environmental Impacts and Proposed Mitigation Summary

Exhibit S-6 provides a summary of probable significant impacts from construction and operation of the Proposed Project for each environmental resource that was analyzed. No significant impacts were identified for Noise and Vibration, Transportation, or Visual Resources and these are not included in the summary.

Exhibit S-6

Summary of Significant Impacts and Proposed Mitigation for the Proposed Project (in alphabetical order by resource)

| ELEMENT OF THE ENVIRONMENT | IMPACT FINDING | DESCRIPTION | PROPOSED MITIGATION MEASURES |
|---|--|---|--|
| Air Quality and Greenhouse Gases | Significant | Combined greenhouse gas (GHG) emissions from construction and operation would be 123,439 metric tons. | <ul style="list-style-type: none"> • Prepare a GHG Mitigation Plan to reduce 100% of emissions from construction and operation. • Ensure timber removed from the temporary reservoir area will not be burned. |
| Cultural Resources | Findings of eligibility and adverse effects are determined during the ongoing federal Section 106 process | Flood retention facility construction could affect four archaeological sites and reservoir inundation could affect nine sites. Airport Levee Changes could affect eight archaeological sites. Traditional and Cultural Properties may also be affected. | <ul style="list-style-type: none"> • Mitigation and treatment requirements would be determined through the current federal consultation under the National Historic Preservation Act Section 106 process and documented in a Memorandum of Agreement among the Section 106 parties. |
| Earth (also Wetlands) | Significant and unavoidable, unless mitigation is feasible | Permanent alteration of 0.32 acre of river channel at the flood retention facility site. Changes to sediment transport and substrate in the river channel within the temporary reservoir. | Develop and implement: <ul style="list-style-type: none"> • Fish and Aquatic Species and Habitat Mitigation Plan • Riparian Habitat Mitigation Plan • Stream and Stream Buffer Mitigation Plan • Surface Water Quality Mitigation Plan • Vegetation Management Plan |
| Environmental Health and Safety (also Earth) | Significant and unavoidable | The likelihood of a flood retention facility failure from ground shaking during a large earthquake at the same time the reservoir is storing water is extremely low, but consequences to people, buildings, infrastructure, and the environment would be significant. | <ul style="list-style-type: none"> • Develop and implement a breach flood warning system for Pe Ell, Centralia, and Chehalis. • Provide training to local emergency response officials for dam breach scenarios. |

| ELEMENT OF THE ENVIRONMENT | IMPACT FINDING | DESCRIPTION | PROPOSED MITIGATION MEASURES |
|---|--|--|---|
| Environmental Justice | Significant and disproportionate | There would be disproportionate impacts on environmental justice populations in the event of a flood retention facility failure from groundshaking during a large earthquake while the reservoir is holding water. | <ul style="list-style-type: none"> • Develop an inclusive public involvement strategy tailored to the communities who may be affected. |
| Fish, Aquatic Species and Habitat in the: Headwaters and Upper Chehalis River (including the flood retention facility and temporary reservoir areas) and Upper to Middle Chehalis River (downstream of flood retention facility) (also Recreation, Earth, Wildlife Species and Habitat) | Significant and unavoidable, unless mitigation is feasible for: <ul style="list-style-type: none"> • Aquatic habitat in the reservoir area and from the facility site to the confluence with the South Fork Chehalis River • Spring-run and fall-run Chinook salmon, coho salmon, and steelhead in the Above Crim Creek and Rainbow Falls to Crim Creek subbasins • Non-salmon native fish, including lamprey • Migratory non-salmon native fish, including minnows and sculpin • Freshwater mussels • Macroinvertebrates | Impacts on fish, aquatic species, and aquatic habitat function from: <ul style="list-style-type: none"> • Temporary dewatering of the river and in-water work during construction, • Reduced fish passage survival • Permanent elimination of 0.32 acre of aquatic habitat • Degraded riparian function • Reduced nutrient availability • Removal of non-flood tolerant trees in 600 acres of the temporary reservoir area during construction • Recurring inundation events affecting up to 847 acres of vegetation during operations • Reduction in channel-forming flows and large woody material downstream of the facility site • Water temperature increases and decreases in dissolved oxygen from loss of vegetation in the temporary reservoir • Increased turbidity downstream from reservoir releases | Develop and implement: <ul style="list-style-type: none"> • Fish and Aquatic Species and Habitat Plan • Large Woody Material Management Plan • Riparian Habitat Mitigation Plan • Stream and Stream Buffer Mitigation Plan • Surface Water Quality Mitigation Plan • Vegetation Management Plan • Wetland and Wetland Buffer Mitigation Plan • Wildlife Species and Habitat Management Plan |
| Land Use | Significant and unavoidable, unless mitigation is feasible | Impacts on shoreline ecological functions at the flood retention facility and temporary reservoir area from vegetation removal and inundation events. This would be inconsistent with land use plans, policies, and regulations to maintain no net loss of ecological | Rezone or convert land use under conditional use permit. Develop and implement: <ul style="list-style-type: none"> • Fish and Aquatic Species and Habitat Plan • Riparian Habitat Mitigation Plan |

