



— BUREAU OF —
RECLAMATION



DEPARTMENT OF
ECOLOGY
State of Washington

Lower Snake River Water Supply Replacement Study

Progress Update

October 9, 2024

Agenda

- Background and Federal / State Commitment
- Study Schedule
- Progress Update
- Opportunities for Engagement
- Questions and Answers



Background and Federal / State Commitments



Federal Commitment

- Columbia River System Operations EIS/ROD, biological opinions (2020) and litigation
- Mediated agreement (12/14/23) and litigation stay (2/8/2024)
- USG commitment related to Lower Snake River dams
 - “BOR working with USDA will provide \$4.2 million to fund a water supply replacement study, in coordination with ongoing analyses by the State of Washington. This study will address the irrigation, municipal, and industrial withdrawals associated with the potential breach of the four LSR dams, if authorized by Congress.”
 - The U.S. Government (USG) will complete the aforementioned outreach and analyses by [late-2024], in cooperation with the Six Sovereigns...”
- Funded through Bipartisan Infrastructure Law (BIL) Aquatic Ecosystems Restoration Program (AERP)



State Commitment and Participation

- Washington State legislation – (S.B. 5187, 2023)
- Reclamation/Ecology partnership agreement
 - "Reclamation and Ecology agree to work collaboratively to perform the Lower Snake River Water Supply Replacement Study (Study). The Study will evaluate the impacts on water supplies in the event the four lower Snake River (LSR) dams are breached and describe options for providing replacement irrigation, and municipal and industrial (M&I) water supplies to impacted users."



How will this Study be used?

Past

1990s: Snake River
salmon and steelhead
ESA Listings
Litigation begins



2002: Lower Snake
River Juvenile Salmon
Migration Feasibility
Report/EIS



July 2020: Columbia
River System Operations
Final EIS



Continuing
Litigation



December 2023:
Resilient Columbia Basin
Agreement



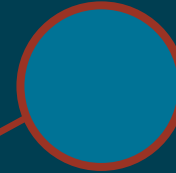
Present & Future

USG
Commitments
for LSR Dams
Benefit
Replacement
Studies

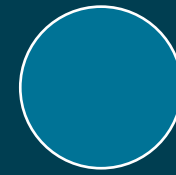
Transportation



Water Supply



Energy



Recreation



Future Analyses
and Decision-
Making



- Does not take a position on dam breaching
- Not a decision document

Companion Studies to meet
State of Washington Legislature Mandate
(Transportation, Irrigation, Energy, and Recreation)



Study Schedule



Scope and Schedule for Study

1. Project Initiation

- Tribal and Public Information Sessions (Jun, Oct 2024)
- Water User Interviews / Site Visits (ongoing)

2. Study Sections 1 & 2 (summer 2024)

- Analysis of Current Water Supply
- Water Availability Analysis

3. Study Sections 3 & 4 (fall 2024)

- Potential Solutions for Water Supply Replacement
- Identification and Analysis of Potential Implementation Issues

4. Report and Review

- Public Draft Report available for Review (Dec 2024)
- Tribal and Public Information Sessions (winter 2025)
- External Review and Independent Peer Review (early 2025)
- Final Report (mid 2025)



Progress Update

(Initial Findings are Preliminary and Subject to Change)



Water User Outreach

- Individual and small group interviews
 - Ongoing through draft Study development
 - Approximately 20 interviews conducted so far
 - Municipal, industrial, and irrigation water users, industry association representatives, and other professionals
- Ownership, management, and farming of lands is complex
 - Private vs. public, leasing, subleasing, land swaps, crop rotations, etc.
- Cost to irrigate is fundamental to viability of agriculture in study area
- Concerns about reliance on groundwater supply
- Annual crop growers and orchard/vineyard crops could be affected differently

