Flood Retention Facility Project Update

Chehalis River Basin Flood Control Zone District

May 5, 2022

SEPA Resources of Significant Concern

- **Air Quality and Greenhouse Gases**
- **Environmental Health and Safety**
- **Recreation**
- **Wetlands**
- **Fish Species and Habitats**
- **Public Services and Utilities**
- **Wetlands – Airport Levee**
- **Land Use**
- **Water**
- **Wildlife Species and Habitats**

SEPA Resources of Significant Concern

- ✓ Air Quality and Greenhouse Gases
- **Environmental Health and Safety**
- **Recreation**
- **Wetlands**
- **Fish Species and Habitats**
  - **Fish Passage**
- ✓ Public Services and Utilities
- ✓ Wetlands – Airport Levee
- **Land Use**
- **Water**
- **Wildlife Species and Habitats**

SEPA Draft EIS Conclusion & Assumptions

- **Environmental Health and Safety**

Breach of the flood retention structure represents a significant and unavoidable health and safety risk.

Assumption

A catastrophic earthquake is reasonably likely to occur at the same time that the FRE is in operation.

Final EIS Commitments

- **Environmental Health and Safety**

Breach of the flood retention structure represents a significant and unavoidable health and safety risk.

Commitments

Facility will be constructed to meet strict state and federal seismic standards.

Possibility of such a coincident event occurring is 1-in-2.5 billion (SEPA DEIS).

Dam Safety Standards and Seismic Fault Study Review, February 23, 2022

SEPA Resources of Significant Concern

- ✓ Air Quality and Greenhouse Gases
- ✓ Environmental Health and Safety
- **Recreation**
- **Wetlands**
- **Fish Species and Habitats**
  - **Fish Passage**
- ✓ Public Services and Utilities
- ✓ Wetlands – Airport Levee
- **Land Use**
- **Water**
- **Wildlife Species and Habitats**

SEPA Draft EIS Conclusion & Assumptions

- **Recreation**

Permanent loss of access to 13.8 miles of river for kayaking and 6.4 miles of river for recreational fishing.

Assumption

Project area is currently publicly accessible and would not be accessible after the project.

Final EIS Commitments

- **Recreation**

Permanent loss of access to 13.8 miles of river for kayaking and 6.4 miles of river for recreational fishing.

Clarifications/Commitments

Project area is currently private property with limited access requiring permits.

Public property creates more opportunity for public access.

FRE Facility - Conceptual Level Recreational Improvement Options

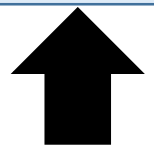
SEPA Resources of Significant Concern

- ✓ Air Quality and Greenhouse Gases
- ✓ Environmental Health and Safety
- ✓ Recreation
- **Wetlands**
- **Fish Species and Habitats**
  - **Fish Passage**
- ✓ Public Services and Utilities
- ✓ Wetlands – Airport Levee
- **Land Use**
- **Water**
- **Wildlife Species and Habitats**

SEPA Draft EIS Conclusion & Assumptions

- **Land Use**

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



Assumption

Inconsistent land use is a significant impact.

Final EIS Commitments

- **Land Use**

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

Commitments

Land use designation will be changed to be consistent with zoning.

Transfer of Use and Jurisdiction, June 1, 2021

SEPA Resources of Significant Concern

- ✓ Air Quality and Greenhouse Gases
- ✓ Environmental Health and Safety
- ✓ Recreation
- **Wetlands**
- **Fish Species and Habitats**
  - **Fish Passage**
- ✓ Public Services and Utilities
- ✓ Wetlands – Airport Levee
- ✓ Land Use
- **Water**
- **Wildlife Species and Habitats**

Fish Passage

2 Phases	
Construction	**Operation**
Trap & Transport Operation 24 hours/day, 7 days/week	Run of River 97% of the time

SEPA Draft EIS Assumptions

- **Fish Species and Habitats - Fish Passage, Construction**

"Adult salmonids would move upstream during construction using a temporary trap-and-transport method with a temporary picket weir… estimated that passage survival would range from 32% to 65%."

