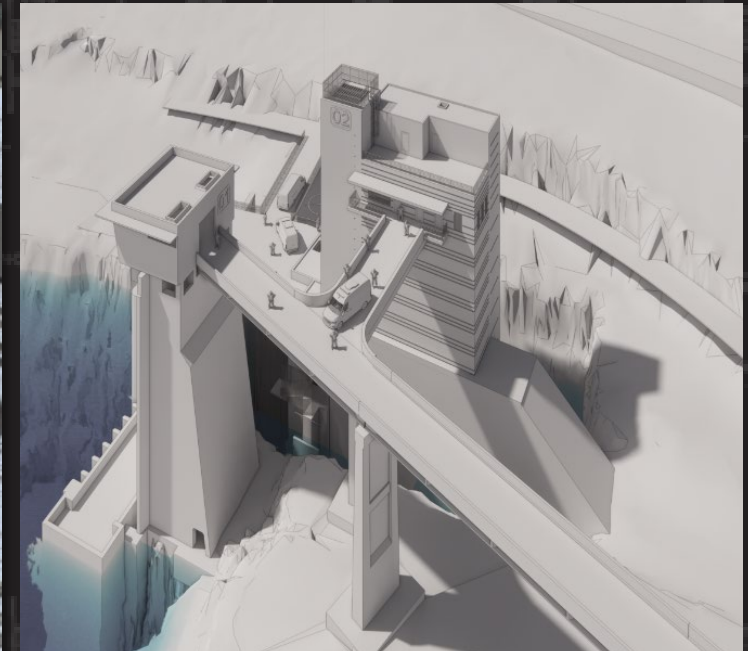


# HOWARD A. HANSON DAM FISH PASSAGE FACILITY OVERVIEW AND UPDATE



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Carol Rhodes, PE, PMP

February 2025



U.S. ARMY



US Army Corps  
of Engineers®



# ADDITIONAL WATER STORAGE PROJECT (AWSP): BACKGROUND, AUTHORITY, SPONSOR

**Authorization:** WRDA 1999, updated WRDA 2022

**Sponsor:** Tacoma Public Utilities

**Authorized Project Cost:** First Cost \$921M

**Multi-Purpose Project:**

- M&I Water Supply
- Ecosystem Restoration

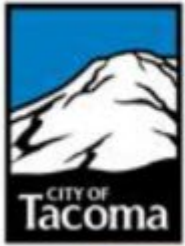
**Phase 1:** 20,000 acre feet of Municipal and Industrial Water and fish passage (1167')

**Phase 2:** 2,400 acre feet of M&I and 9,600 acre feet of low flow augmentation, additional fish and wildlife habitat (1177')





# UNIFIED SPONSOR & STAKEHOLDER SUPPORT



King County



City of Seattle





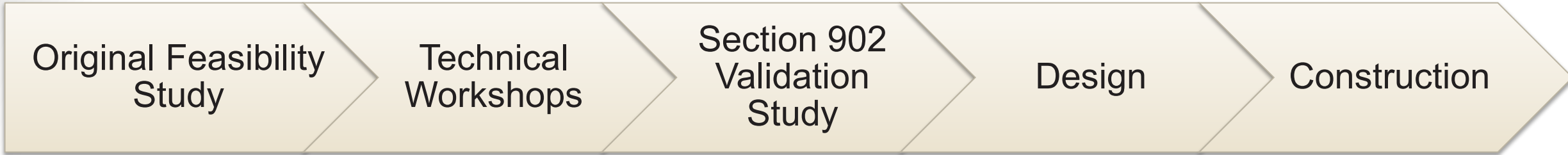
# FISH PASSAGE OPPORTUNITIES & CONSIDERATIONS

Single most impactful project that USACE can take to benefit Puget Sound salmon & orca recovery without negatively impacting other user groups – Supports recovery of Puget Sound fall chinook. Provides increased M&I water resiliency to the Puget Sound region.