| ELEMENT OF THE ENVIRONMENT | IMPACT FINDING | DESCRIPTION | PROPOSED MITIGATION MEASURES |
|--|---|--|---|
| | | function. Change from commercial forestry would be inconsistent with the current Forest Resource land use and zoning designations. | <ul style="list-style-type: none"> • Stream and Stream Buffer Mitigation Plan • Surface Water Quality Mitigation Plan • Vegetation Management Plan • Wetland and Wetland Buffer Mitigation Plan • Wildlife Species and Habitat Management Plan |
| Public Services and Utilities (also Water) | Significant | A water supply line for the Town of Pe Ell’s water system would be affected by the flood retention facility construction and temporary reservoir inundation, and the line could require relocation or improvement. | <ul style="list-style-type: none"> • Conduct a study with the Town of Pe Ell to determine if the water supply line needs to be redesigned to ensure that it can withstand inundation or needs to be relocated, and, if so, develop a cost estimate and provide funding. |
| Recreation | Significant and unavoidable, unless mitigation is feasible | Permanent loss of use of 13.8 miles of the Chehalis River for kayaking and whitewater boating and 12.8 miles of riverbank for recreational fishing. The reduction of fish from the Chehalis River headwaters to Rainbow Falls would impact recreational fishing by reducing the number of fish available to be caught. | Develop and implement: <ul style="list-style-type: none"> • Fish and Aquatic Species and Habitat Plan • Recreation Mitigation Plan |
| Tribal Resources | Determined during government-to-government consultations | Significant impacts on fish and aquatic species, wildlife species, and aquatic and wildlife habitat during construction and operation of the flood retention facility or the Airport Levee Changes could affect tribal resources. | <ul style="list-style-type: none"> • Determined during government-to-government consultations |
| Water (also Earth, Fish, Aquatic Species and Habitat) | Significant and unavoidable, unless mitigation is feasible | <ul style="list-style-type: none"> • Increased water temperatures of 2°C to 3°C (3.6°F to 5.4°F) in the Chehalis River and in Crim Creek by 2°C to 5°C (3.6°F to 9°F) • Decreased dissolved oxygen in the temporary reservoir area and downstream about 20 miles from loss of riparian shading • Exceedances of turbidity when the temporary reservoir is inundated and water released, and during subsequent storms when sediment may be resuspended | Develop and implement: <ul style="list-style-type: none"> • Surface Water Quality Mitigation Plan |

| ELEMENT OF THE ENVIRONMENT | IMPACT FINDING | DESCRIPTION | PROPOSED MITIGATION MEASURES |
|--------------------------------------|---|--|---|
| Wetlands | Significant and unavoidable, unless mitigation is feasible | <ul style="list-style-type: none"> • Flood retention facility construction and operation would eliminate 11 acres of wetlands, 333 acres of wetland buffer habitats, 17 miles of streams, and 441 acres of stream buffers due to removal of trees and inundation of the reservoir • Airport levee changes would eliminate 7 acres of wetlands and 44 acres of wetland buffers | Develop and implement: <ul style="list-style-type: none"> • Fish and Aquatic Species and Habitat Plan • Riparian Habitat Mitigation Plan • Stream and Stream Buffer Mitigation Plan • Surface Water Quality Mitigation Plan • Vegetation Management Plan • Wetland and Wetland Buffer Mitigation Plan |
| Wildlife Species and Habitats | Significant and unavoidable, unless mitigation is feasible | Elimination of upland, wetland, and riparian habitat and impacts on wildlife species from: <ul style="list-style-type: none"> • Removal of 90% of tree cover in the 600-acre temporary reservoir area during construction of the flood retention facility • Tree removal on 847 acres from inundation of the reservoir and periodic tree removal • Inundation of up to 847 acres in the temporary reservoir area • Decreased habitat functions • Increased water temperatures • Invasive species colonization • Noise during construction • Mortality of species unable to move during inundation of the reservoir, like amphibians or nesting birds • Mortality of species due to loss of habitat • Decreased distribution of native species and increased habitat for non-native species | Develop and implement: <ul style="list-style-type: none"> • Fish and Aquatic Species and Habitat Plan • Large Woody Material Management Plan • Riparian Habitat Mitigation Plan • Stream and Stream Buffer Mitigation Plan • Surface Water Quality Mitigation Plan • Vegetation Management Plan • Wetland and Wetland Buffer Mitigation Plan • Wildlife Species and Habitat Management Plan |

What are the Areas of Uncertainty and Controversy?

There is uncertainty if the proposed mitigation is technically feasible or economically practicable; therefore, the Proposed Action would have **significant and unavoidable** adverse environmental impacts on the environment as shown in Exhibit S-6. The Applicant may provide mitigation plans. If the agencies determine the plans meet regulatory requirements and the implementation is feasible, then the impacts would be addressed as part of the permitting processes.

How Do I Provide Comments on the Draft EIS?

Comments on this Draft EIS will be accepted during a 61-day comment period (February 27 through April 27, 2020). Comments may be submitted the following ways:

By mail:

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

Online: using the comment form on the website at chehalisbasinstrategy.com/eis/comment-form

In person at a public hearing, verbally or in writing:

- Tuesday, March 31, from 5:00 p.m. to 8:30 p.m.
Centralia College – TransAlta Commons
600 Centralia College Boulevard
Centralia, WA 98531
- Thursday, April 2, from 5:00 p.m. to 8:30 p.m.
Montesano Jr. Sr. High School – Commons Room
303 Church Street North
Montesano, WA 98563

Comments received on the Draft EIS during the comment period will be compiled and considered by Ecology and substantive comments will be reviewed for preparation of a Final EIS. Ecology anticipates the Final EIS will be published within a year from the release of the Draft EIS, depending on the number and substance of comments and any need for additional work. The Final EIS may be used by local and state agencies to inform permit decisions for the Proposed Project. Seven days following publication of the Final EIS, permits for the Proposed Project may be issued based on the regulatory requirements for each permit process. If permitted, construction of the Proposed Project could begin in 2025.

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