<u>Assumption</u>

1. Picket barrier technology will be used.
2. The picket barrier would be ineffective months out of the year due to damage from storm events and would cause mortality for fish passing downstream through the barrier.

Final EIS Commitments

- **Fish Species and Habitats - Fish Passage, Construction**

> "Adult salmonids would move upstream during construction using a temporary trap-and-transport method with a temporary picket weir… estimated that passage survival would range from 32% to 65%."

Commitments

No picket barrier. A velocity barrier will be used, providing a safe and effective means of passage with a 91% projected survival rate.

2020 SEPA DEIS; Description of Construction-Phase Fish Passage Facility Technical Memorandum, 8/20/2021; *Construction Phase Upstream Fish Passage Alternatives Selection and 10% Design Technical Memorandum*, 2/25/2022

Fish Passage Operations

Misconceptions

Misconceptions – Fish Passage Operations

Once constructed, the flood retention structure will be a permanent barrier to fish, requiring 24/7 trap and transport.

Misconceptions – Fish Passage Operations

Once constructed, the flood retention structure will be a permanent barrier to fish, requiring 24/7 trap and transport.

Correction of Misconceptions

River runs free 97% of the time. Structure is open and fish can pass through, up or downstream.

Misconceptions – Fish Passage Operations

Correction of Misconception

- **The flood retention structure would retain water about once every 7 yrs.**
- **Water is retained for a duration 2 to 5 weeks.**

Month	Retention Time over 24 Years of Historic Record		
	Hours	Days	Percent
January	1327	55.3	6.60%
February	1340	55.8	7.33%
March	375	15.6	1.87%
April	760	31.7	3.91%
May	0	0.0	0.00%
June	0	0.0	0.00%
July	0	0.0	0.00%
August	0	0.0	0.00%
September	11	0.5	0.06%
October	2	0.1	0.01%
November	401	16.7	1.99%
December	1347	56.1	6.47%

2/15/2017 Fish Passage Technical Subcommittee Presentation
2017 Operations Plan for Flood Retention Facilities
2017 Combined Dam and Fish Passage Conceptual Design Report
2018 Supplemental Design Report FRE Dam Alternative

Misconceptions – Fish Passage Operations

Fish passage must be provided for all flows and floods.

Misconceptions – Fish Passage Operations

Fish passage must be provided for all flows and floods.

Correction of Misconception

- **Fish naturally move less during extreme flow events.**
- **Project will be designed to meet or exceed state and federal fish passage flow requirements.**

11/15/2021 Response to Ecology Requested Information; 2018 Combined Dam and Fish Passage Conceptual Design Report

Misconceptions – Fish Passage Operations

The conduits are unnatural constrictions in the river which will act like culverts and cause fish to avoid them, delaying upstream and downstream movement.

Misconceptions – Fish Passage Operations

The conduits are unnatural constrictions in the river which will act like culverts and cause fish to avoid them, delaying upstream and downstream movement.

Correction of Misconception

- **Conduits are specifically designed to mimic depths and velocities naturally occurring within the Chehalis River at this location.**

Phase 1 Mitigation—Fish Passage Presentation, 10/21/2019; *2018 Supplemental Design Report, FRE Dam Alternative*

Misconceptions – Fish Passage Operations

Correction of Misconception

- **Structure mimics the hydraulic characteristics of the Chehalis River at this location.**

Phase 1 Mitigation—Fish Passage Presentation, 10/21/2019;

2018 Supplemental Design Report, FRE Dam Alternative

Photograph illustrating channel conditions within footprint of proposed facility.