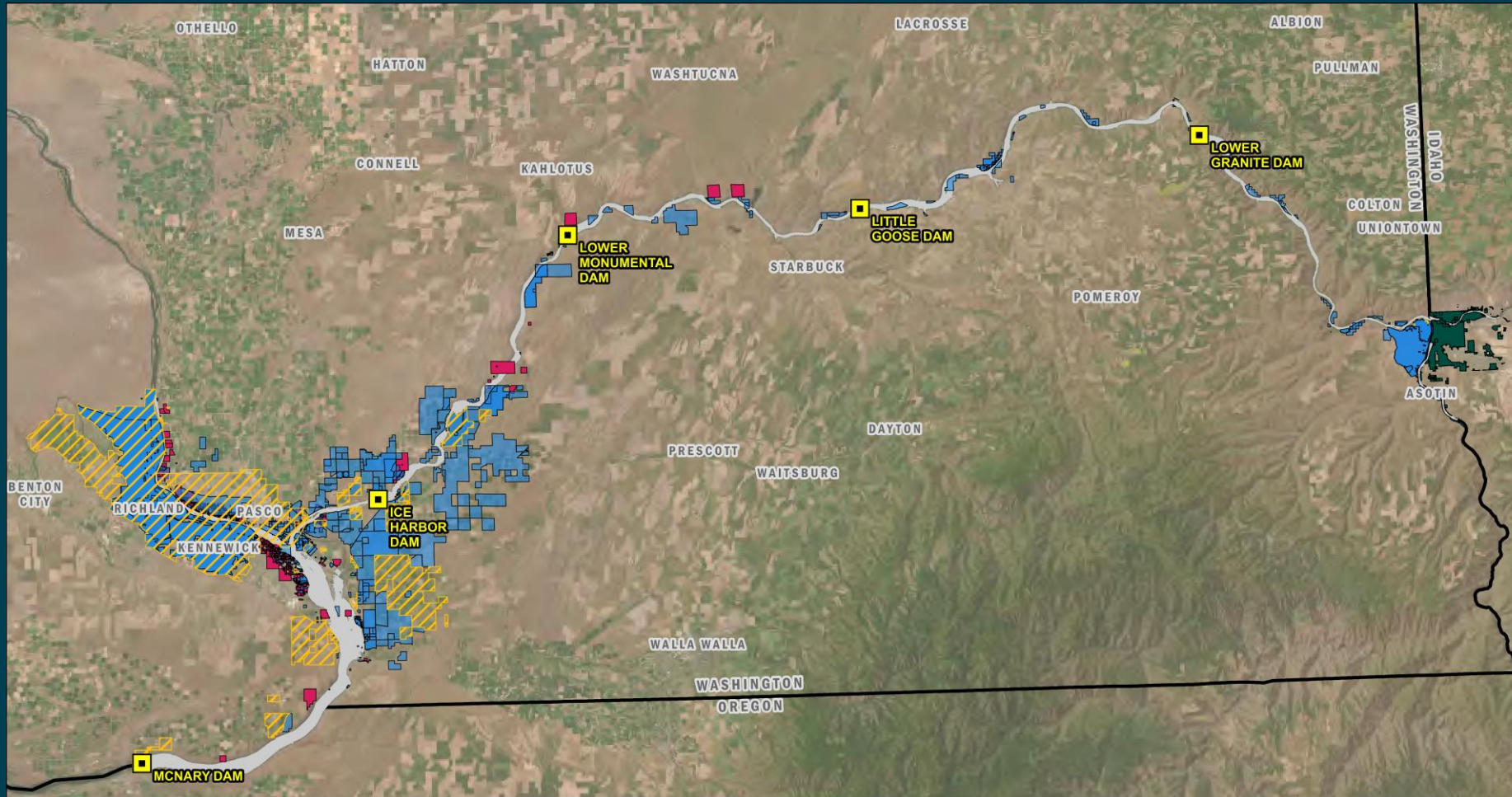


Water User Outreach

- Transition period – uncertainties, unforeseen consequences
- Potential downstream impacts of breaching (literal and figurative)
- Security of water rights
- Lewiston/Clarkston infrastructure integrated with USACE drainage and levee system
- Dike, port, greenway, and water quality infrastructure
- Farms in area contribute to emergency food supplies
- Other topics and issues (this is not a comprehensive list)



