DETROIT FISH PASSAGE CONSTRUCTION/DRAWDOWN UPDATE

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Detroit DS Passage Project Manager
Portland District Office
15 May 2019

2019 North Santiam Basin Summit

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PRESENTATION OUTLINE

Background
- Detroit Dam

Willamette Biological Opinion
- Detroit Actions
- Impacts
- Analysis Results Summary
- Design Update

Summary

Questions

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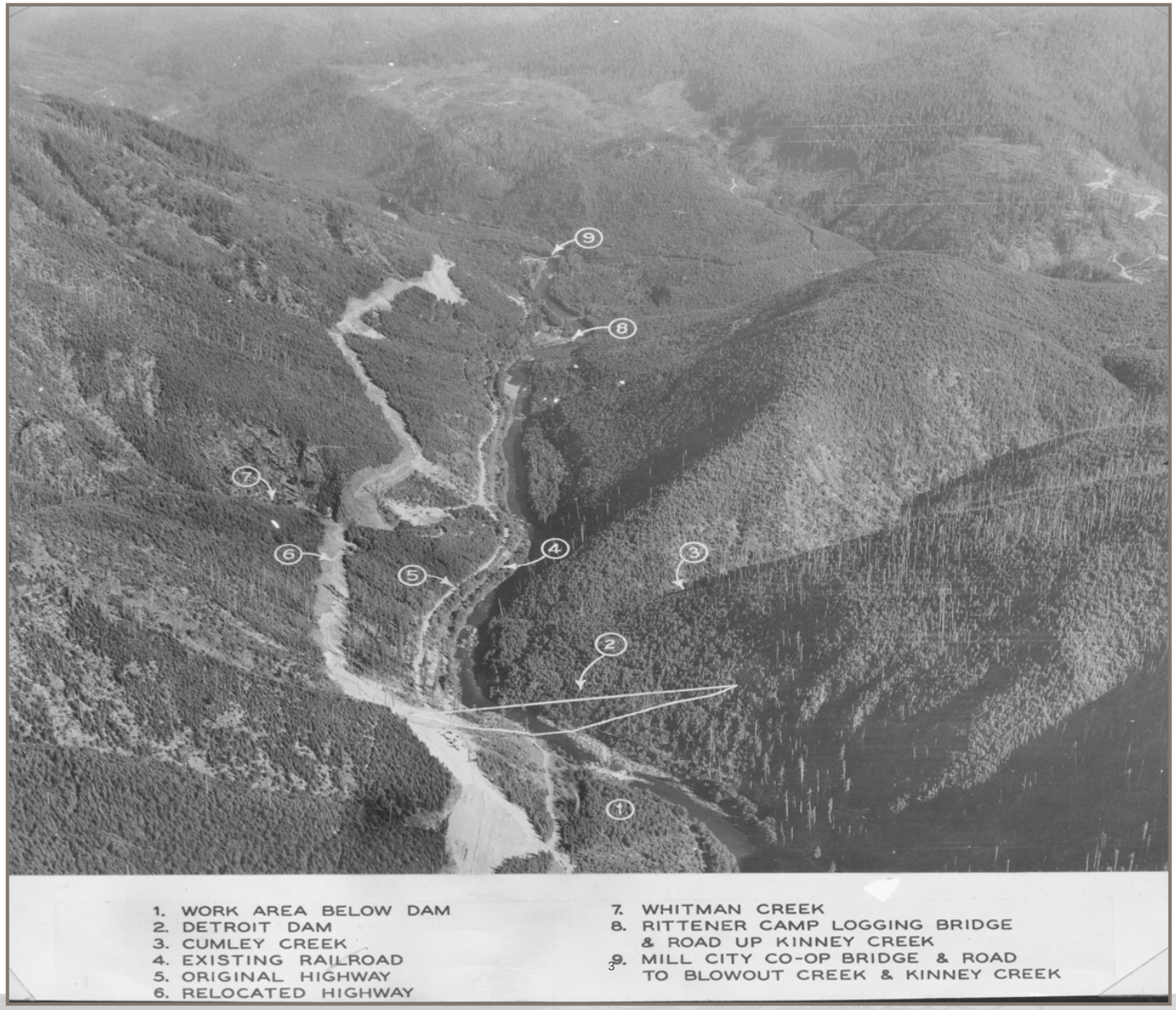
BEFORE DETROIT DAM



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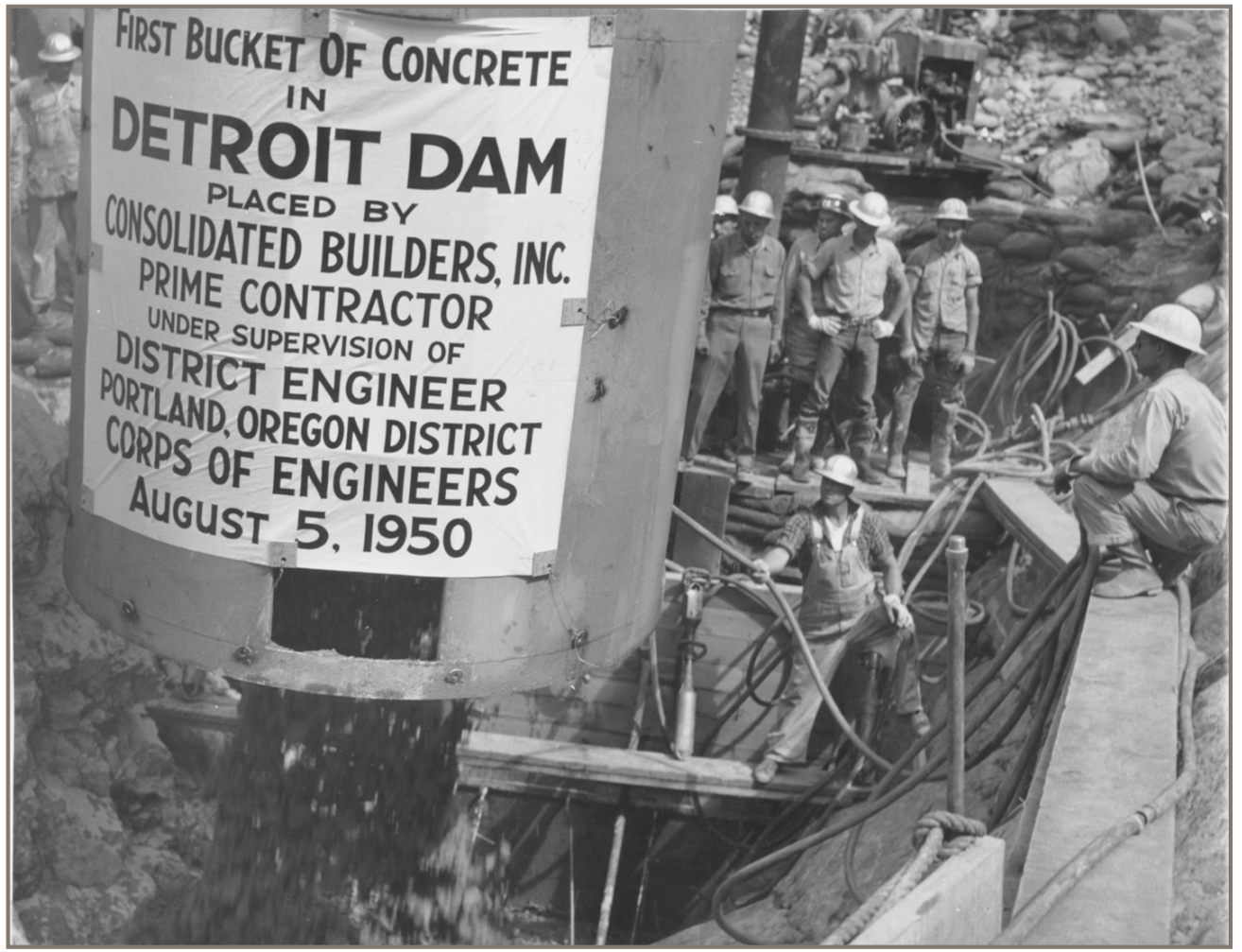
DETROIT DAM CONSTRUCTION



