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RECLAMATION



Leavenworth Fisheries Complex Project Updates

For Icicle Work Group

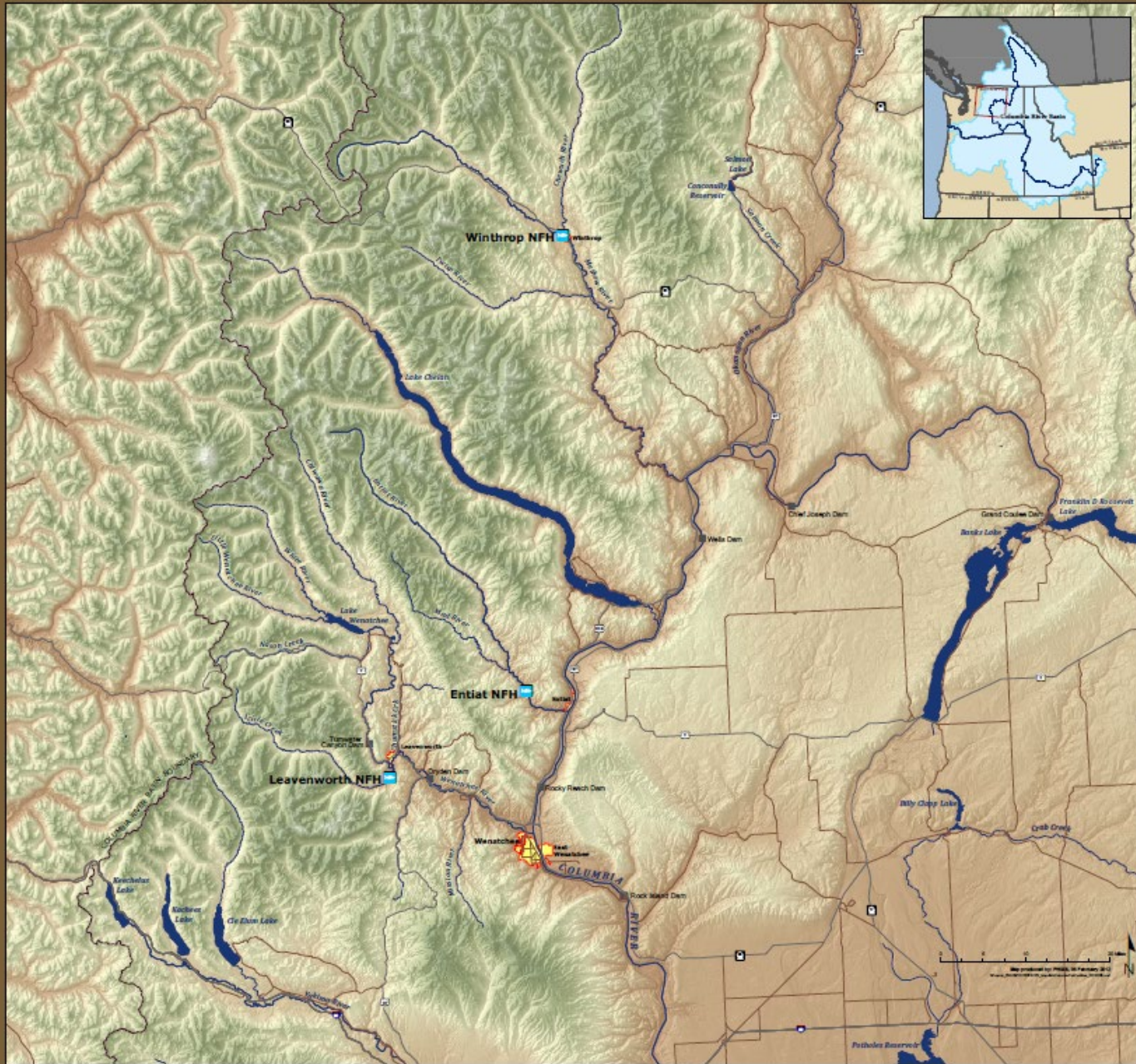
Columbia-Cascades Area Office

April 8th, 2021

Background

- Leavenworth, Entiat, and Winthrop National Fish Hatcheries are mitigation for construction of Grand Coulee Dam
- USFWS owns and operates all 3 hatcheries
- Reclamation and BPA fund the O&M of all 3 hatcheries
- Reclamation and USFWS working to implement the 2017 NMFS BiOp at LNFH, projects to be completed by May 31st 2023





