

WILLAMETTE VALLEY SYSTEM PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

OPEN HOUSE INFORMATION SESSIONS

JANUARY 9-12, 2023



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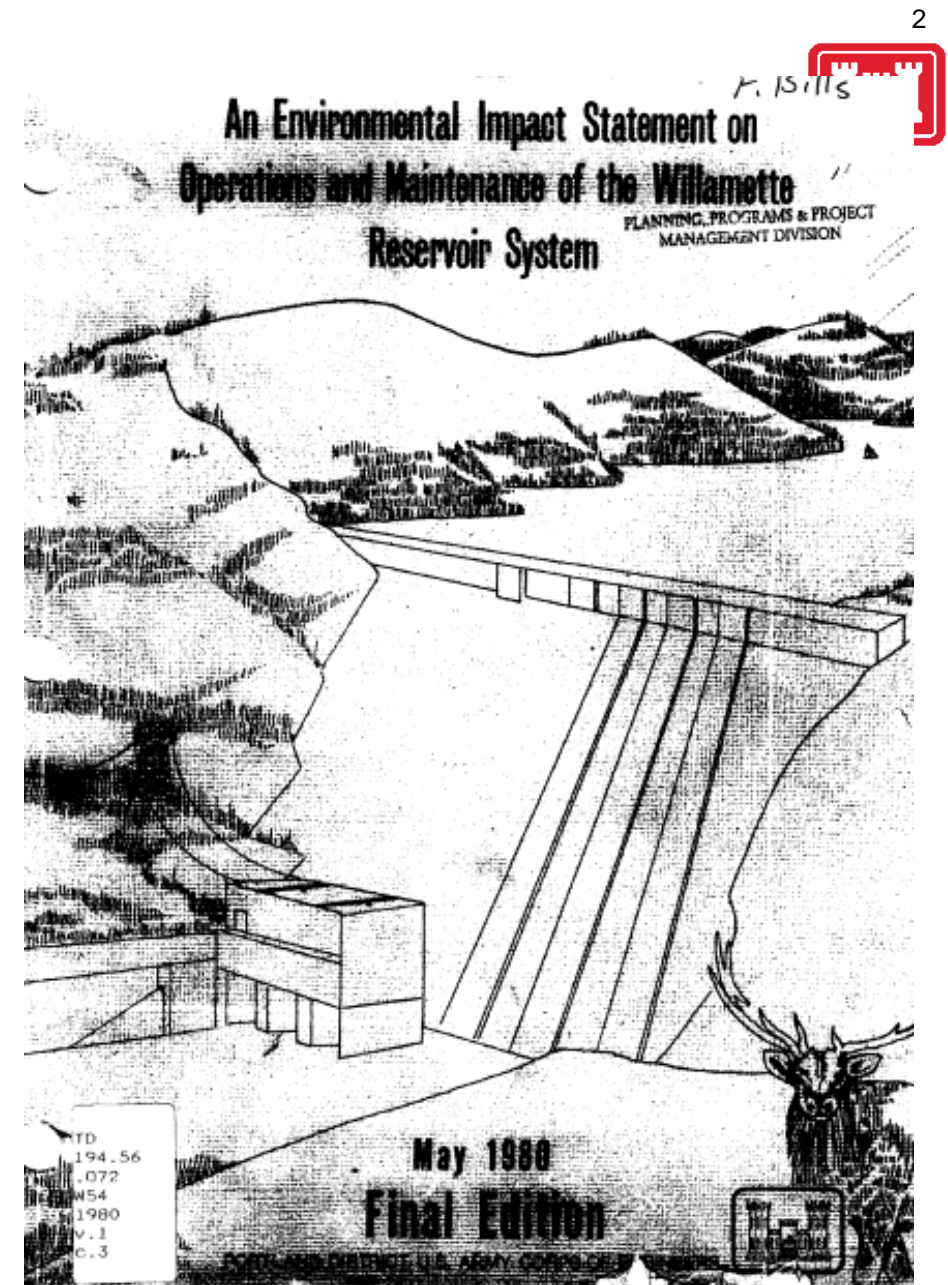


WHY IS THE CORPS PREPARING AN ENVIRONMENTAL IMPACT STATEMENT ?

System-wide evaluation of environmental impacts from operation and maintenance was last conducted in 1980.

Since 1980:

- Operations have been modified and structural improvements have been made.
- New information is available on the environmental impacts of operating and maintaining the system
- Large amount of new information gained regarding Endangered Species Act (ESA) listed species since the 2008 biological opinion, primarily obtained from the research, monitoring, and evaluation (RM&E) program that the Corps has implemented.





WVS EIS PROPOSED ACTION



The proposed action for the Willamette Valley System EIS is continued operation and maintenance of the Willamette Valley System of dams and revetments -

for specific, authorized project purposes;

and in compliance with the Endangered Species Act and all other applicable treaties, laws, and regulations.