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DETROIT DAM CONSTRUCTION

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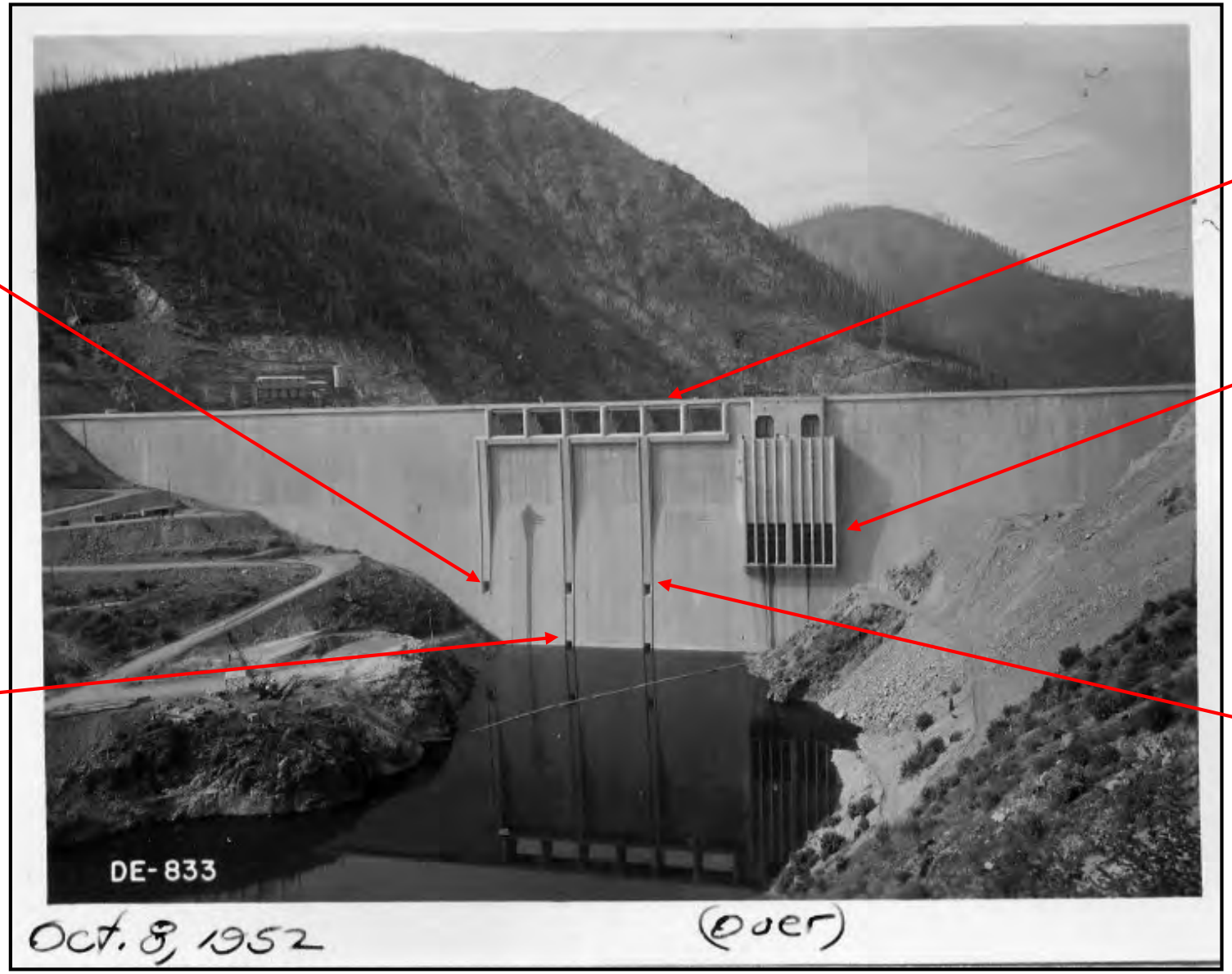
DETROIT FILLING