Outline for Project Updates:

- Relevance to Icicle Strategy
- Pilot Circular Tanks
- Surface Water Intake Fish Screens and Fish Passage
- Then vs. Now



Aerial view of LNFH on Icicle Creek




LNFH Projects Relevance to Icicle Strategy

• Icicle Strategy Guiding Principles

- Adequate Streamflow
- Sustainable Hatchery
- Tribal Harvest
- Municipal Supply
- Agricultural Reliability
- Habitat Improvement
- Laws and Regulation



*  Fish denotes relevant guiding principle to projects, details to follow



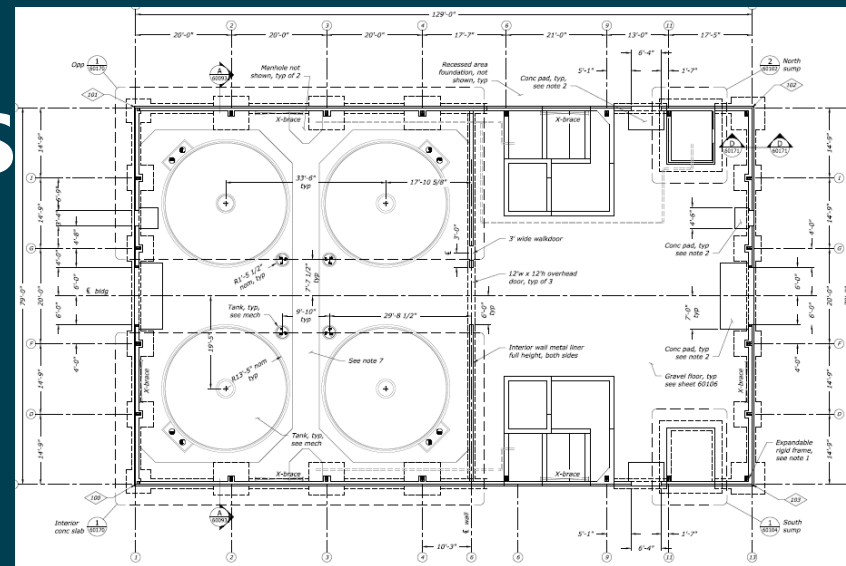
- **Adequate Streamflow:**
 - **Pilot Circular Tanks Project** helps development of hatchery solutions for water conservation and water quality goals.
 - LNFH is targeting a 20cfs water conservation goal at full build out.
 - Testing effectiveness of circular tanks for reducing P discharge
 - **SWISP project** improves fish passage, and provides fish screening, and provides the hatchery greater flexibility in how they use water helping facilitate water conservation.



- **Sustainable Hatchery and Tribal Harvest:**
 - Both projects improve the reliability of hatchery operations which support both of these principles.
- **Laws and Regulations:**
 - Completion of both projects are outlined in the 2017 NMFS BiOp for LNFH Operations and also help address NPDES requirements regarding water quality.



Pilot Circular Tanks



- 4 circular tanks being installed to meet BiOp requirement; helps to inform water conservation goals and phosphorus discharge issues
- Project also includes UV treatment of water for fish health, and sludge tanks to contain solids
- Circular tank technology is expected to reduce hatchery water use by at least 50%
- NEPA compliance through a CEC
- Final Designs by McMillan and Associates, 4/3/2020
- Construction contract award, 9/11/2020
- Construction complete, summer of 2021
- 3 year biological monitoring & evaluation study to follow construction for fish performance, intent to inform next steps/further build out