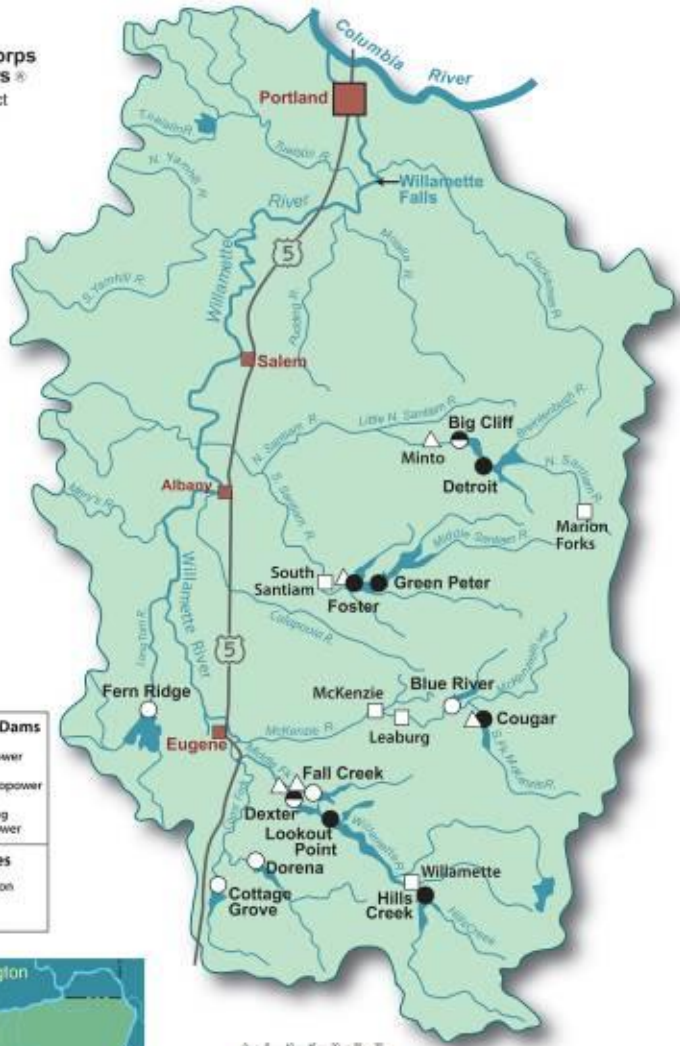


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The Willamette River Basin



WILLAMETTE VALLEY SYSTEM



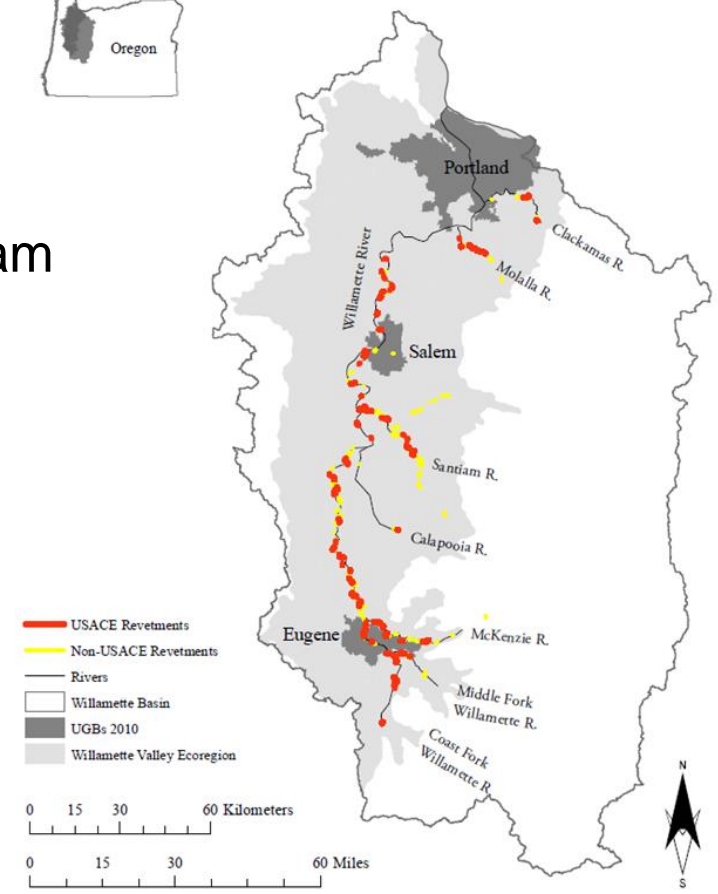
13 Reservoirs

- 11 Multiple-purpose
- 2 Re-regulating
- 8 hydropower

5 Fish Hatcheries

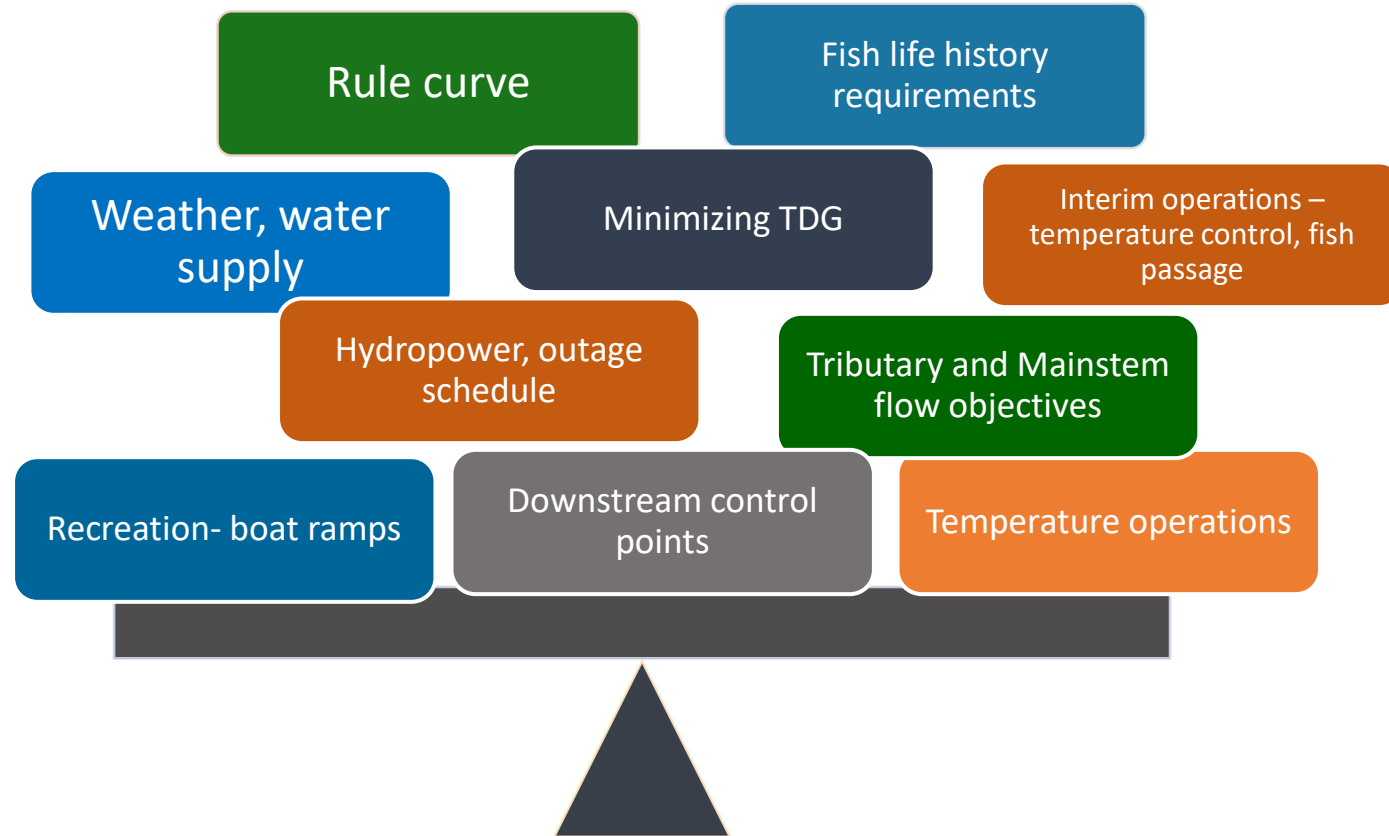
Willamette Bank Protection Program

- 100 miles of revetments
- Mainstem and tributaries