Test Conduit

Spillway

Penstock Intakes

Lower Regulating Outlets

Upper Regulating Outlets

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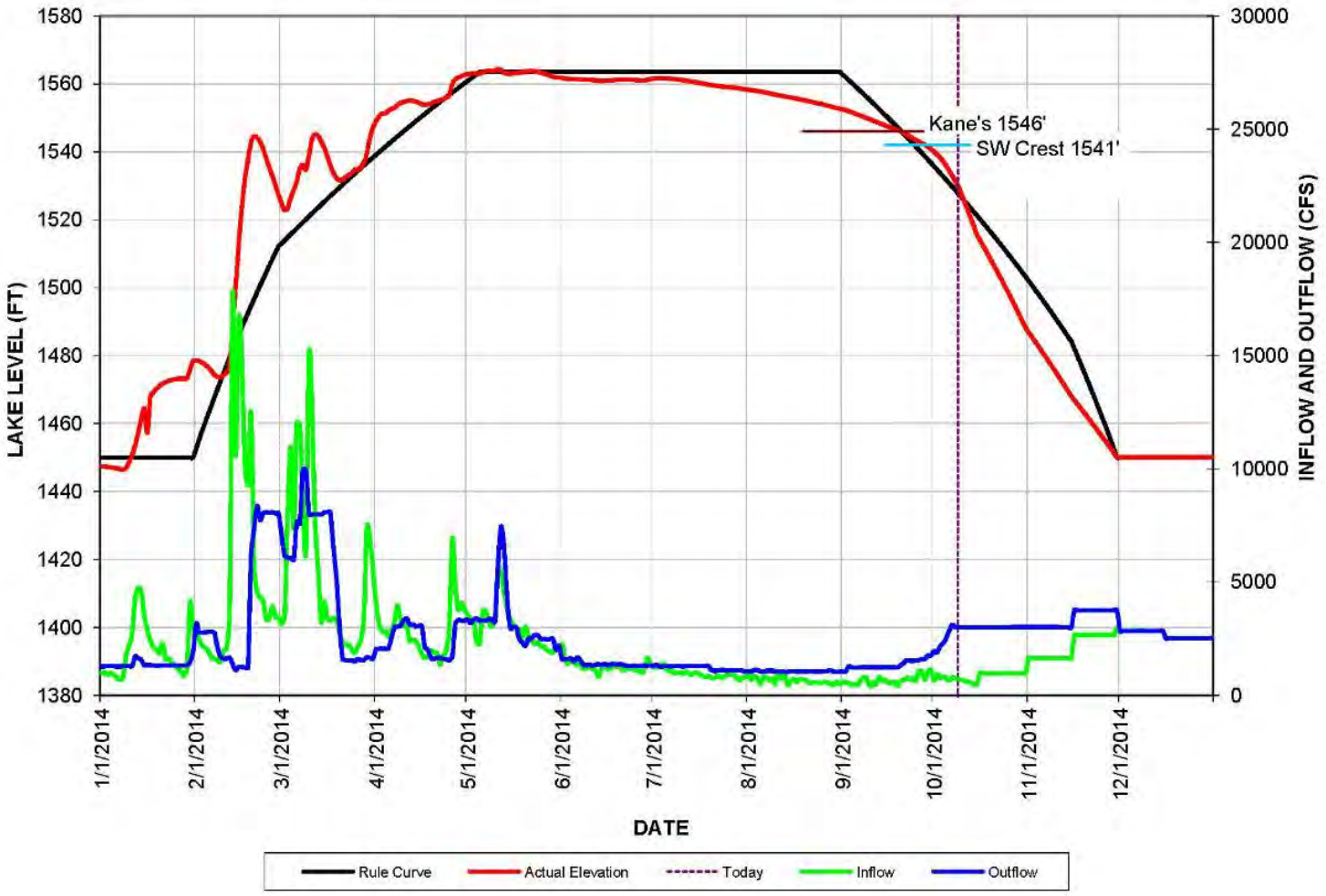
DETROIT RULE CURVE (2014 ACTUAL)



Authorized Purposes

- Flood risk management
- Hydropower
- Navigation
- Irrigation
- Fish & wildlife
- Recreation
- Water quality
- Water supply

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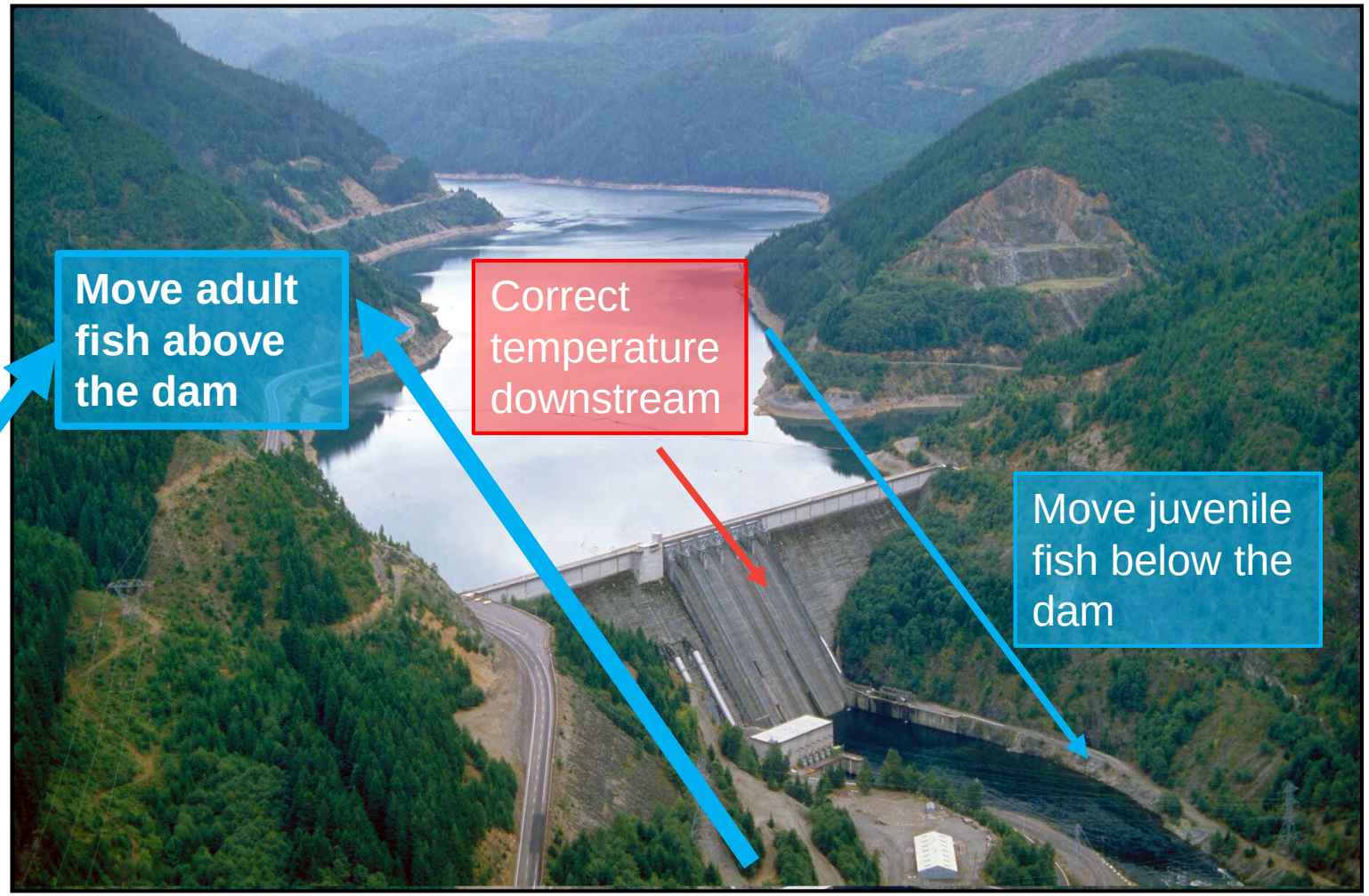
NORTH SANTIAM/DETROIT DAM BIOLOGICAL OPINION MAJOR ACTIONS