- **No significant trade-offs** with other authorized uses of HAHD caused by implementation
- Legally required by the **USACE commitment** to achieve the RPA presented in the 2019 Jeopardy BiOp
- Tacoma Public Utilities has **invested \$400M for infrastructure** to use M&I water, and an upstream FPF that sits idle until our downstream FPF is operational
- **Apply lessons** learned from other FPF projects
- **Risk informed decision-making** is being applied early in the project life cycle to avoid unnecessary high risk in design & construction
- Significant salmon recovery efforts will enhance continuity of harvestable populations in furtherance of reserved **Tribal treaty rights**
- **Diverse coalition** of regional support



# HAHD AWSP HISTORY & PROJECT VALIDATION PROCESS



- 1999: Downstream fish passage facility authorized
- 2005: Construction started
- 2011: Construction paused due to anticipated Section 902 cost overrun

- 2019 Jeopardy BiOp requires downstream fish passage facility by 2030
- FY20 funding received to re-initiate project
- Streamlined evaluation of design options
- Identify tentatively selected plan
- Define scope of the study phase

- Conduct limited technical analysis
- Complete conceptual design + updated cost estimate on recommended plan
- Develop integrated NEPA document (Supplemental EIS)
- Send Director’s Report to Congress for approval and funding

- WRDA ‘22 Authorization
- BIL Appropriations to complete design phase and initiate construction
- Additional data acquisition or analysis
- Development of plans and specifications
- IDAC and AE Contracts awarded

- Remainder of Construction Appropriation
- Execute IDAC Construction Option
- 2030 deadline per BiOp requirements

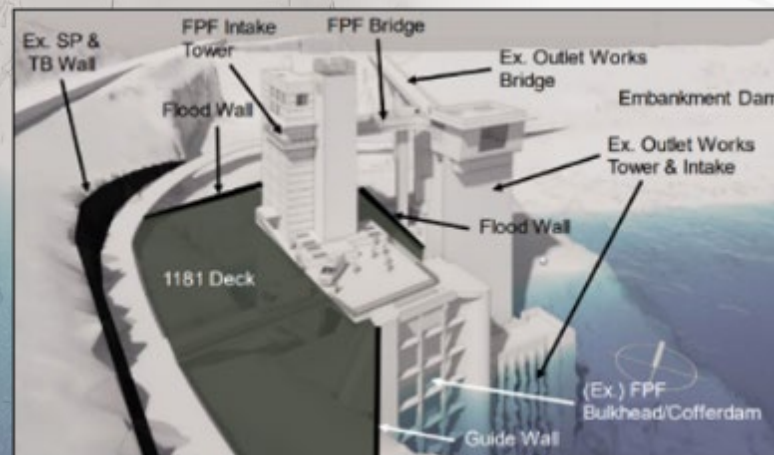
  
**Current Stage**



# FISH PASSAGE FACILITY FEATURES

## Fixed Multiport Collector with Steep Slope Bypass

- Least cost alternative that is designed to meet established criteria of 95% collection and 98% survival outlined in the BiOp
- Received agency and stakeholder support for preferred alternative interagency workshops held in 2020 and 2021
- Significant reduction in estimated O&M costs by elimination of trap and haul from previous 95% design
- Allows for flexibility and adaptability
- Within scope of current authorization and builds on the technical analysis completed for the previous design