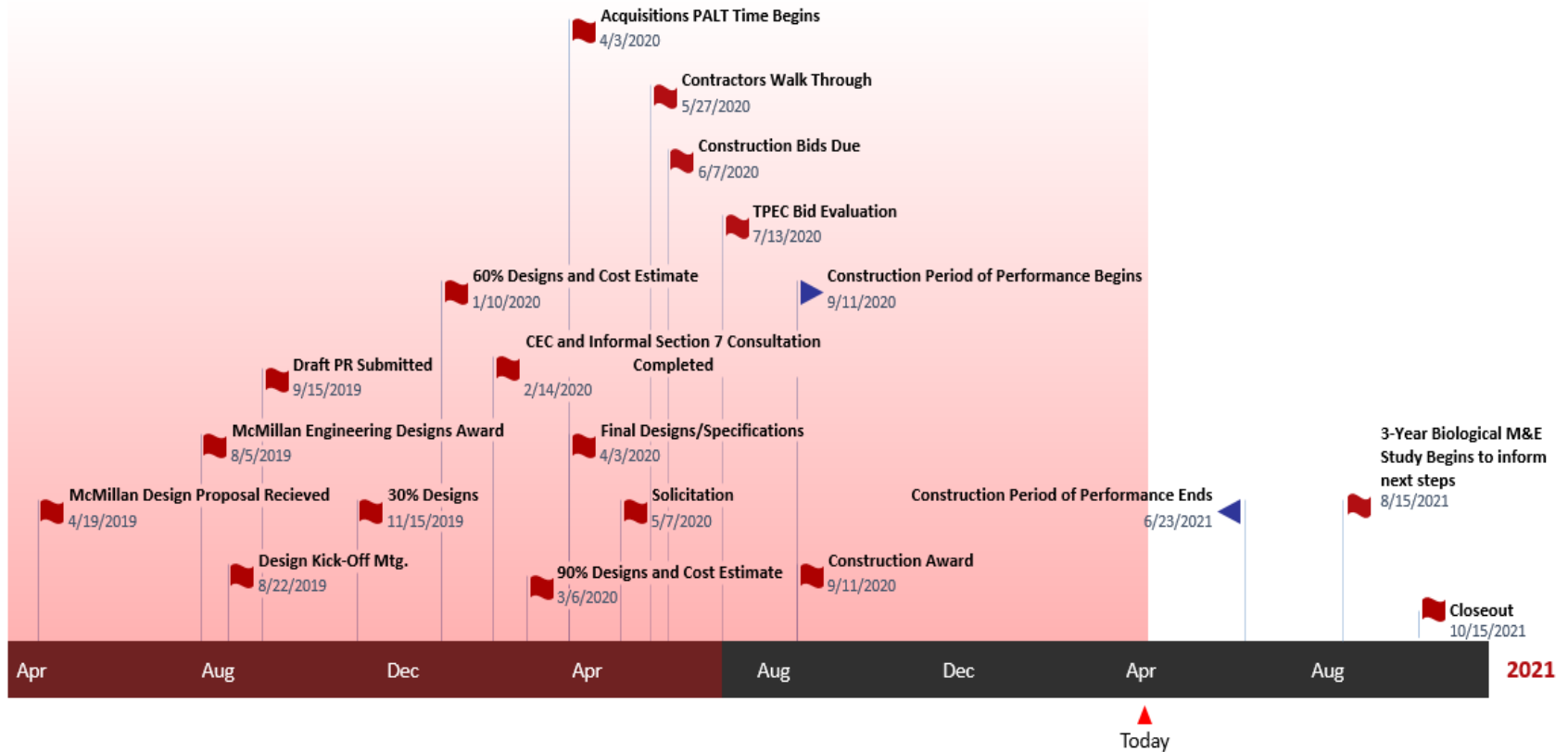


Construction Pictures



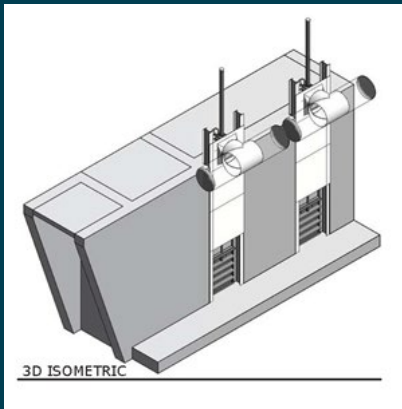
Macro Schedule

AP# 31 A5 Leavenworth Pilot Circular Tanks



Surface Water Intake Fish Screens, Passage Project (SWISP) & Pipeline Rehabilitation

- TSC Design Work: Final Designs for Phase I (fish screens and fish passage), 7/27/2020, Pre-validation cost estimate, 10/26/2020. Phase II (pipeline rehab.) Final Designs and Pre-validation cost estimate, 12/17/2020
- Phase III riparian restoration of disturbed areas by USFWS
- NEPA compliance through EIS: DEIS NOA on 11/20/2020, DEIS Public Comment Period (11/20/2020 – 1/4/2020), FEIS Published 3/26/2021, ROD expected 4/30/2021
- Virtual Public Meetings, 12/8 and 12/10/2020
- Preferred Alternative: Alternative C – pipeline rehab. that lines first section and replaces last section
- Construction 2022 - 2025