Completed
Minto Adult Fish Facility
10 miles downstream

Note - 71% of basin spawning habitat was above Detroit

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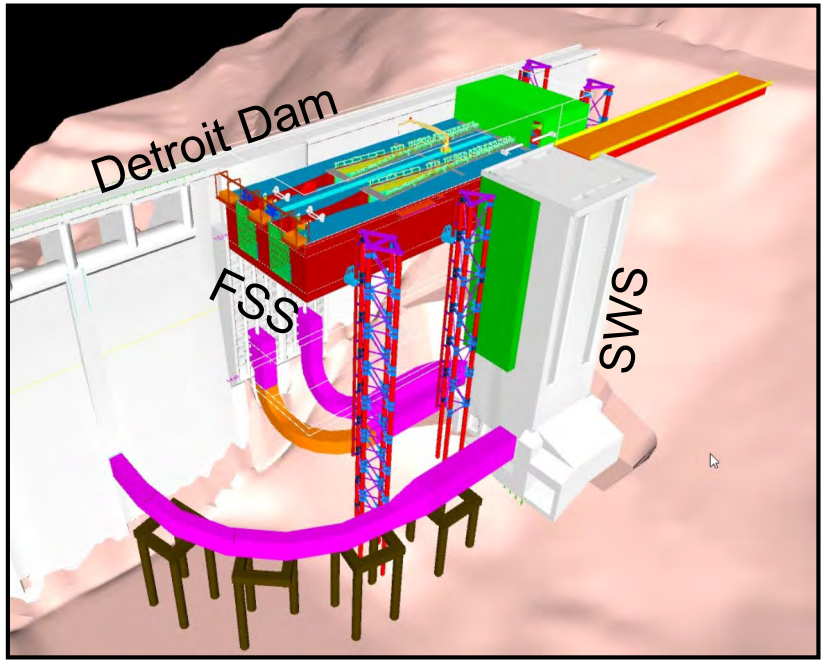
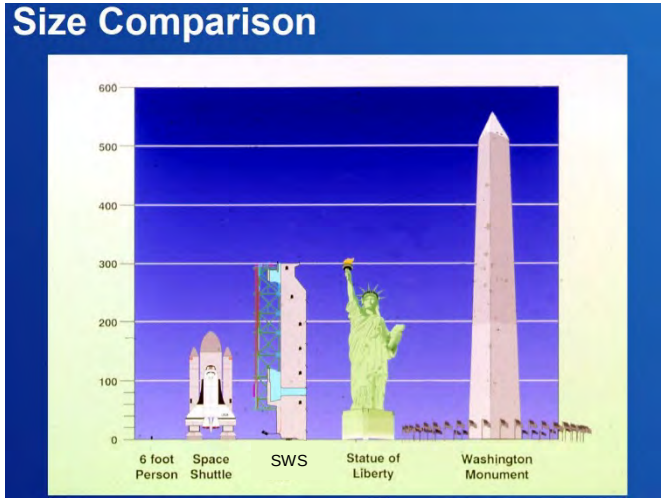
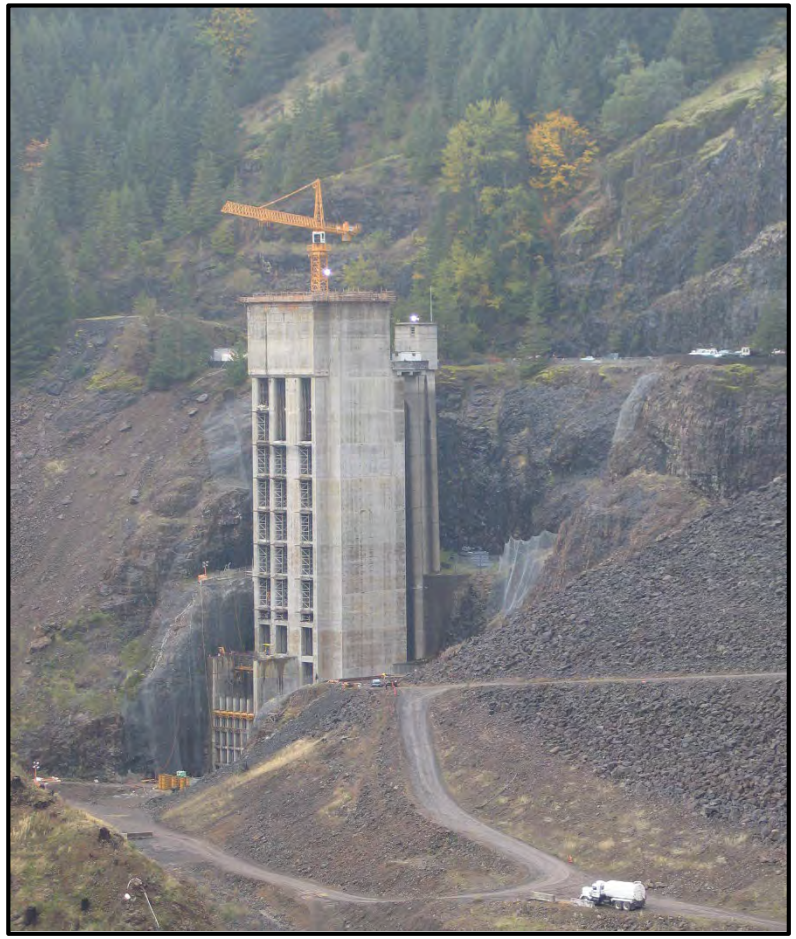
DETROIT DOWNSTREAM PASSAGE AND TEMPERATURE CONTROL





HOW TO CONSTRUCT????