# HOWARD HANSON CURRENT TASKS

Data collection and studies to inform design

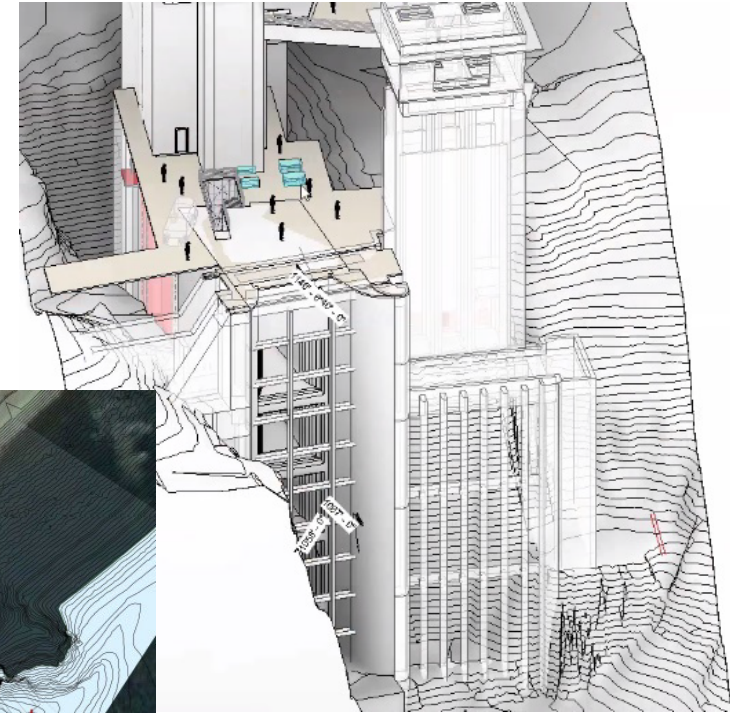
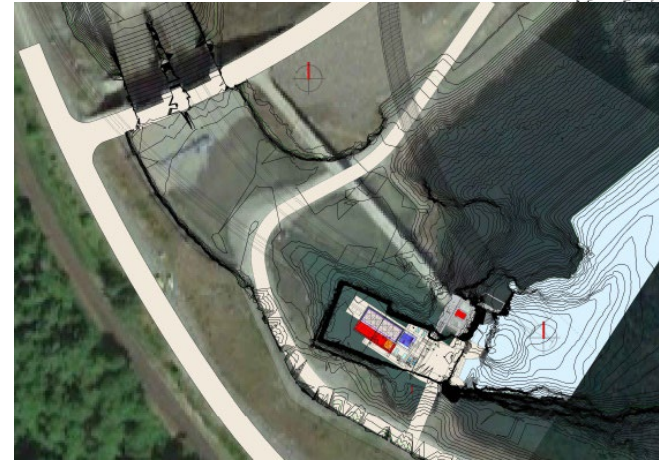
- Fish survivability studies
- Geotechnical explorations
- Hydraulic modeling

Engineering Technical Activities

- Design, Plans, and Specs
- Safety and Quality Reviews

Pre-Construction Services

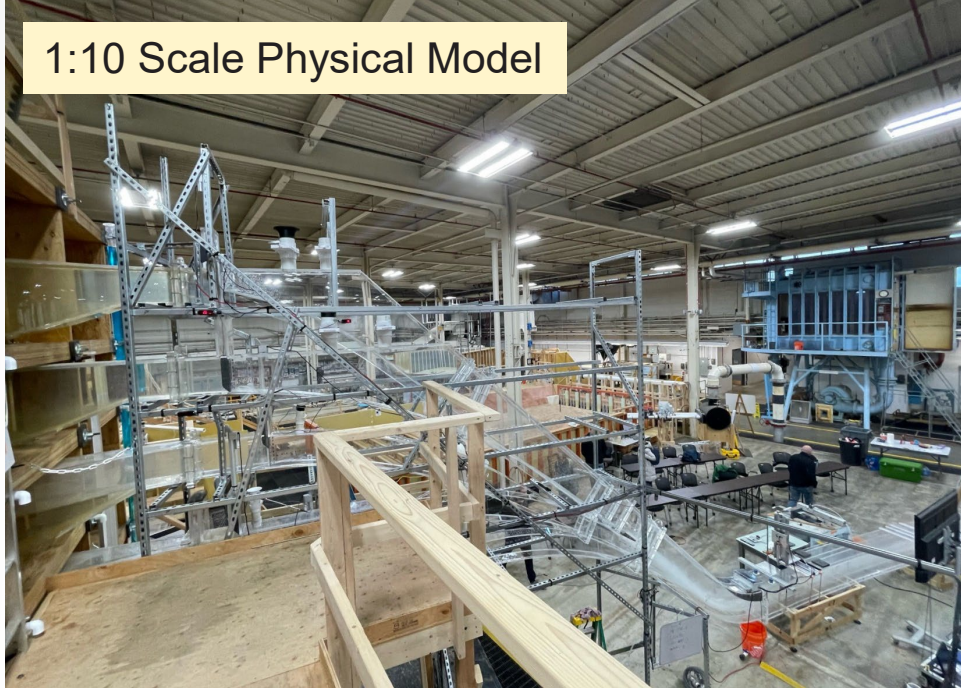
- Bulkhead inspection
- Cost validation/reconciliation
- Prepare for construction option



