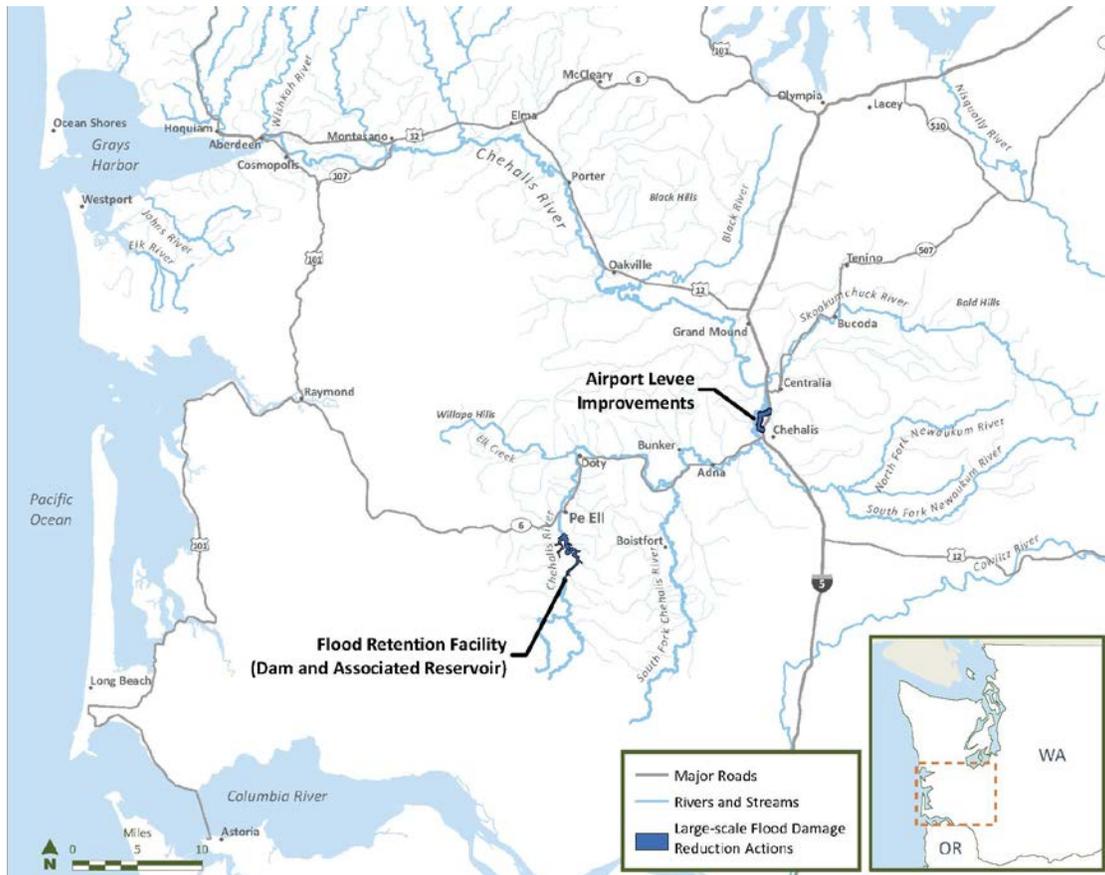


## Chehalis River Basin Flood Damage Reduction Project

**Figure 1**  
**Vicinity Map**



The proposed facilities are intended to substantially reduce damages during a major or catastrophic flood. The amount of flood risk reduction will vary throughout the basin. Previous studies and research have predicted that the project will:

1. Reduce of the closure due to overtopping of Interstate 5 freeway to 24 hours or less during a 100-year flood event.
2. Reduce damage from major flooding along the Chehalis River main stem. Hydraulic analysis shows that 100-year flood peak levels will be lowered by 10 feet or more at the Doty gauge, and by 1 foot or more at the Mellen Street gauge in Centralia. This level of reduction in flood levels

translates to a substantial decrease in the severity of flooding on more than 4,000 acres as well as substantial relief from the more than \$900 million of economic impacts estimated to occur during a major flood event.

3. Provide future leaders in the Chehalis Basin the flexibility to address additional increases in peak flood levels and decreases in stream flow during summer months through an adaptable design approach.