Easiest – build it in the dry!
It’s how we constructed temperature control at Cougar Dam



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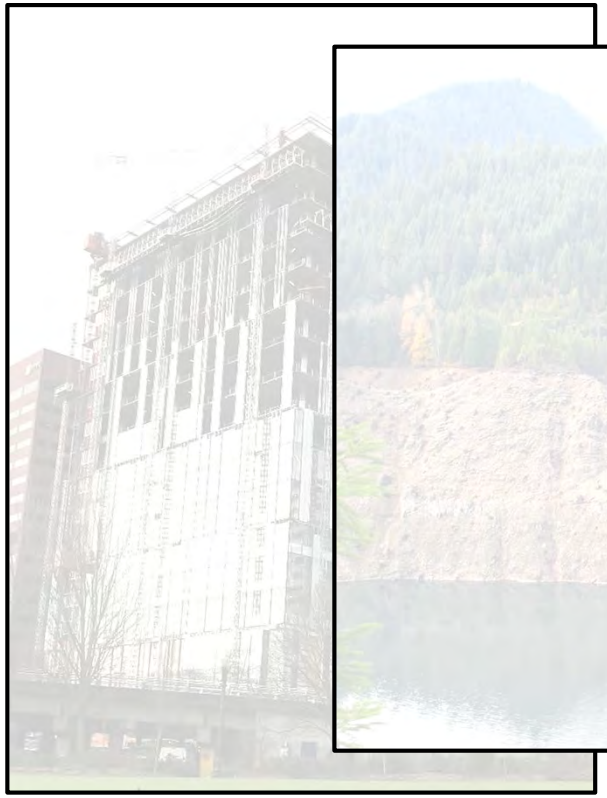

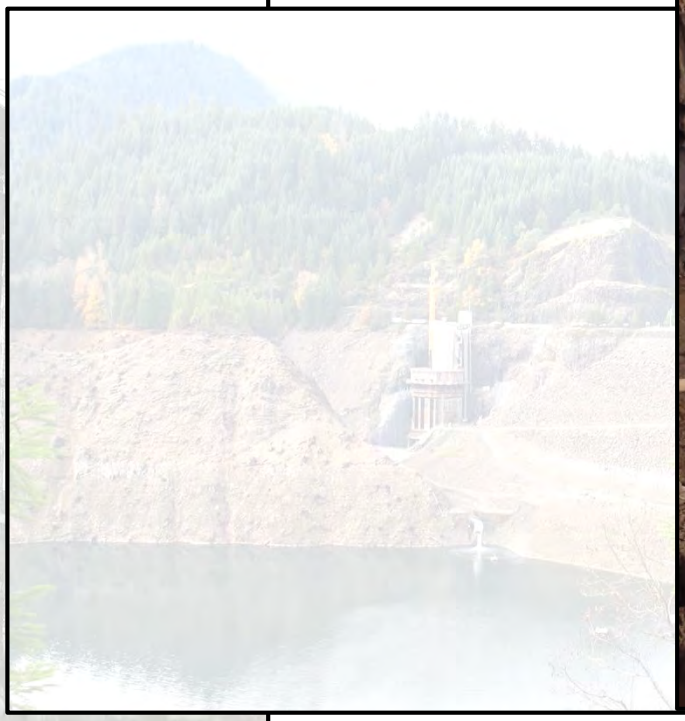

But what are the impacts at Detroit?

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DETROIT TEMPERATURE CONTROL- DRAWDOWN IMPACTS

Recreation Impacts
- Loss of business revenue

Photos – Oregonlive.com

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DETROIT TEMPERATURE CONTROL- DRAWDOWN IMPACTS

Recreation Impacts
- Loss of business revenue

30 miles downstream - Stayton
- Intake facilities designed for 750 cfs river flow
- Detroit outflow if drawdown – July – Oct. 400-500 cfs

Downstream Water Supply Impacts
- Municipal water supply
  - Cities of Salem, Stayton, Turner, Gates - withdraw municipal water
  - City of Salem alone – 192,000 residents and businesses impacted
  - No full scale backup systems exist
- Agriculture
  - USDA cropland maps
    - Over 50,000 acres of farmland within Santiam Water Control Dist. & Sidney Irrigation Co-op
  - Many crops perennial – loss of water – loss of plants

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DETROIT ALTERNATIVES

Construction Alternatives	Significant Impacts
1. No Action	None
2. Build in the Dry – 2 Year Drawdown to 1300'	Low summer flows and prolonged high turbidity • High economic impacts, • Threatens water supply for 180K people & 17,000ac of ag land, • Significant impacts to aquatic habitat and ESA listed species
3. Build in the Dry – 1 Year Drawdown to 1300'	Low summer flows and prolonged high turbidity • High economic impacts, • Threatens water supply for 180K people & 17,000ac of ag land, • Significant impacts to aquatic habitat and ESA listed species
4. Build in the Wet – 1 Year Variable Drawdown (maintain 1000cfs through summer)	Prolonged high turbidity • High economic impacts • Threatens water supply for 180K people, • Significant impacts to aquatic habitat and ESA listed species
5. Build in the Wet – No Drawdown	None
Staging Alternatives	
Mongold State Park Day Use Area	Significant impacts to recreation
Oregon Parks and Recreation Maintenance Yard	None
Detroit Lake Recreation Area Campground	Significant impacts to recreation

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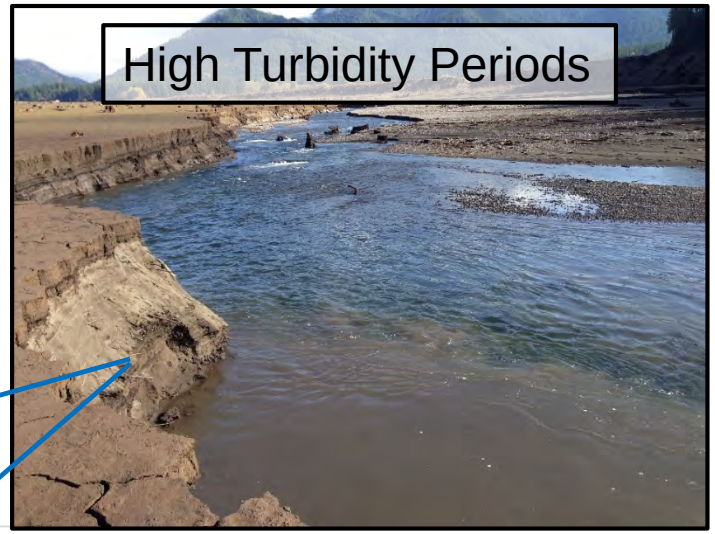
IN THE WET ALTERNATIVE 4 – 1 YEAR VARIABLE DRAWDOWN

Tower Height – during construction

Variable Rule Curve



Initial drawdown to 1,400’