Study Section 1 – Analysis of Current Water Supply



LEGEND

- Dams
- Study Area

Water Right Type

- Certificate
- Permit
- Claim
- Adjudicated



Study Section 1 – Analysis of Current Water Supply

- Point of Diversion Type by Reach

LSR Reach	Pump Stations	Wells	Total
Ice Harbor Pool	39	60	99
Lower Monumental Pool	28	39	67
Little Goose Pool	12	44	56
Lower Granite Pool	54	127	181
Total	133	270	403

- Acres Served by Infrastructure Type

LSR Reach	Pump Stations	Wells	Total
Ice Harbor Pool	62,743	10,027	72,769
Lower Monumental Pool	1,415	478	1,893
Little Goose Pool	672	798	1,470
Lower Granite Pool	1,198	421	1,619
Total	66,028	11,724	77,751

- Data for McNary Pool collected to address potential related issues associated with existing infrastructure



Study Section 1 – Analysis of Current Water Supply

- Irrigation Water Use
 - Dominant Category for all Water Use (Exception of Lower Granite Pool)
 - Multiple Years of Crop Data used
 - Washington State Department of Agriculture
 - United States Department of Agriculture
 - Points of Diversion and Points of Withdrawal related to Places of Use
 - Crop Irrigation Requirement (CIR) using Washington Irrigation Guide and other approaches



Study Section 1 – Analysis of Current Water Supply

- **Municipal & Industrial (M&I) Water Use**
 - 143 Water Rights list Commercial or Industrial as at least one Purpose of Use
 - **Community Water Systems (Group A/B)**
 - Washington State Department of Health (Office of Drinking Water)
 - Idaho Department of Environmental Quality
 - **Permit-exempt wells**
 - Up to 5,000 gpd in Washington (RCW 90.44.050)
 - Up to 13,000 gpd in Idaho (Idaho Code § 42-111 and 42-227)



Study Section 1 – Analysis of Current Water Supply

- Economic Analysis

- Purpose is to understand and quantify the benefits associated with the water supply associated with the lower Snake River dams
- Research into Irrigation and M&I economic implications
 - Outreach, literature, past studies, etc.
 - Crop budgets
- Regional (8 County) Economic Analysis – Input/Output Model IMPLAN
 - Asotin
 - Benton
 - Columbia
 - Franklin
 - Garfield
 - Nez Perce (Idaho)
 - Walla Walla
 - Whitman



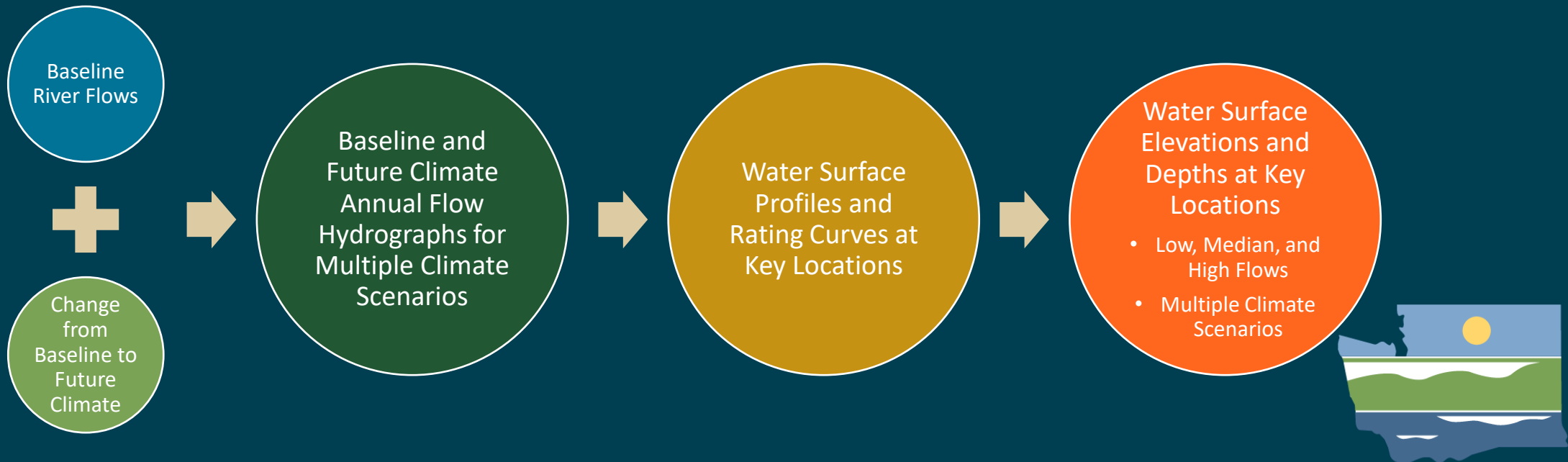
Study Section 2 – Water Availability Analysis