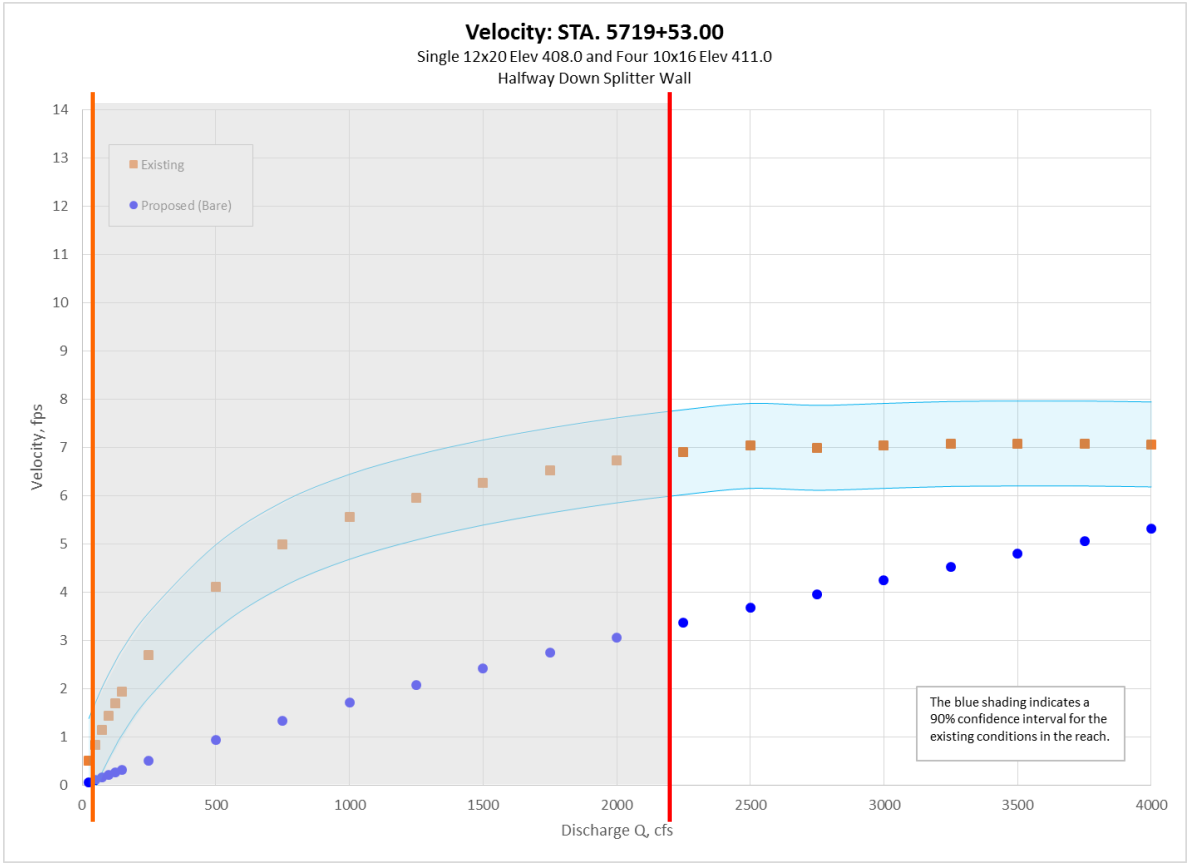
Misconceptions – Fish Passage Operations

Correction of Misconception

- **Fish passage is more favorable because river velocity through the structure is slower than the existing natural channel.**

Chehalis Flood Retention Facility Design Considerations Presentation to Ecology and USACE, 10/25/2018