Forebay Elevation and Tower Elevation

Releases maintain 1,000cfs

Spring storms – raise pool to 1450’

Building in the dry

Shallower underwater construction

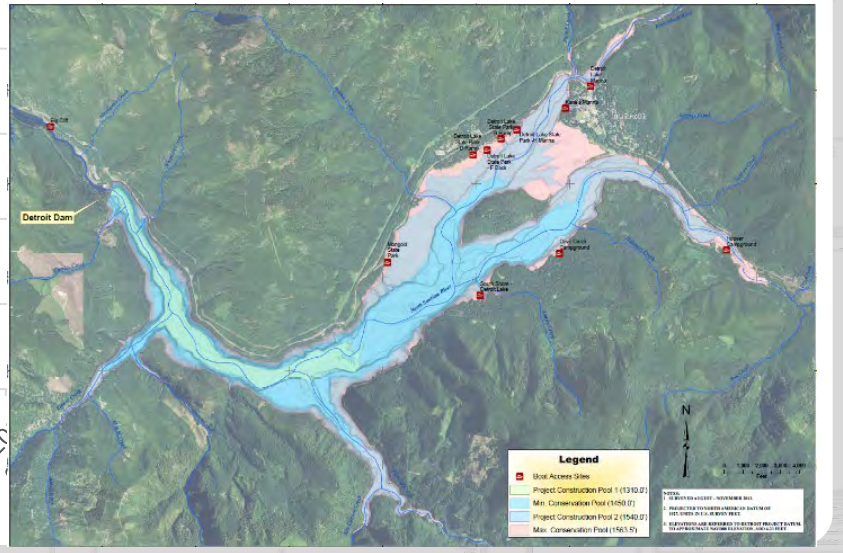
Blasting

Deep water construction

1600
1550
1500
1450
1400
1350
1300
1250
1200

7/1/2020 8/1/2020 9/1/2020 10/1/2020 11/1/2020 12/1/2020 1/1/2021 2/1/2021 3/1/2021 4/1/2021 5/1/2021 6/1/2021 7/1/2021 8/1/2021 9/1/2021 10/1/2021 11/1/2021 12/1/2021 1/1/2022 2/1/2022 3/1/2022 4/1/2022 5/1/2022 6/1/2022 7/1/2022 8/1/2022 9/1/2022 10/1/2022 11/1/2022 12/1/2022 1/1/2023 2/1/2023 3/1/2023 4/1/2023 5/1/20

Forebay Tower



ECONOMIC IMPACT

Alternative	Recreation	Agriculture	M&I Water		Total Economic Impact
2. Build in the Dry – 2 Year Drawdown to 1300'	$22,542,000	$139,000,000	$56,000,000		$217,542,000
3. Build in the Dry – 1 Year Drawdown to 1300'	$11,271,000	$50,014,000	$28,000,000		$89,285,000
4. Build in the Wet – 1 Year Variable Drawdown (maintain 1000cfs through summer)	$11,271,000	$6,426,000	$28,000,000		$45,697,000
5. Build in the Wet – No Drawdown	None	None	None		None

Note: Total economic impact does not include foregone hydropower or impacts to fish. Hydropower impacts = $30.7M; EcoNW report estimates impacts to fish at about $62.1M; Corps' 1 yr total economic impact to construct in the dry comes close to EcoNW's estimate, although Corps used different approaches to determine economic impacts.

