



# Technical Memorandum

Date: Wednesday, June 29, 2022

Project: Chehalis River Basin Flood Damage Reduction Project

To: Chehalis Basin Flood Control Zone District

From: Matt Procriv, PE

Subject: FRE Facility – Truck Trip Summary During and Post Construction

The Draft Environmental Impact Statements (EISs) prepared by the Washington State Department of Ecology (Ecology; pursuant to the State Environmental Policy Act) and the U.S. Army Corps of Engineers (USACE; pursuant to the National Environmental Policy Act) evaluate anticipated impacts associated with construction and operation of a proposed Flood Retention Only - Expandable (FRE) facility (i.e., the Chehalis River Basin Flood Damage Reduction Project [proposed project]) in the Chehalis Basin, Washington State. The Chehalis Basin Flood Control Zone District (District) is the project proponent. To inform development of the Final EISs, Ecology requested a summary of the information regarding the estimates for the number of truck trips for both the construction phase and permanent (operating) FRE facility. This technical memorandum summarizes the truck trip estimates provided in previously published documents.

## 1.0 Construction Phase Truck Trips

The number of truck trips estimated for construction of the FRE facility, including operation of the upstream trap and transport temporary fish passage facility, is summarized in Table 1. Full citations for each citation noted in the table are provided at the end of this memorandum.

The referenced documents contain the assumptions used to determine the number of truck trips (Table 1). The rough order of magnitude estimates summarized herein reflect the current conceptual level of design for the FRE facility and assumptions regarding the requirements for the temporary construction facilities (Table 1). Further FRE facility design, coordination with permitting agencies, and input from construction contractors will be used to refine the number of truck trips as the design develops.



**Table 1. Construction Phase Rough Order of Magnitude Truck Trip Estimates**

Description of Construction Phase Activity	Number of Truck Trips	Citation
<b>TOTAL</b>	<b>210,420</b>	<b>n/a</b>
<b>Staging Areas</b>		
Offices, Receiving, Security	260	Temp Construction Facilities Memo <sup>i</sup>
Initial S2 Surfacing Material	1,230	Temp Construction Facilities Memo <sup>i</sup>
Embankment Material Production Operation of the FRE Structure	4,170	Temp Construction Facilities Memo <sup>i</sup>
Structure and Dam Staging	650	Temp Construction Facilities Memo <sup>i</sup>
Supplemental Structure and Dam Staging	510	Temp Construction Facilities Memo <sup>i</sup>
Downstream Portal Staging	314	Temp Construction Facilities Memo <sup>i</sup>
Spoil Area	340	Temp Construction Facilities Memo <sup>i</sup>
<b>Quarry Development</b>		
Base Truck Loads	52,000	Quarry Memo <sup>ii</sup>
<b>Access Road Construction</b>		
Production of RCC	40,500	Access Road Memo <sup>iii</sup>
Road FR 1000 Improvements (12 miles)	2,700	Access Road Memo <sup>iii</sup>
Unimproved Roads Upgrades (50 miles)	52,000	Access Road Memo <sup>iii</sup>
Unimproved Roads Resurfacing (50 miles)	11,200	Access Road Memo <sup>iii</sup>
<b>FRE Structure and CHTR Facility Construction</b>		
Construction Mobilization	250	Temp Construction Facilities Memo <sup>i</sup>
Concrete Sand for Conventional Concrete (from commercial supply)	1,100	Temp Construction Facilities Memo <sup>i</sup>
Concrete Sand for RCC (from quarry)	23,500	Temp Construction Facilities Memo <sup>i</sup>
Bulk Cement	11,000	Temp Construction Facilities Memo <sup>i</sup>
Fly Ash	2,800	Temp Construction Facilities Memo <sup>i</sup>
Rebar	166	Temp Construction Facilities Memo <sup>i</sup>
Gates	30	Temp Construction Facilities Memo <sup>i</sup>
Miscellaneous Metals	40	Temp Construction Facilities Memo <sup>i</sup>
Diversion Tunnel Excavation	1,700	Temp Construction Facilities Memo <sup>i</sup>
Clearing	3,600	Temp Construction Facilities Memo <sup>i</sup>
<b>Temporary Fish Passage Operation</b>		
Fish Transport	360	Temp Construction Facilities Memo <sup>i</sup>

## 2.0 Operation Phase Truck Trips

The District anticipates that truck trips required during the operation phase of the proposed project will be limited and primarily associated with routine inspection, facility maintenance, debris management, road maintenance, and fish transport. On an annual basis the number of truck trips during the operational phase will be much fewer than those during the construction phase. Routine visual inspections of FRE facilities and the inundation area will be conducted monthly to observe facility conditions and identify potential maintenance requirements. This will likely be undertaken with a single vehicle. Identified maintenance requirements will require the presence of vehicles to support intermittent maintenance activities. Intermittent maintenance activities are expected to occur twice annually. Following periodic retention events, debris management activities will be required that are assumed to require the use of boats, 2-axle trucks, and log handling equipment for the collection and staging of woody debris at the log sorting yard (river mile 109.6 to 109.9). Debris management activities include the removal of large woody debris from the log sorting to locations in the basin used for habitat restoration and enhancement efforts as proposed in the mitigation plan<sup>iv</sup>. Limited use of 3- or 4-axle trucks may also be required. Road maintenance and maintenance of the proposed FRE and Collect, Handle, Transfer, and Release (CHTR) fish passage facilities will also be required during the operational phase. Trucks will be needed to haul material to maintain and repair roads. Additionally, 2-axle trucks will be used to transport fish upstream during retention events as part of the CHTR facility operation.

The average number of truck trips per year has not been estimated for the operational phase of the proposed project because truck trips are directly correlated to specific maintenance activities and operational procedures. This information will be developed during the final design and permitting phase of the project.

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<sup>i</sup> Temporary Construction Facilities Technical Memorandum. Prepared for Chehalis Basin Flood Control Zone District. December 17, 2021.

<sup>ii</sup> Quarry Operations Technical Memorandum – Draft. Prepared for Chehalis Basin Flood Control Zone District. December 17, 2021.

<sup>iii</sup> Access Road Update and Best Management Practices Technical Memorandum (Draft). Prepared for Chehalis Basin Flood Control Zone District. December 17, 2021.

<sup>iv</sup> Draft Biological Assessment and Essential Fish Habitat Assessment – Chehalis River Basin Flood Damage Reduction Project: Flood Retention Facility, Airport Levee Improvements, and Mitigation Actions. Submitted to the United States Army Corps of Engineers Seattle District. September 2021.