Velocity: Halfway Down Conduits



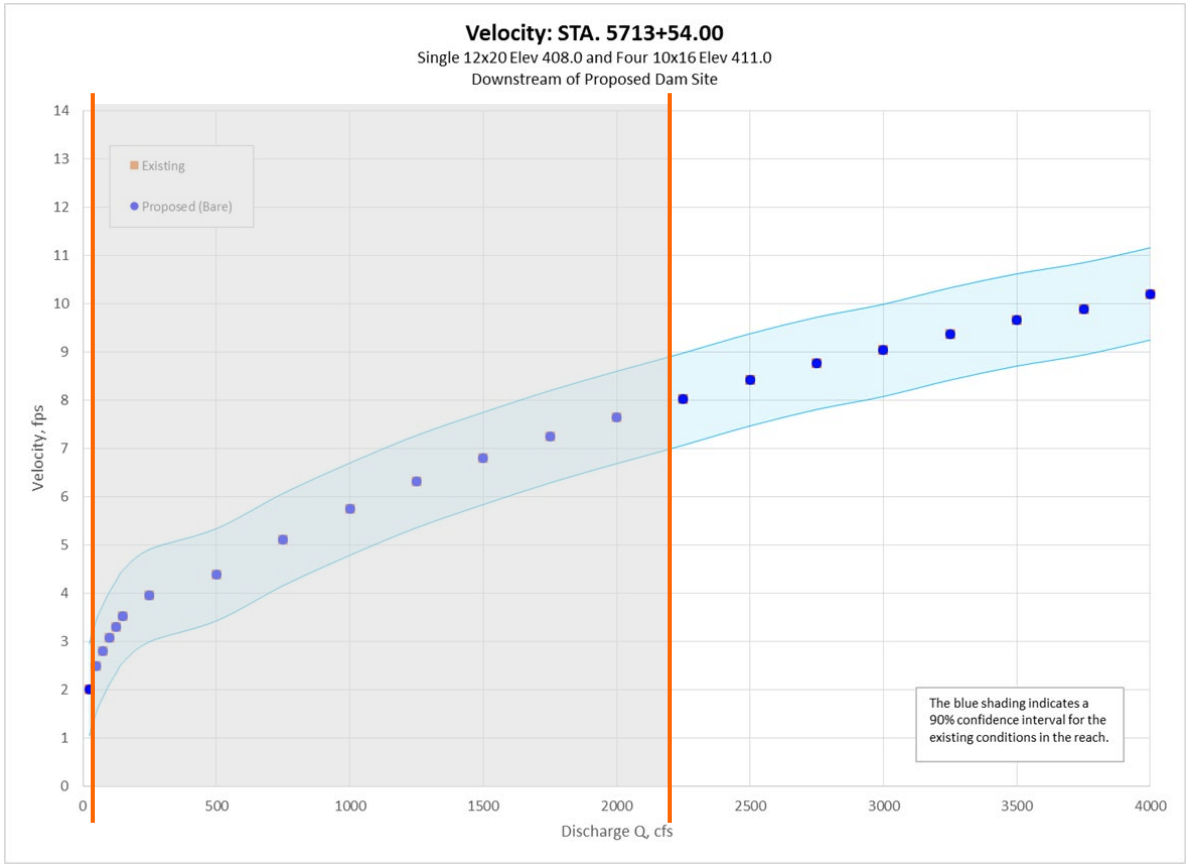
Misconceptions – Fish Passage Operations

Correction of Misconception

- **River velocity through the structure mirrors the existing natural channel.**

Chehalis Flood Retention Facility Design Considerations Presentation to Ecology and USACE, 10/25/2018

Velocity: Pool Downstream of Structure



SEPA Resources of Significant Concern

- ✓ Air Quality and Greenhouse Gases
- ✓ Environmental Health and Safety
- ✓ Recreation
- **Wetlands**
- **Fish Species and Habitats**
  - ✓ Fish Passage
- ✓ Public Services and Utilities
- ✓ Wetlands – Airport Levee
- ✓ Land Use
- **Water**
- **Wildlife Species and Habitats**

Future Board Meeting Updates

- Air Quality and Greenhouse Gases
- Environmental Health and Safety
- Recreation
- **Wetlands**
- **Fish Species and Habitats**
  - Fish Passage
- Public Services and Utilities
- Wetlands – Airport Levee
- Land Use
- **Water**
- **Wildlife Species and Habitats**