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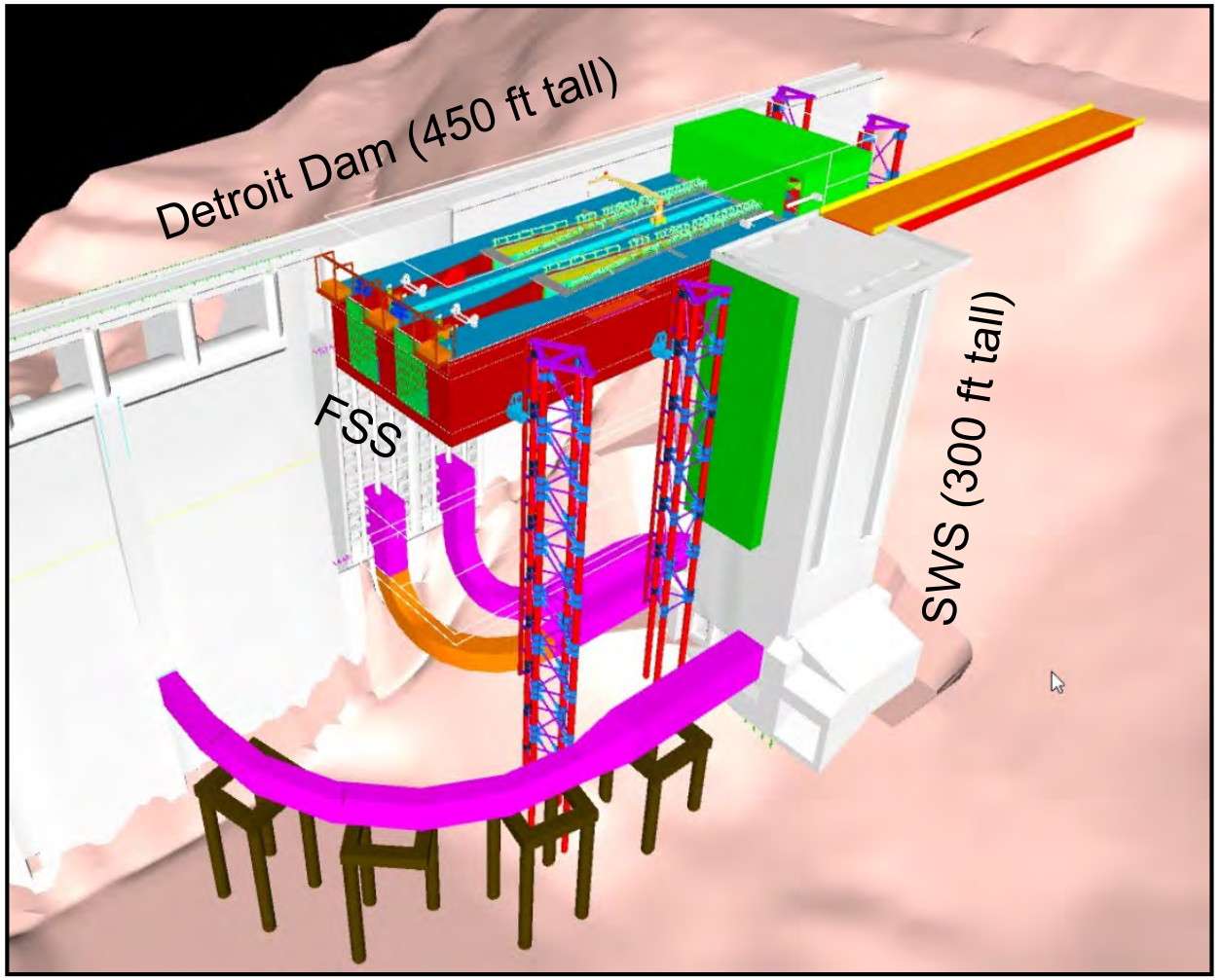
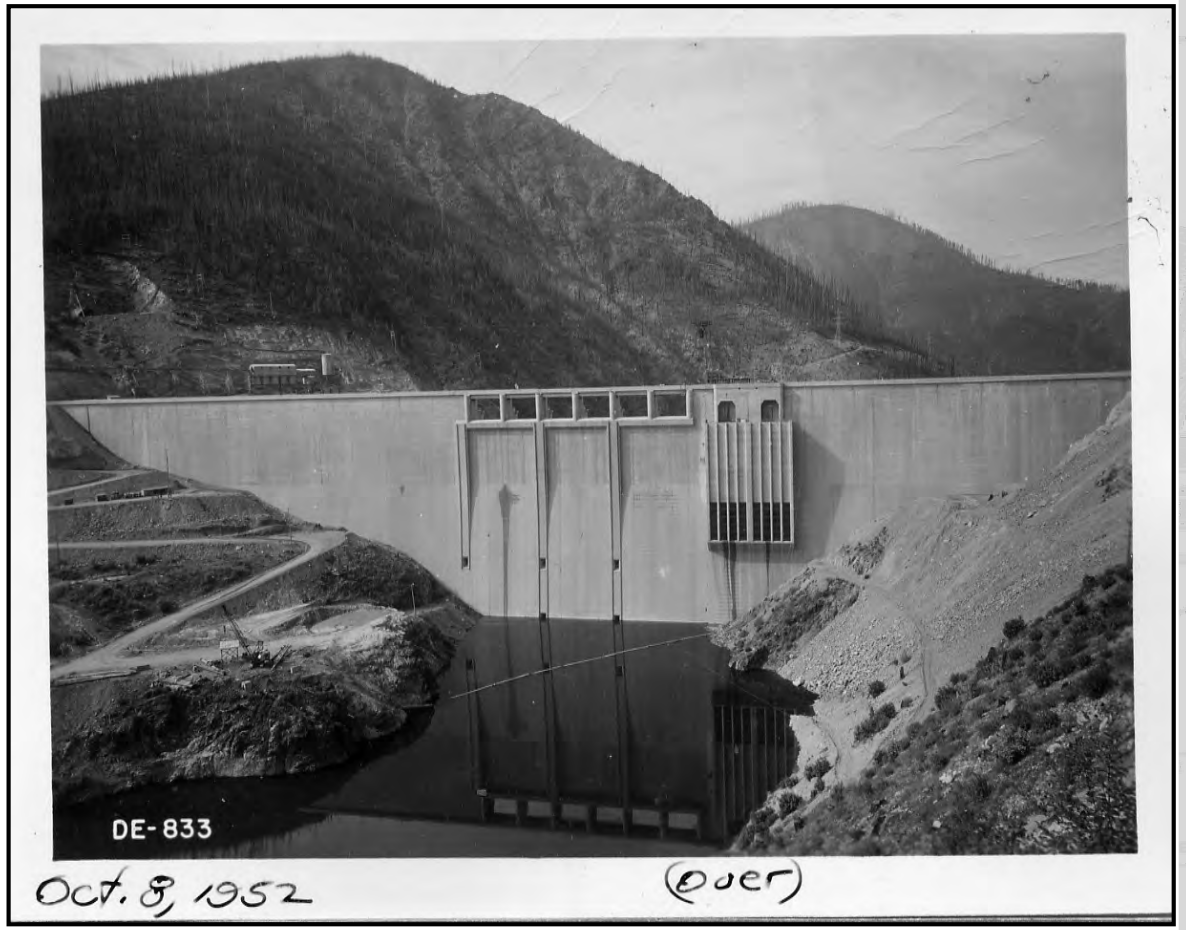
IS THIS SOLUTION CONSTRUCTIBLE UNDERWATER?