BALANCING DEMANDS





WVS EIS INFORMATION SESSION OBJECTIVES



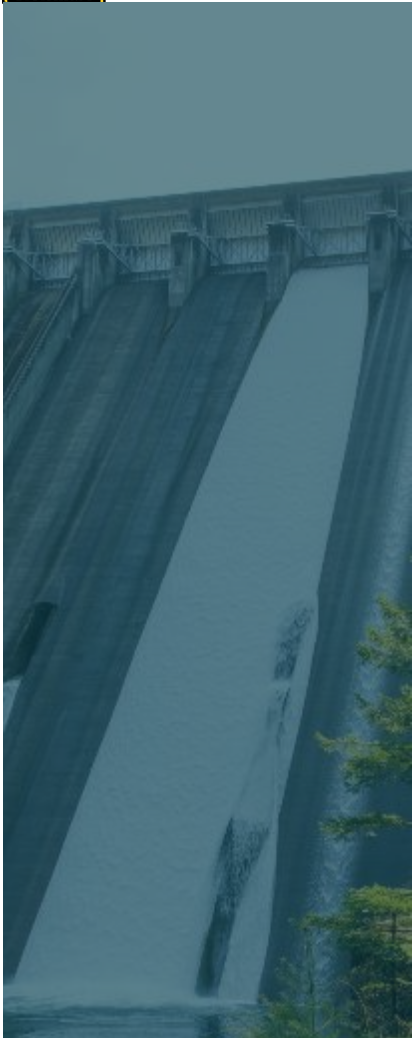
Environmental Impact Statement (EIS) Timeline

WVS EIS document framework and contents

Provide ways to comment



U.S. ARMY

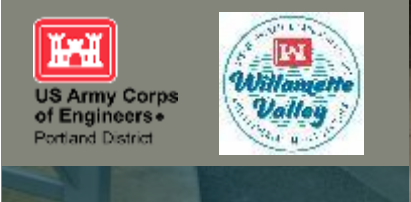


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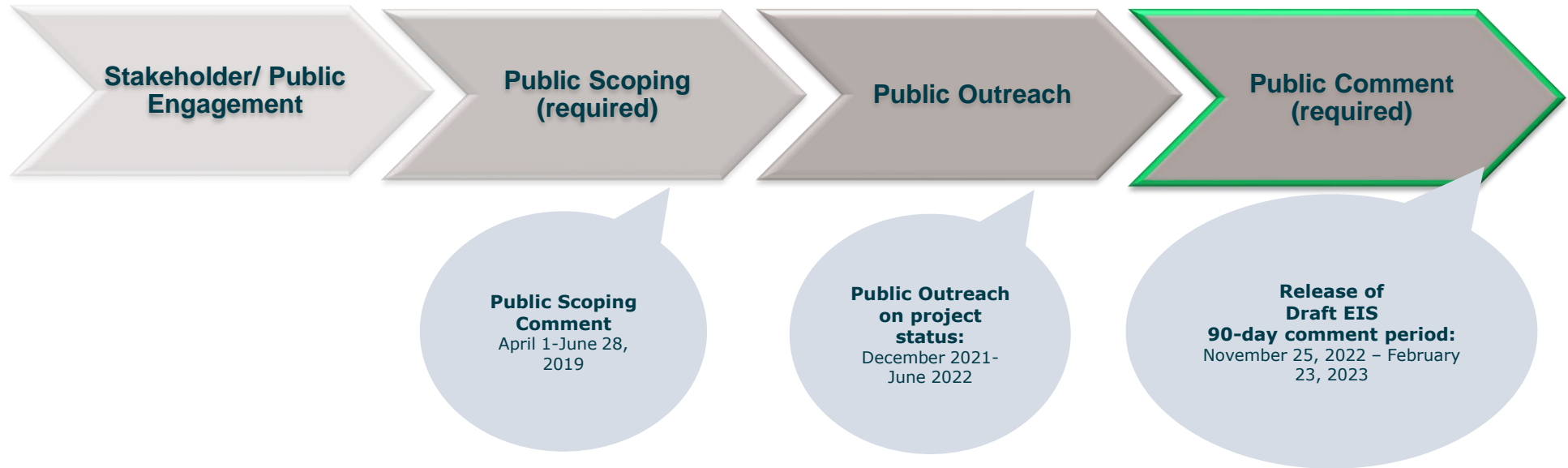
COOPERATING AGENCIES