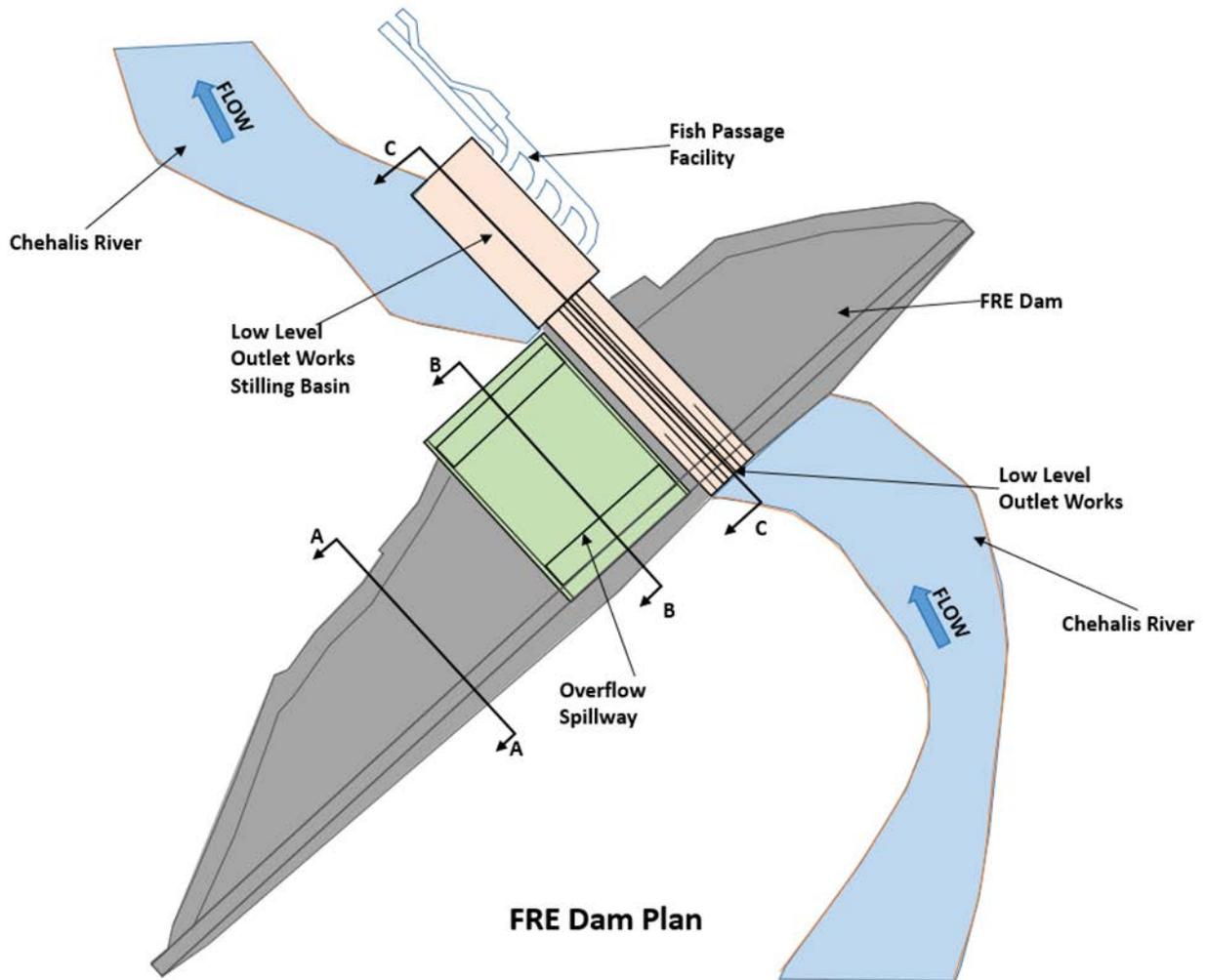
The project would have significant reductions to flood risk, however it will not protect communities from all flooding, nor is it designed to stop regular, small-scale annual flooding from the Chehalis River. Flood protection provided by the facilities would not result in immediate changes to Federal Emergency Management Agency (FEMA) flood hazard mapping; however, FEMA mapping updates would continue to occur. This large scale flood project is also not intended to supplant the need for smaller local flooding projects, such as flood proofing or farm pads. Projects constructed within the existing floodplain will continue to follow floodplain development regulations.

The temporary reservoir associated with the dam would be present only during major flooding. The water in the reservoir would be released as soon as it is safe to do so after the flood event, and is therefore considered to be temporary. At all other times, the river will flow through the dam's low level outlet works at its normal rate of flow and volume and allow fish passage both upstream and downstream. This system will achieve dual goals of flood damage reduction benefit while having minimal, if any, impacts on normal streamflow in the Chehalis River.