- Surface Water and Groundwater
- Short-term (seasonal) and Long-term (climate change) Variability
- Spatial Variability



Study Section 2 – Water Availability Analysis

- **Surface Water Data Sources:**
 - CRSO MO3 (USACE)
 - River Management Joint Operating Committee Part 2 (RMJOC-II)
- **Multi-step process:**



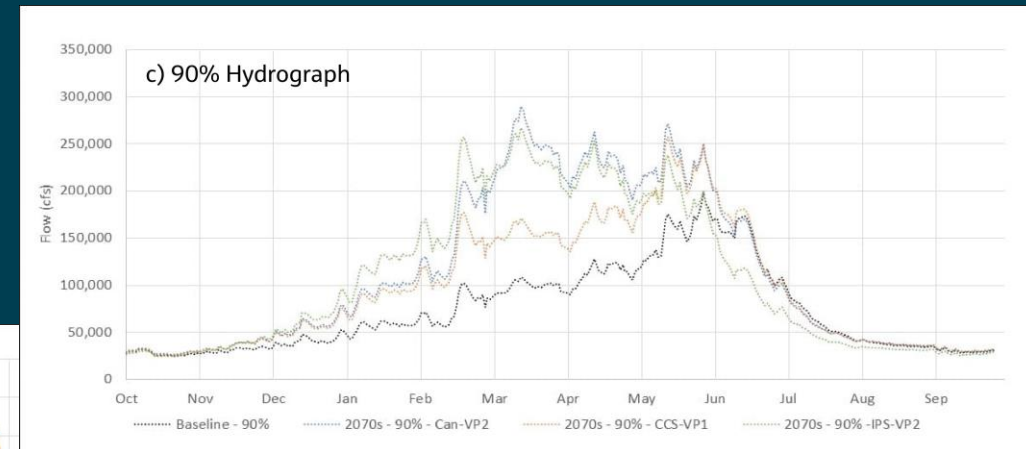
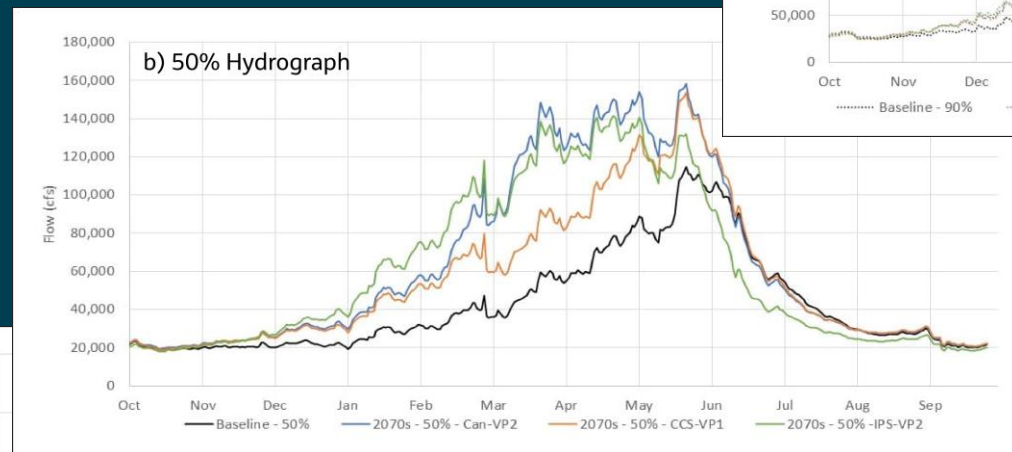
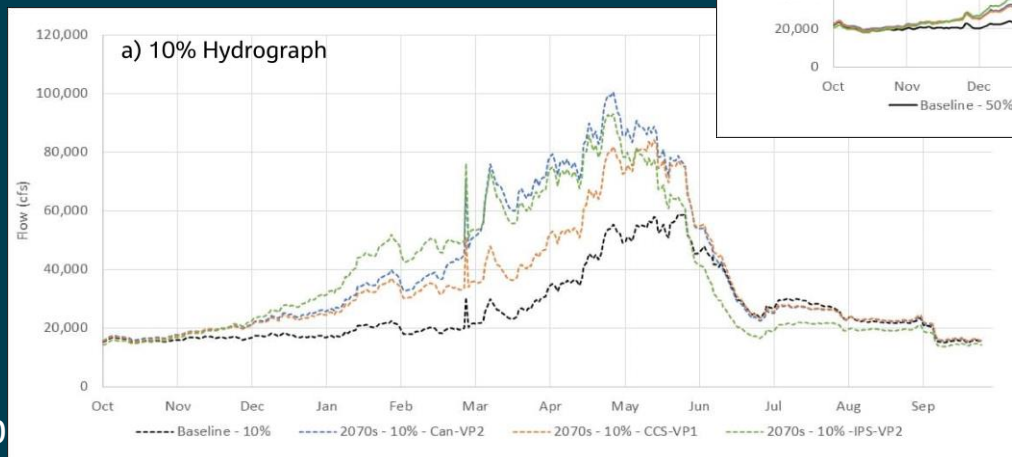
Study Section 2 – Water Availability Analysis