WVS EIS TIMELINE

NEPA Process



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ENDANGERED SPECIES ACT COMPLIANCE



Photo credit: <https://www.fws.gov/oregonfwo/articles.cfm?id=149489411>

Aquatic Threatened & Endangered Species in the Willamette River Basin

- Bull trout
- Upper Willamette River winter steelhead
- Upper Willamette River spring Chinook salmon



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TWO INTERACTING PROCESSES

Under **NEPA**, federal agencies are required to consider the potential impacts of their proposed actions. This includes impacts on **ESA-listed species** and their habitats.

The NEPA process for the Willamette Valley System involves:

- A system-wide evaluation of the environmental impacts of how USACE operates and maintains the Willamette Valley System while incorporating measures to meet ESA obligations
- Completion Dec 31, 2024



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PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (PEIS)



Programmatic Approach

Programmatic approaches to NEPA compliance

- a process by which a framework is **established for broad programs and issues**;
- **allows for tiering**
 - smaller, more detailed, site-specific proposals for projects within the broader program are considered in subsequent NEPA evaluations.
- Note: Several measures may be fully evaluated in the WVS PEIS and would have no further NEPA review (see Final Measures Developed for the Action Alternatives)

Characterization of Effects

Magnitude

- No effect / Negligible
- Minor
- Moderate
- Major

Duration

- Short-term
- Medium-term
- Long-term

Geographic Extent

- Local
- Regional
- Basin-wide



WVS PEIS CHAPTER OVERVIEW



Chapter	Description
Chapter 1 – Introduction	Provides background information on the NEPA, ESA and WVS.
Chapter 2 – Description of the Proposed Action and Alternatives	Provides an overview of the alternative development process. Describes the measures that comprise the action alternatives that meet the purpose and need of the PEIS. Describes the No Action Alternative and the Action Alternatives.
Chapter 3 – Affected Environment and Environmental Consequences	Discusses the relevant resource issues within the WVS PEIS scope and analyzes the direct and indirect effects of the alternatives across the resource topic areas.
Chapter 4 – Cumulative Effects	Analyzes the effects of the alternatives in conjunction with the trends of past, present, and reasonably foreseeable actions and their effects on each of the resource topic areas.
Chapter 5 – Preferred Alternative Selection and Implementation	Discusses the evaluation and comparison of the alternatives, identification and overview of the preferred alternative, and the implementation and adaptive management plans.
Chapter 6 – Public Involvement	Describes the public involvement process for the WVS PEIS.
Chapter 7 – Compliance with Environmental Laws, Regulations and Executive Orders	Provides the status of environmental and cultural resources compliance and explains the plan to update compliance.



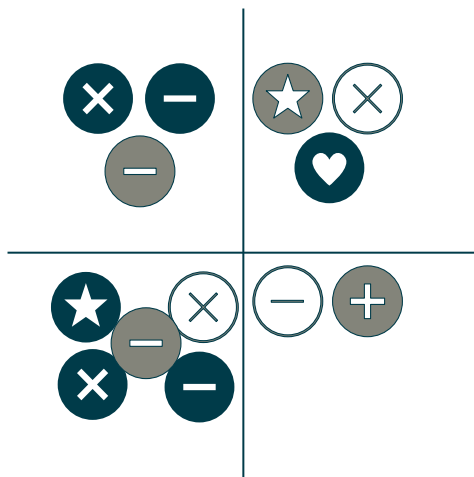
ALTERNATIVES DEVELOPMENT PROCESS



Measure: a **feature** or an **activity** that can be implemented at a specific geographic site to address one or more of the EIS objectives.

Measures are categorized as structural or operational.

- **Structural Measures:** new structures
 - Examples: temperature control towers or fish facilities.
- **Operational Measures:** modifications to how a dam is operated
 - Examples: how high the reservoir is filled or from which outlet water is released through the dam.



Alternatives are different **combinations of measures** formulated to meet the EIS objectives to varying degrees.



ALTERNATIVES



Alt	Category	Description
No Action (NAA)	Current O&M	Practices as of April 2019
1	Storage-Focused	Increase the probability of refilling WVS reservoirs
2A	Integrated (Hybrid Structural and Operational)	Water Management Flexibility and ESA-Listed Fish using a combination of operations and structures.
2B	Integrated (Hybrid Structural and Operational)	Water Management Flexibility and ESA-Listed Fish (Same as 2A, except downstream passage (DSP) measure at Cougar – Diversion Tunnel)
3A	Operations Focused	Combinations of spring drawdowns and spill with fall drawdowns
3B	Operations Focused	Combinations of spring drawdowns and spill with fall drawdowns
4	Structures Focused	Fish passage and temperature control structures
5	Refined Integrated (Hybrid Structural and Operational)	Water Management Flexibility and ESA-Listed Fish (Same as 2B, except Refined flow regime)



NO ACTION ALTERNATIVE



Required by NEPA to provide a point of comparison/starting point for comparison of the environmental effects of the action alternatives.

Overall Focus

System operations and maintenance of facilities within the WVS as of spring of 2019, when the EIS was initiated.