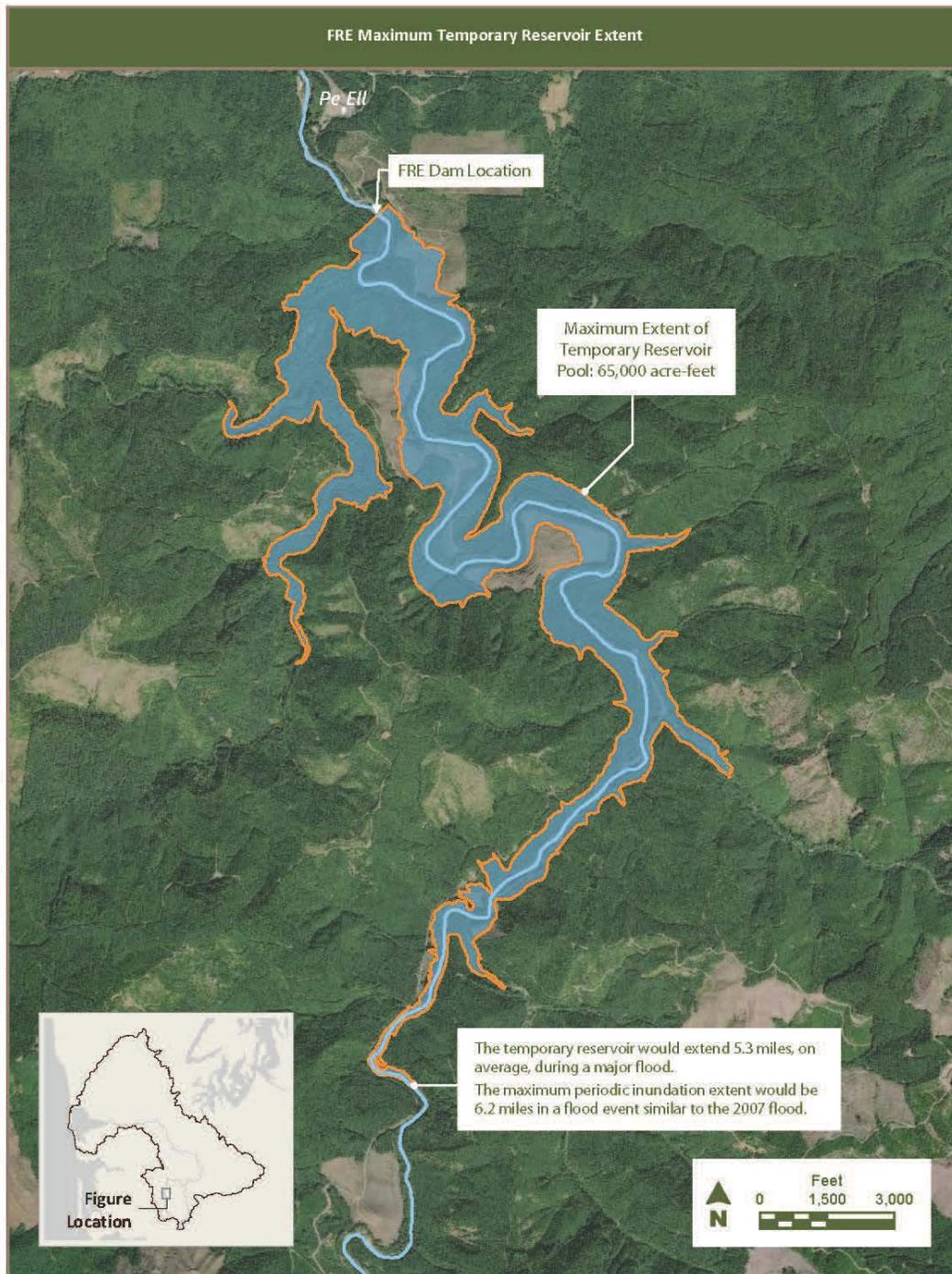
A "major flood" along the Chehalis River is the level at which flooding in Lewis County results in road closures and floodwaters encroach on some homes and businesses. In addition, major flooding in Thurston County results in the inundation of farmlands and roads, including U.S. 12. The threshold for a major flood is defined as 38,800 cubic feet per second (cfs) at the Grand Mound gage located along the Chehalis River in Thurston County. This flood has about a 15% probability of occurrence in any year (or a 7-year recurrence interval). Major floods include events greater than 38,800 cfs with a lower frequency of occurrence such as 10-year, 100-year, and 500-year floods (10%, 1%, and 0.02% probability of occurrence in any year).

The type of dam that has been selected for EIS analysis is known as a Flood Retention Expandable (FRE) facility, which consists of a dam with a temporary reservoir. The FRE dam would temporarily retain water in the event a major flood as previously described. The river would flow normally during regular conditions or in smaller floods. The dam would only transition to flood retention operations during a major flood. Specific flow release operations would depend on inflow and the need to hold water to relieve downstream flooding as flood waters recede.

# FRE Dam Plan View



## FRE Temporary Reservoir Extent



## **Project Description - Airport Levee Improvements**

The Airport Levee Improvements include raising the existing levee around the Centralia-Chehalis Airport as well as a portion of Airport Road, to provide protection from 100-year flood levels for the Chehalis-Centralia Airport, local businesses, and a portion of I-5 (see Figure 6). This would elevate the height of the existing 9,511-foot-long levee by 4 to 7 feet. The existing levee would be raised by adding earthen materials or floodwalls on top. There is no proposed change to the extent or location of the levee unless it is raised by 7 feet. This would affect the northwest corner of the levee and could require “bumping” the levee out to avoid interference with the flight path of the airport runway.

### **AIRPORT LEVEE**