- Flow hydrographs were compared across all four locations and showed very little variation
- Inflows to Lower Granite Dam used for simplicity



Study Section 2 – Water Availability Analysis

- Climate change analysis shows increases in flow and earlier peak in annual hydrograph



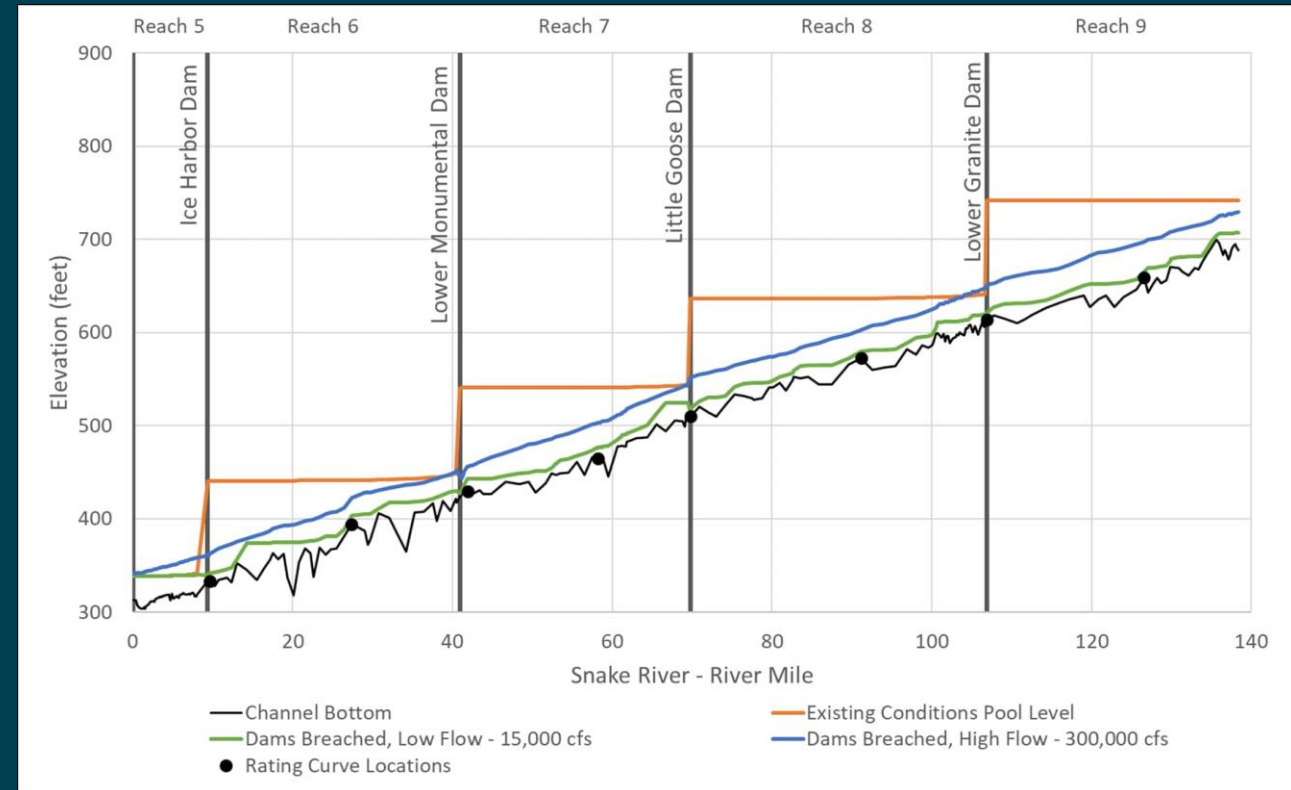
Annual Low Flow Rates

Scenario	10% Flow Hydrograph (cfs)	50% Flow Hydrograph (cfs)	90% Flow Hydrograph (cfs)