This includes:

- All routine maintenance actions for WVS infrastructure and WVS features constructed prior to 2019
- 2008 BiOp Flows and E-flows
- Operations as defined by the water control manuals, which primarily follow the rule curve
- Fall drawdown operation for fish passage at Fall Creek
- Temperature operations at Cougar (WTCT) and Detroit (spillway)



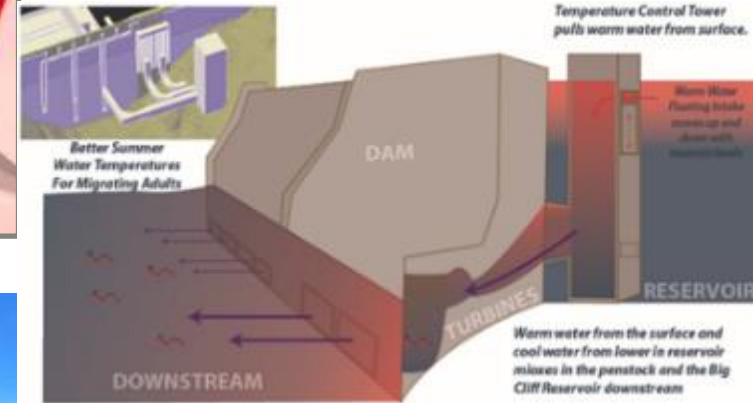
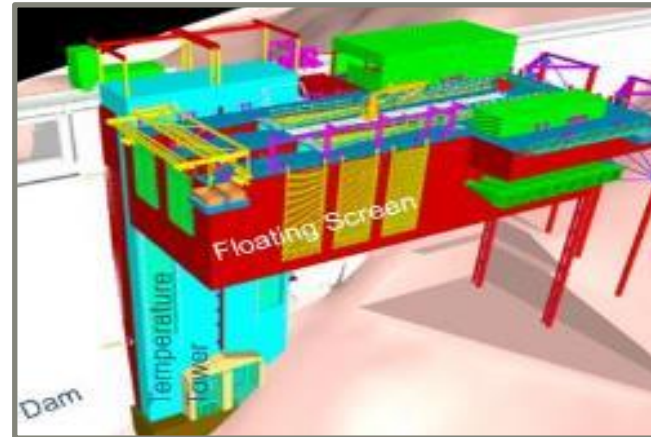
ALTERNATIVE 1



Improve Fish Passage Through Storage-Focused Measures: Increase the probability of refilling Willamette Valley System reservoirs and supplemental water delivery for authorized purposes

Overall Focus

- Includes operational measures that would increase the likelihood of refilling the WVS reservoirs to their maximum conservation pool levels in the spring.
 - Reduced tributary and mainstem minimum flows
- Includes structural measures for fish passage and temperature control over various water levels throughout the year.





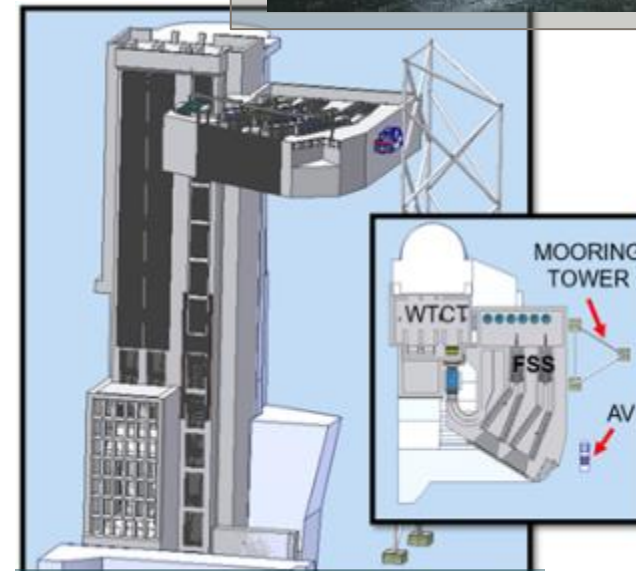
ALTERNATIVES 2A AND 2B



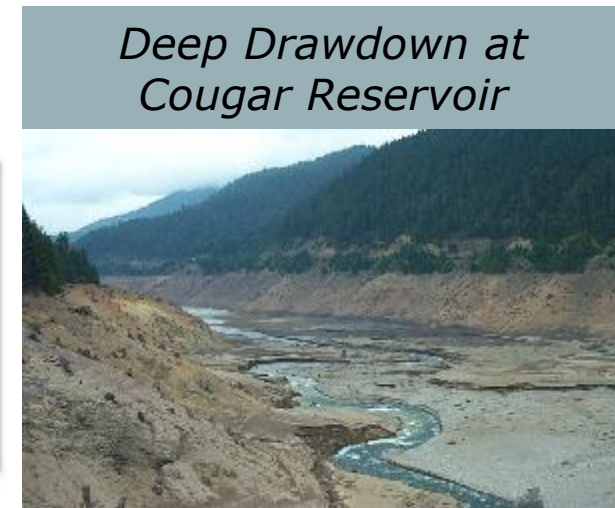
Integrated Water Management Flexibility and Endangered Species Act Listed Fish Alternatives

Overall Focus

- Improve fish passage with a **combination of modified operations and structural improvements**
- Measures to balance water management flexibility and meet ESA-listed fish obligations, e.g., habitat and temperature flow regime
- The only difference between Alternatives 2A and 2B is in their downstream passage measure at Cougar.
 - 2A = Floating Screen Structure
 - 2B = Operational drawdown to the diversion tunnel



Cougar Floating Screen Structure Design



Deep Drawdown at Cougar Reservoir



ALTERNATIVES 3A AND 3B



Operations Focused: Improve Passage of Endangered Species Act Listed Fish through existing structures by modifying water control operations

Overall Focus

- Improve fish passage through the WVS dams by **modifying operations** rather than adding or substantially changing structures.
 - Spring spill
 - Spring drawdowns
 - Fall drawdowns
- Improve temperatures downstream of WVS dams by modifying operations
 - Spring spill
 - Strategic use of outlets
- Habitat and temperature flow regime
- The only difference between Alternatives 3A and 3B is in the location of spring downstream passage measures

Surface Spill at Detroit Dam



Operational Downstream Passage

Surface spill to allow fish to pass over the dam to migrate downstream. Only possible for parts of some migration seasons as reservoir must be full enough to reach spillway.