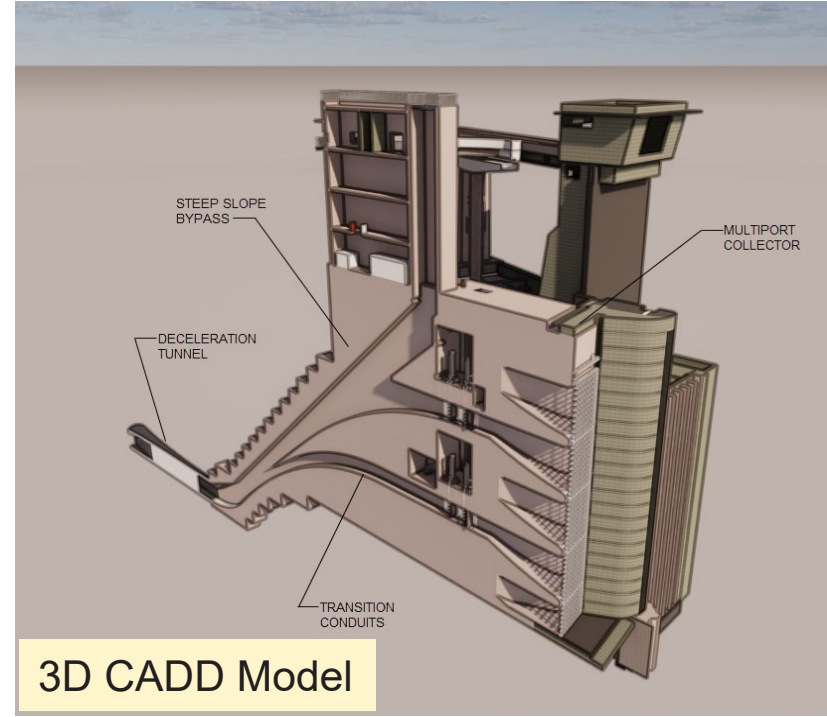


# HOWARD HANSON FISH PASSAGE STATE OF THE ART DESIGN

- 5-Horn Multiport Collector
- Steep Slope Bypass
- Deceleration Tunnel
- Outlet works
- Stilling basin



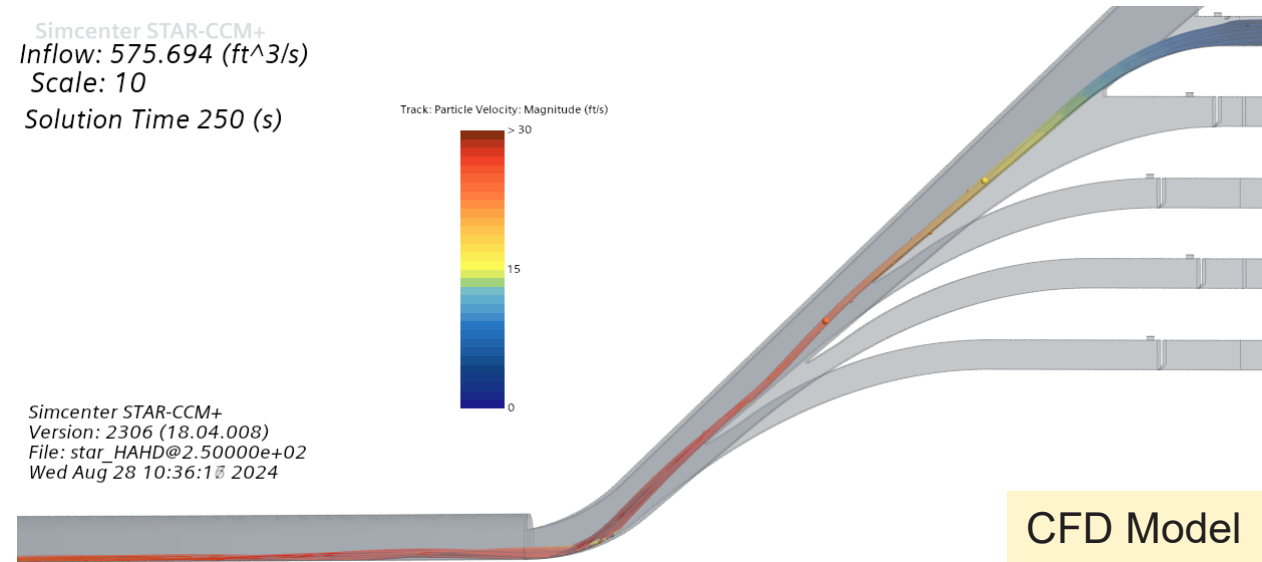
1:10 Scale Physical Model



3D CADD Model

Simcenter STAR-CCM+  
Inflow: 575.694 (ft<sup>3</sup>/s)  
Scale: 10  
Solution Time 250 (s)