Baseline	15,000	18,600	25,100
2070 – Can-VP2	15,400	19,500	26,600
2070 – CCS-VP1	15,400	18,800	25,800
2070 – IPS-VP2	13,800	18,000	24,600



Study Section 2 – Water Availability Analysis

- In Low Flow scenarios if dams are breached, water surface elevation could drop between 35-120 feet

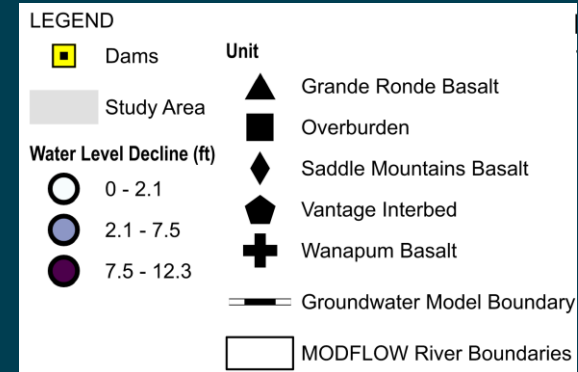
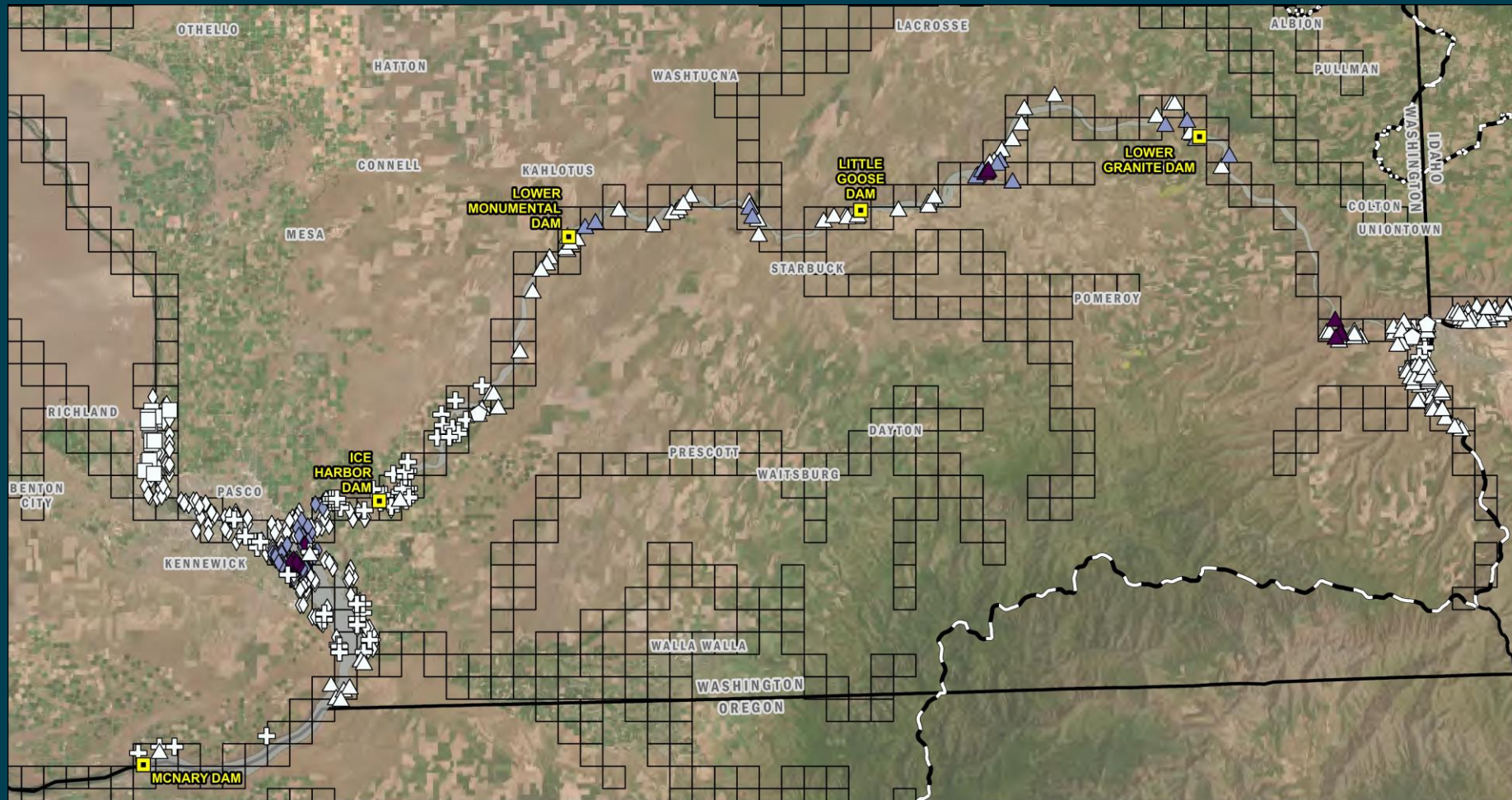