Deep drawdown at Cougar Reservoir



Operational Downstream Passage

Deep drawdowns where the water in a reservoir is lowered as much as possible during migration season so fish can more easily find outlets to migrate downstream through the dam.



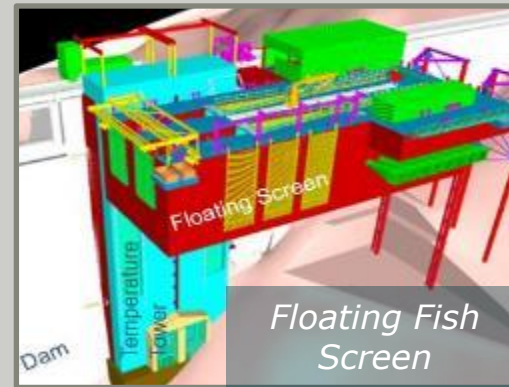
ALTERNATIVE 4



Structures Focused: Improve passage of Endangered Species Act Listed Fish by constructing fish passage and temperature control structures

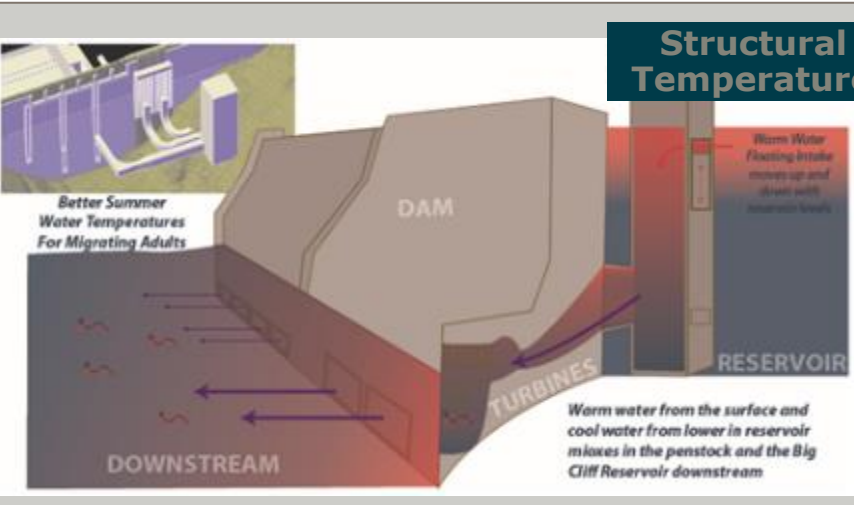
Overall Focus

- Takes a structures-based approach with constructed upstream and downstream fish passage facilities, water temperature control towers, and structures to reduce total dissolved gas.
- Integrated habitat and temperature flow regime.



Structural Downstream Passage

Construction of a floating fish collection screen to capture fish as they migrate past the dam. Collected fish are then transported downstream.



Structural Downstream Temperature Management

Construction of a selective withdrawal structure to improve temperatures released downstream of the dam.



ALTERNATIVE 5



Integrated Water Management Flexibility and Endangered Species Act Listed Fish Alternative with Operational Downstream Fish Passage at Cougar Dam

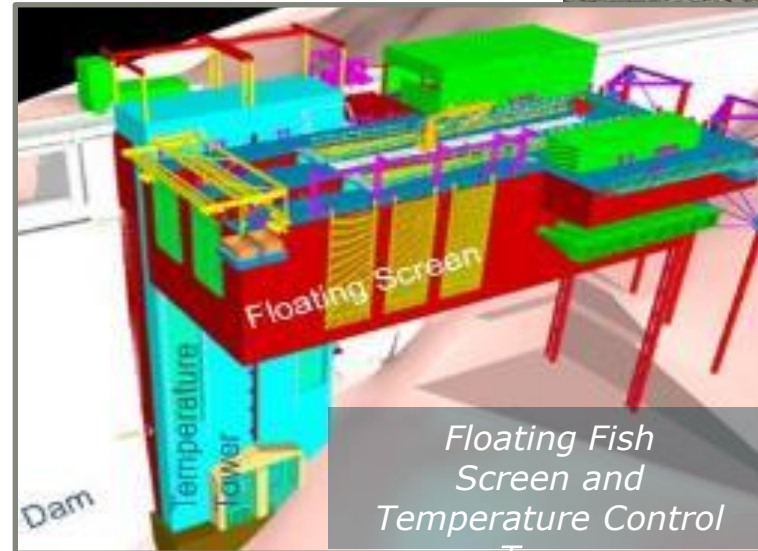
Overall Focus

- Improve fish passage with a **combination of modified operations and structural improvements**
- Measures to balance water management flexibility and meet ESA-listed fish obligations.

Key Defining Elements

- Floating Screen Structure and Temperature Control Tower at Detroit
- Adult fish facility at Green Peter
- Spring spill and fall draw down at Green Peter
- Spring and fall draw down to Diversion Tunnel at Cougar Dam
- Floating Surface Collector at Lookout Point
- Pacific lamprey passage and infrastructure
- Integrated Habitat and temperature flow regime

Deep Drawdown at Cougar Reservoir



Floating Fish Screen and Temperature Control Tower



NEAR-TERM OPERATIONS MEASURE



A set of interim-term operations to improve conditions until the long-term action is in place.