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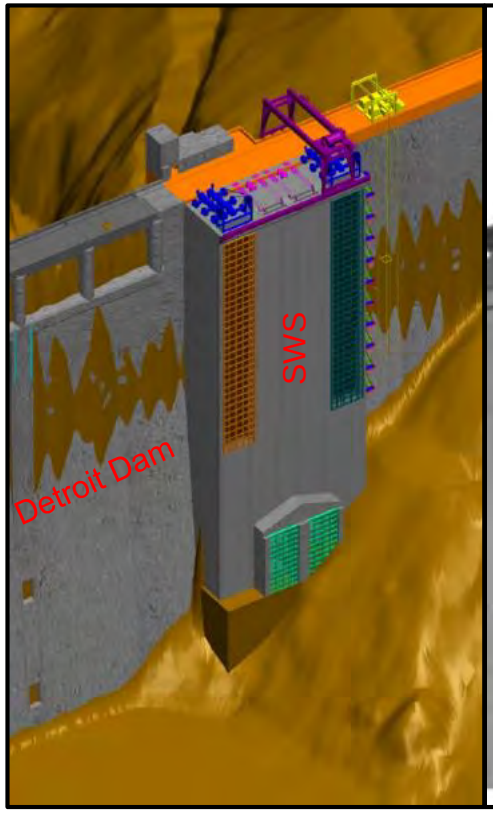
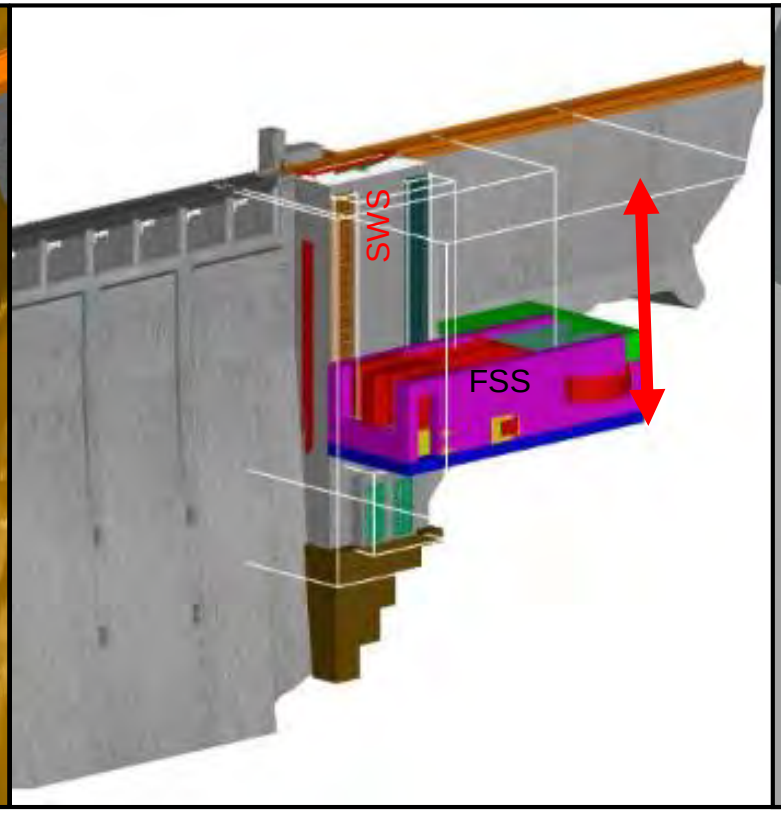
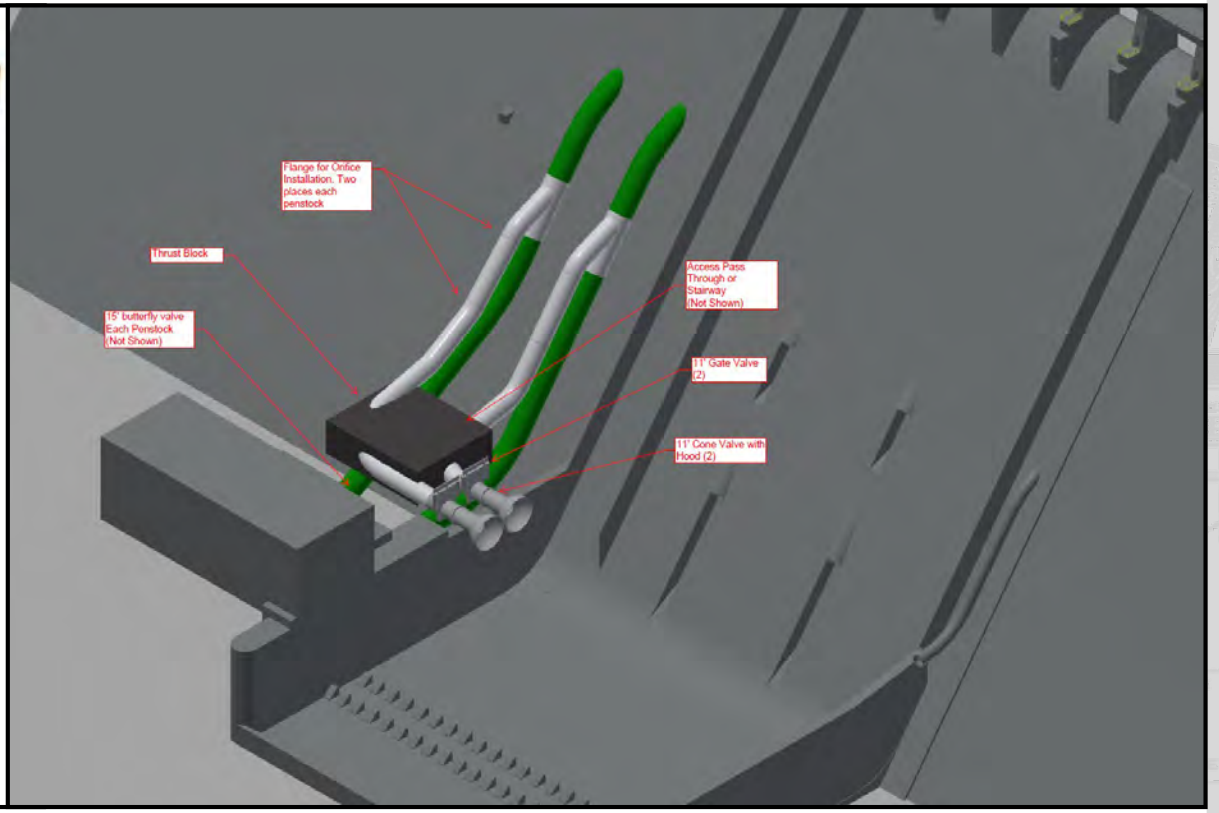
REVISED DESIGN FOR UNDERWATER CONSTRUCTION







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Detroit Downstream Passage Project: Project Timeline

Formulation Initial Array of Alternatives and Screening to Final Array

Biological Opinions Released

Willamette Valley Configuration/Operation Plan &
Detroit Engineering Documentation Report (EDR)

NEPA Environmental Assessment Analysis

Determination: Significant Impacts Likely

'08 '09 '10 '11 '12 '13 '14 '15 '16 '17

Public Outreach: BiOp

Public Outreach: WV COP

Public Outreach: Detroit Downstream Passage

Public Scoping : NEPA Environmental Impact Statement (EIS)– public provided additional alternatives

- **Analysis of Final Array of Alternatives: further develops design & confirms constructability**
  - **Refine/optimize the final array of alternatives**
  - **Detailed cost estimates**
- **NEPA Environmental Impact Statement (EIS): analyzes the impacts for each alternative on the human environment (including socioeconomic impacts).**

Implementation: PHASE 1

Implementation: PHASE 2

Design Documentation Report (DDR)

Temperature Control Plans & Specification

Temperature Construction

Downstream Passage Plans & Specification

Downstream Passage Construction

NEPA EIS Analysis

'18 '19 '20 '21 '22 '23 '24 '25 '26 '27 '28

Public Outreach: Alternatives Formulation Overview

Public Review and Comment: **DRAFT EIS**

WE ARE HERE

Regular Public Outreach

- **If construction is the selected alternative**

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DETROIT UPDATE SUMMARY

NEPA Process works!
- Scoping comments heard

Major construction will have impacts
- We have minimized as much as possible

Draft EIS will be out and recommend construction in the wet, following normal rule curve
- 3 public meetings (all 5:30 – 7:30)
  - May 29th Gates Fire Hall
  - June 4th ODFW Headquarters Commissioners Room
  - June 6th Stayton Community Center
- Comment period late May – late July

Nothing is final until the Record of Decision is signed
- Expect that to be 2020

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QUESTIONS?

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