Study Section 2 – Water Availability Analysis

- Groundwater Data Sources:
 - Dept. of Ecology's Well Report Search Database
 - Idaho Department of Water Resources "Find a Well" Database
 - Columbia Plateau Regional Aquifer System (CPRAS) model (USGS)
- Steady-state numerical groundwater model simulations
 - Baseline (current groundwater conditions) vs. Dam Breach levels
 - Boundary condition of lower Snake River at Low Flow post-breach



Study Section 2 – Water Availability Analysis



Study Section 2 – Water Availability Analysis

- Continuing to develop analysis and associated exhibits
- Given current assumptions, surface water availability in the lower Snake River is sufficient to meet existing demands



Study Section 3 – Potential Solutions for Water Supply Replacement

- Team generated 38 initial concepts
 - Screened down to shorter list of potential solutions for further development in technical workshop with Reclamation and Ecology
- Approach for formulating replacement solutions does not involve “importing” water from elsewhere in the region
- Seeking to develop solutions that could be implemented and operable prior to potential drawdown period
- Currently advancing conceptual designs and cost estimates



Study Section 3 – Potential Solutions for Water Supply Replacement

- Ideas being developed further include one or more combinations of:
 - New intake, fish screen, pump station, and large diameter pipeline to existing water users
 - New diversion with gravity conveyance system to existing water users
 - New pumped storage reservoir
 - Expansion/modification of existing pump station(s)
 - Conversion of existing surface water diversion(s) to groundwater well(s)
 - Standpipe wet well pump stations with perforated intake pipes under river



Study Section 4 – Identification and Analysis of Potential Implementation Issues

- Transition from current conditions to potential future dam breach state
- Phasing/sequencing constraints and impacts
- Sedimentation issues
- Environmental compliance – NEPA framework approach



Near-Term Work Activities

- Ongoing water user interviews
- Ongoing refinement of Study Sections 1-2
- Continued advancement of Study Sections 3-4
- Continued development of Draft Report



Engagement Opportunities

- Early 2025 – Review of draft document
- Early 2025 – In-person Tribal and Public information sessions presenting the draft report



Contact Information:

<https://www.usbr.gov/pn/fcrps/lrws.html>

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