North Santiam (Detroit & Big Cliff)

- Detroit spring/summer spill for downstream fish passage and water temperature management
- Detroit fall lower regulating outlet (RO) for downstream water temperature management
- Detroit winter upper RO for downstream fish passage
- Big Cliff spread spill to reduce TDG

South Santiam (Green Peter & Foster)

- Green Peter spring spill for downstream fish passage
- Green Peter fall deep drawdown for downstream fish passage through ROs
- Foster spring delayed refill and spill for downstream fish passage
- Foster fall spill for downstream fish passage

McKenzie (Cougar)

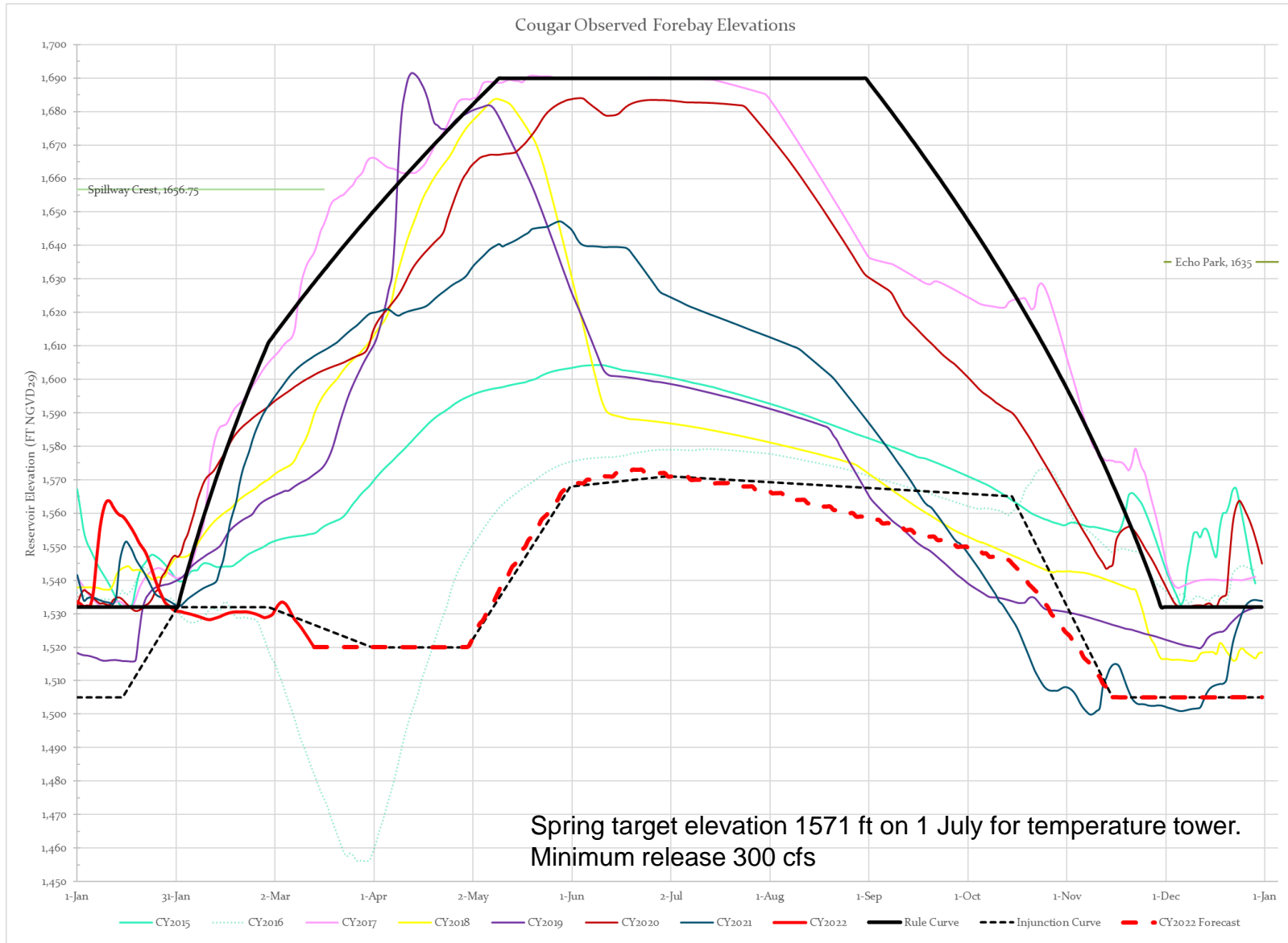
- Fall drawdown for downstream fish passage through ROs
- Spring delayed refill for downstream fish passage through ROs

Middle Fork Willamette (Lookout Point, Dexter, & Fall Creek)

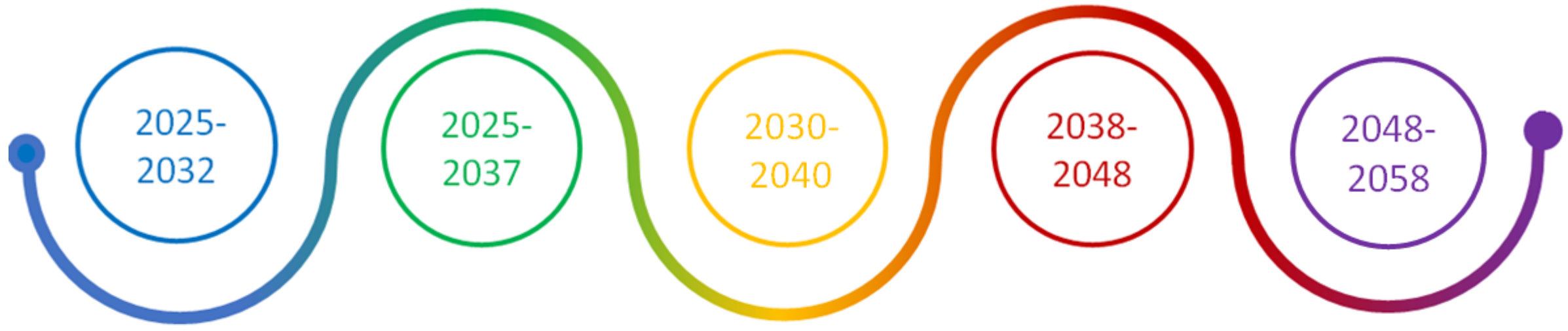
- Hills Creek winter night-time RO prioritization for fish passage
- Lookout Point/Dexter spring/summer spill for downstream fish passage and water temperature management
- Lookout Point fall deep drawdown for downstream fish passage through ROs
- Fall Creek extended winter deep drawdown for downstream fish passage
- Fall Creek spring delayed refill for downstream fish passage



COUGAR DELAYED REFILL AND DRAWDOWN



DRAFT ROADMAP OF MAJOR DOWNSTREAM FISH PASSAGE CONSTRUCTION PROJECTS



FOSTER DSFP

The Foster DSFP project would start at the EDR phase, taking 7 years from start to finish.