Existing Conditions



View of the gate house, conveyance channel, intake, sluiceway/fish ladder and diversion dam



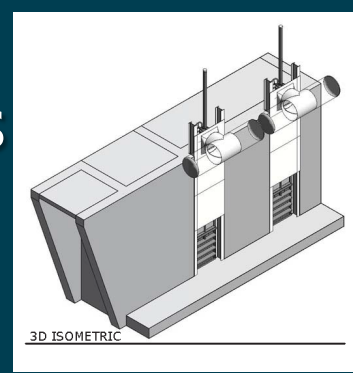
Wooden stop logs on rectangular concrete sill

Ramping concrete weir

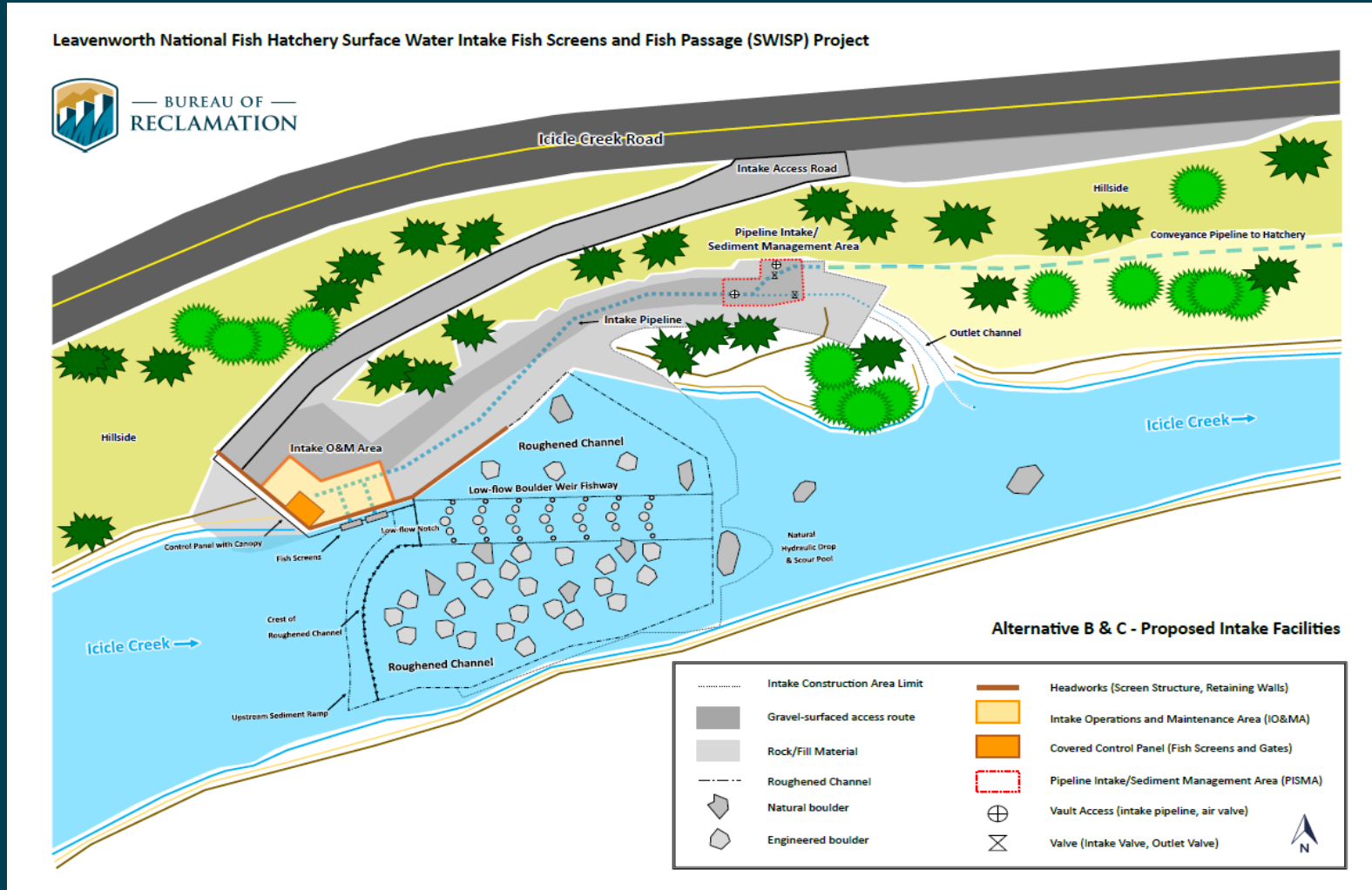


Final Design Project Components

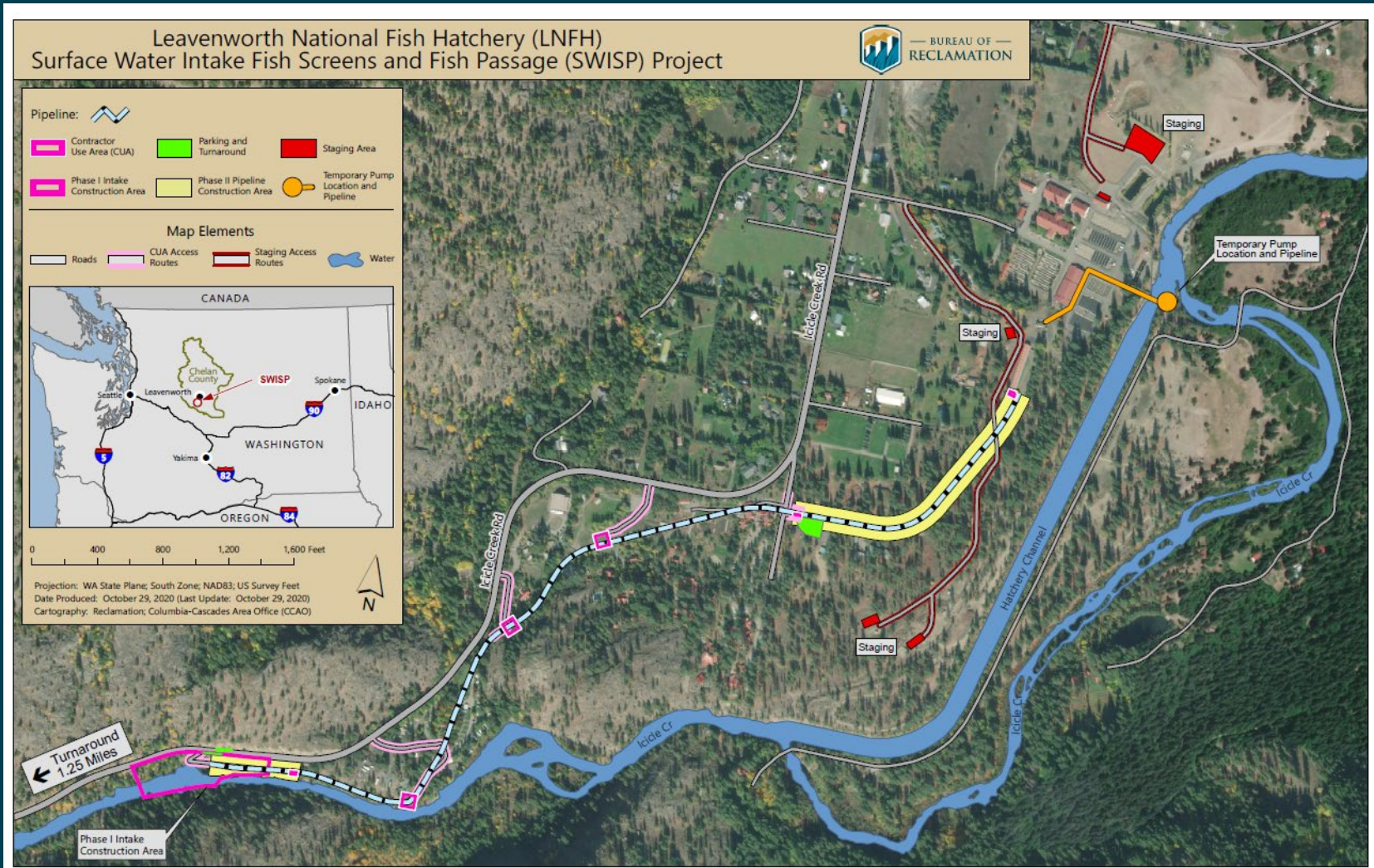
Intake fish screens & fish passage



Field Sketch

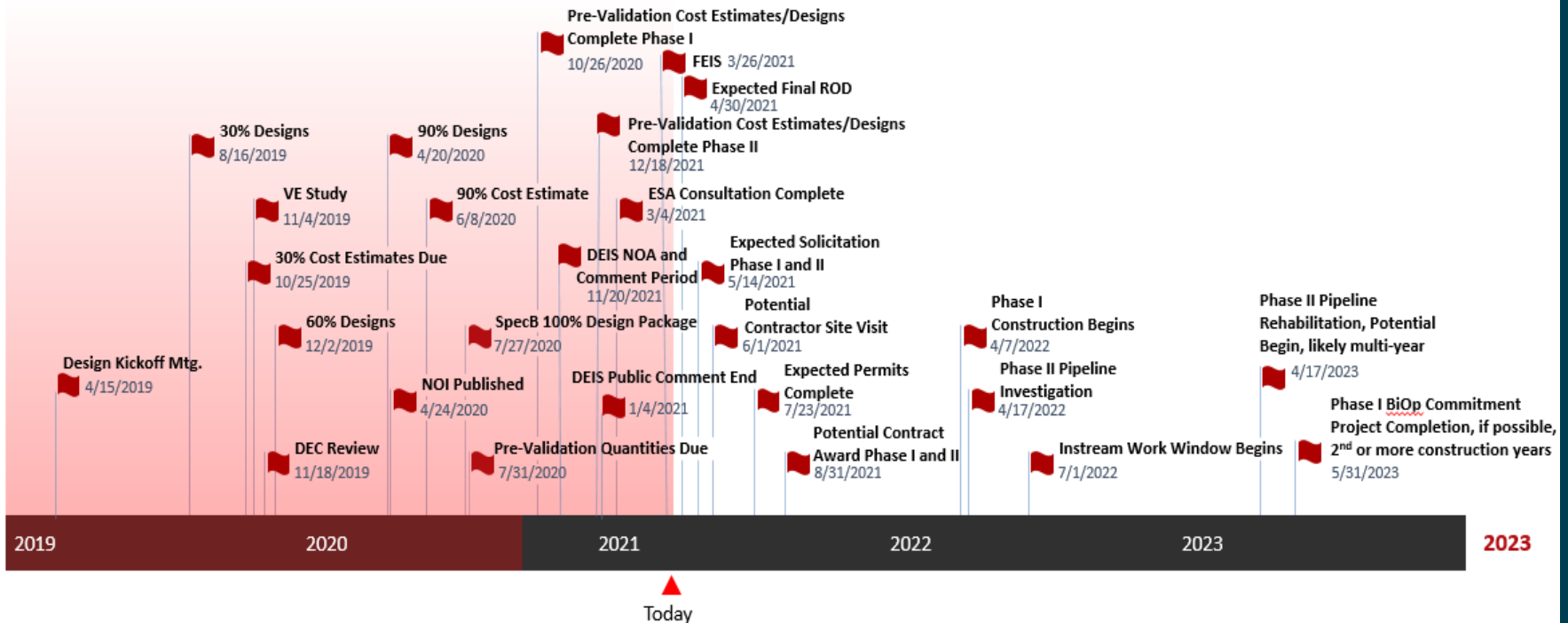


Pipeline Rehabilitation



Macro Schedule

AP# 607 A5 Leavenworth Surface Water Intake Fish Screens and Fish Passage Project and Pipeline Rehabilitation



Leavenworth Projects Then vs. Now

Project Management Responsibility Transferred from CPN to CCAO in 7/2016

Then – Why were we not able to get the work done sooner?

Pilot Circular Tanks Project

- Project designs previously advanced to 65% when a fatal flaw was found, the primary water supply pipeline at the hatchery needed replacement before the project could move forward – piping replaced in 2016

L-SWISP Project

- 2003: Gravity water supply project failed because of water right issues and frazil ice design flaws, plus landowner issues with cut and cover replacement of pipeline on private parcels
- 2009: Failed previous attempt for a pump station - threat of litigation and compressed timelines to execute ARRA funds prevented project completion
- 2009 – 2017: constant litigation prevented project completion

Now – Why are we now saying we are ready to get this done in 2023?

- NMFS 2017 Biological Opinion commitment to complete both projects by May 2023 for continued hatchery operation
- Support from the Icicle Work Group planning process and Icicle Strategy
- Multi-agency design input led to a comprehensive and implementable design, solving all of the 2003 issues listed above.



Thank You,
David Child
Project Manager
Leavenworth Fisheries Complex

A HUGE thank you to our Tribal Partners, USFWS, USACE, WDFW, and the IWG. We can't thank you enough for your input and support.



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Questions?