Simcenter STAR-CCM+  
Version: 2306 (18.04.008)  
File: star\_HAHD@2.50000e+02  
Wed Aug 28 10:36:17 2024

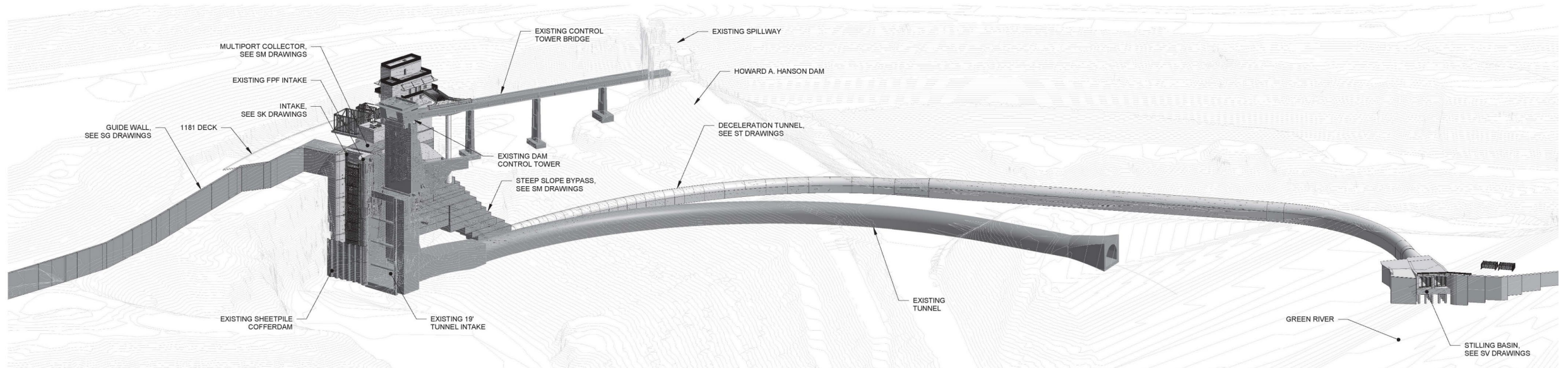
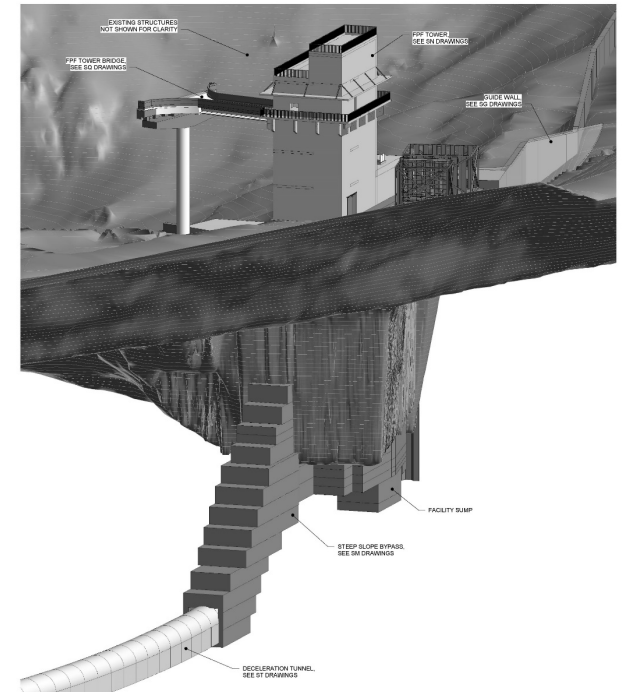
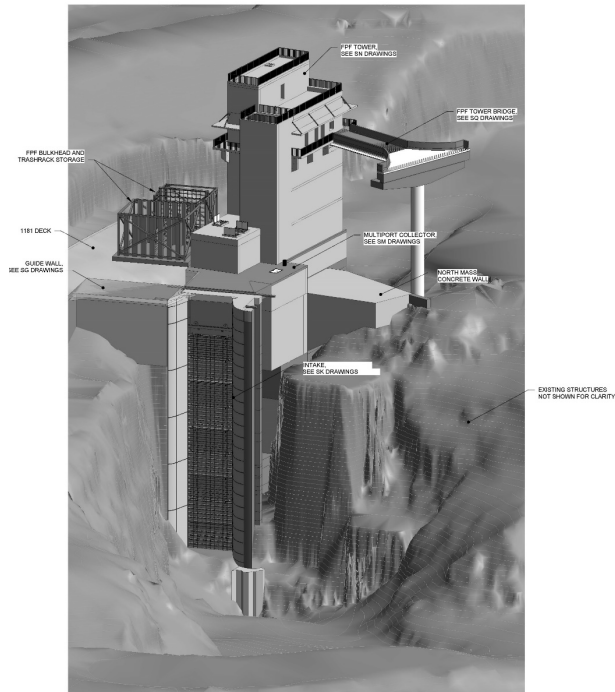
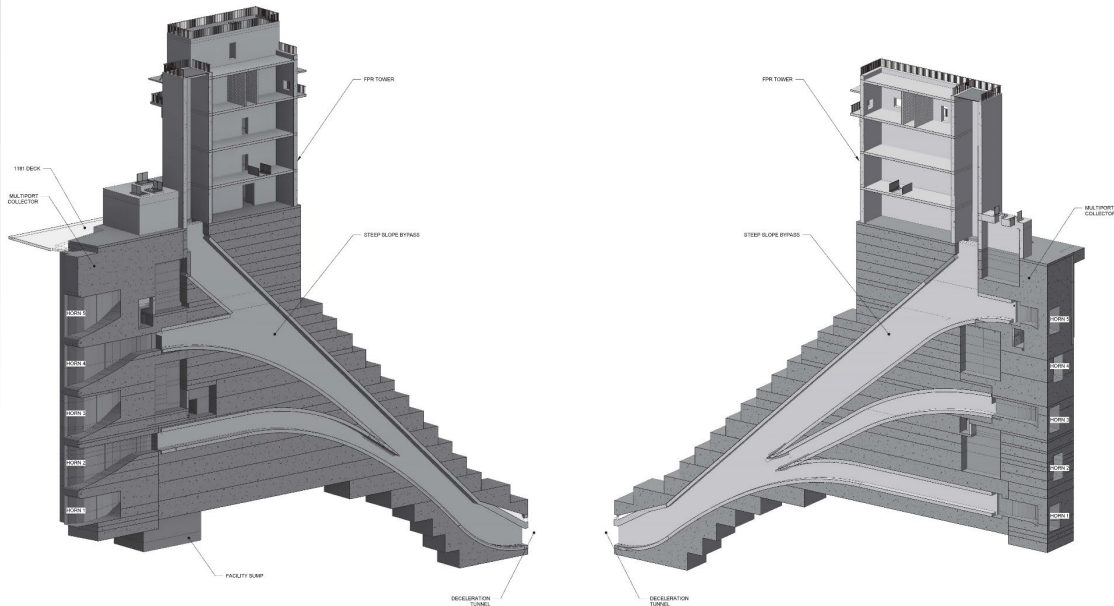


CFD Model





# CURRENT DESIGN



# IN-PROGRESS SCHEDULE

## Completed in 2024

- Hydraulic Modeling
- 35% Design
- 65% Plans & Specifications Submittal (reviews to conclude in 2025)
- IDAC and AE contracts awarded

## Anticipated completion in 2025

- 80% Design, Plans, and Specifications
- 65% Safety and Quality Reviews
- IDAC Construction option award

Construction: 2025-2030



## NEXT STEPS FOR USACE

- Continued unified stakeholder support on all levels
- Award IDAC construction option and advance design
- Certify real property needed for construction
- Construction contract contingent upon receipt of additional funding





# NEXT STEPS FOR TACOMA WATER

Completed in 2024

- Headworks Master Plan

Anticipated Completion in 2025

- Headworks Operations Center Remodel

Planning Phase

- Upstream Fish Passage Facility Upgrade Project
- Fish Habitat Mitigation & Restoration Projects





# QUESTIONS