DETROIT SWS/FSS

The Detroit SWS/FSS project would start at the P&S phase. During P&S, ERDC modeling (penstock bifurcation/stilling basin) would be completed. Use lessons learned from Howard Hanson to inform project. Construction would be phased (SWS >> FSS).

COUGAR DIV. TUNNEL

Assumes bio metrics not met through RO mods; and Congressional deauthorization is complete. The DT project would start at the EDR phase but may be shorter in duration if information from Disposition Study can be utilized.

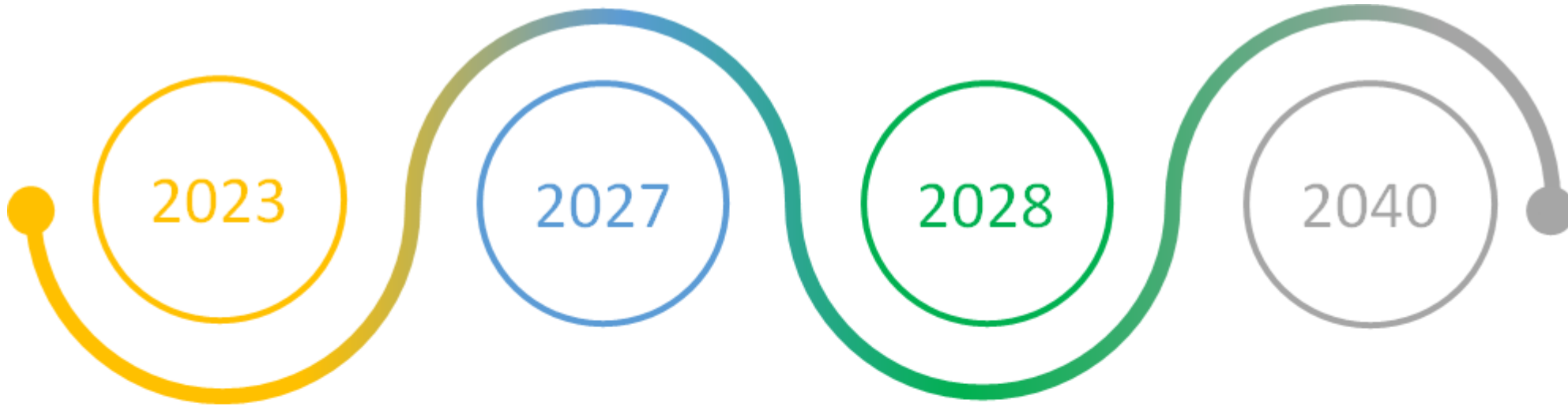
LOOKOUT POINT DSFP (STRUCTURE)

Start of structural DSFP at Lookout Point would occur after Detroit/Howard Hanson have been constructed so that lessons learned can be applied. The Lookout Point DSFP project would start at the EDR phase and take 10 years from start to finish.

HILLS CREEK DSFP

Hills Creek DSFP is not part of the Preferred Alternative and therefore would not be prioritized until all other structures have been built. Hills Creek DSFP would only be considered if biological benefits were not realized through implementation of the PA.

DRAFT ROADMAP OF COUGAR PROJECT



2023

RO RESURFACE

Resurfacing of the Cougar RO Chute complete by 2023. Alternatives Study for additional RO modifications also complete.

2027

RO MODS

Completion of additional RO modifications in 2027.

Begin biological testing to determine success of RO modifications; this will help to inform final structural improvement actions at Cougar.

2028

DISPOSITION STUDY

Disposition Study/Dam Safety Evaluation complete in 2028.

Congressional Deauthorization assumed in 2030.

Decision Point:
Determine whether to proceed with Division Tunnel Project.

2040

DIVERSION TUNNEL PROJECT

Assuming RO modifications do not meet biological metrics and deauthorization of hydro at Cougar proceeds, Diversion Tunnel Project construction complete by 2040.



HOW TO COMMENT



- 90- day comment period ends February 23, 2023
- All public comments will be included in the USACE EIS record.
- Public comments can be submitted in writing or via email correspondence to the following addresses. Please add “Willamette Valley System EIS” in a subject line of any correspondence.

Email Address to Submit Public Comments:

willamette.eis@usace.army.mil

Address to Send Comment Letters:

U.S. Army Corps of Engineers
Attn: CENWP-PME-E / Willamette EIS
P.O. Box 2946
Portland, OR 97208-2946

Please add “Willamette Valley System Draft EIS” in the subject line of submitted letters.

Agency Contact for More Information

Nicklas Knudson
U.S. Army Corps of Engineers
Portland District Office
Block 300
333 SW 1st Avenue
Portland, OR 97204
(503) 808-4739

In-Person Public Meetings

January 9 – Springfield (evening)
January 10 – Eugene (afternoon)
January 11 – Sweet Home (evening)
January 12 – Stayton (afternoon)

<https://www.nwp.usace.army.mil/Locations/Willamette-Valley/System-Evaluation-EIS/>