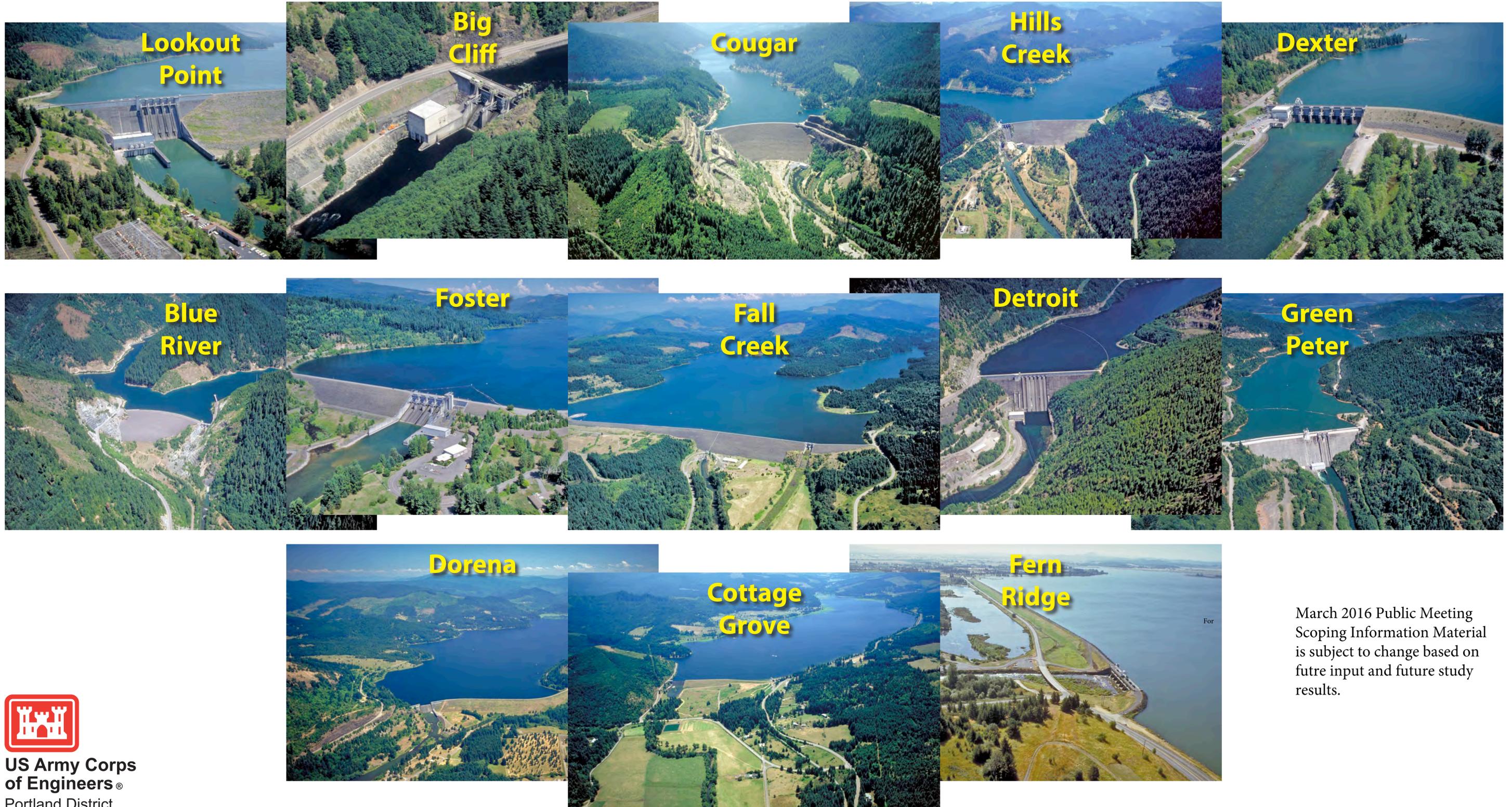


Willamette Valley Project: 13 multi-purpose dams



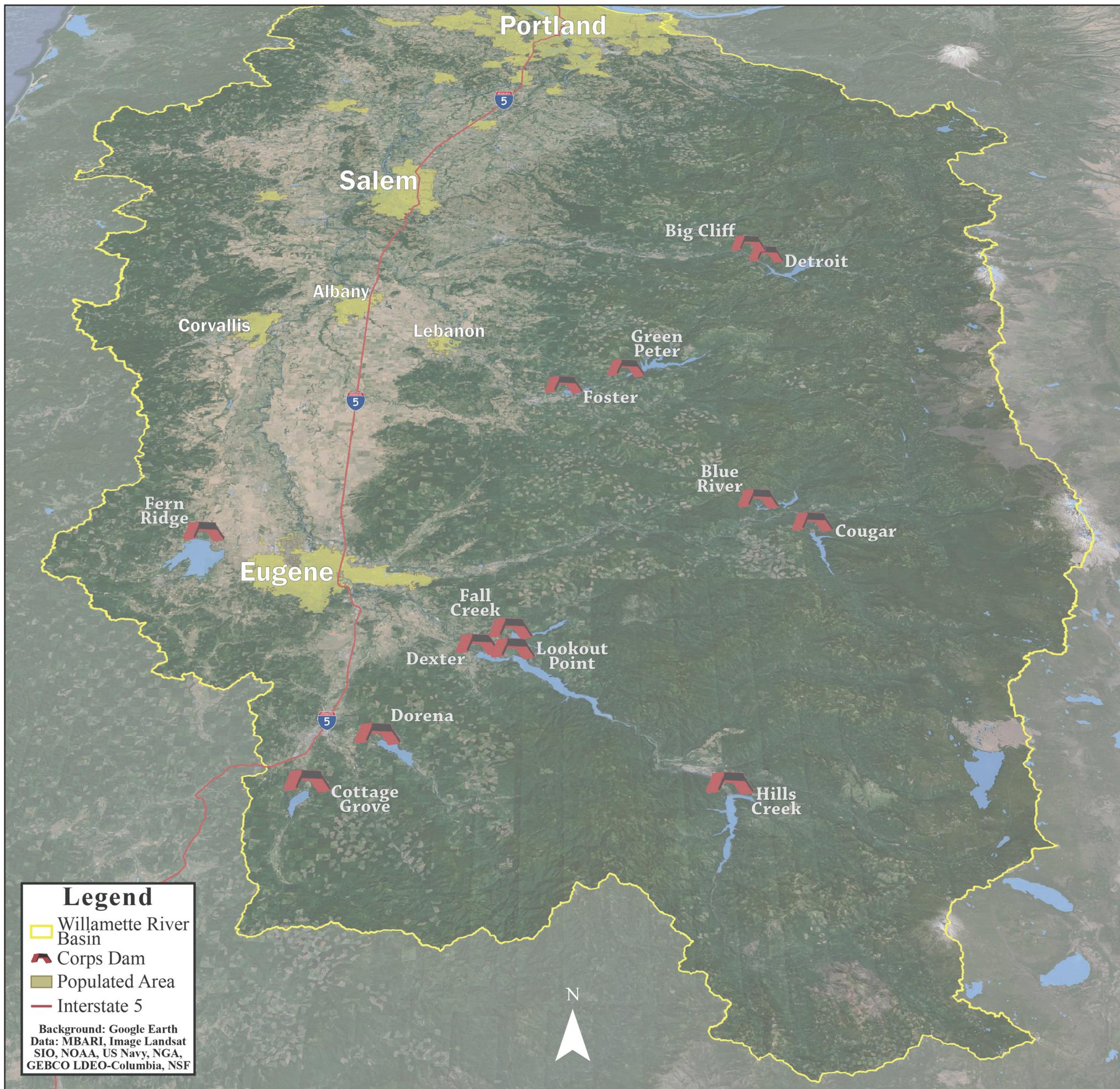
March 2016 Public Meeting
Scoping Information Material
is subject to change based on
future input and future study
results.

Willamette Valley dams and reservoirs

Authorized purposes

- Flood risk management
- Hydropower production
- Navigation
- Water quality
- Irrigation
- Municipal & industrial water supply
- Environmental stewardship
- Recreation





The U.S. Army Corps of Engineers operates a system of 13 dams and reservoirs in Oregon's Willamette River Basin that provide many benefits to the region and nation.

Although the Willamette basin covers less than 14% of Oregon's total land mass, more than 70% of the state's residents reside in it. It is the heart of Oregon's economy.

The Willamette River and its tributaries make it possible to support today's population, high levels of agricultural productivity, and a healthy natural environment.

Stewardship of Oregon's water resources is critical to its future.



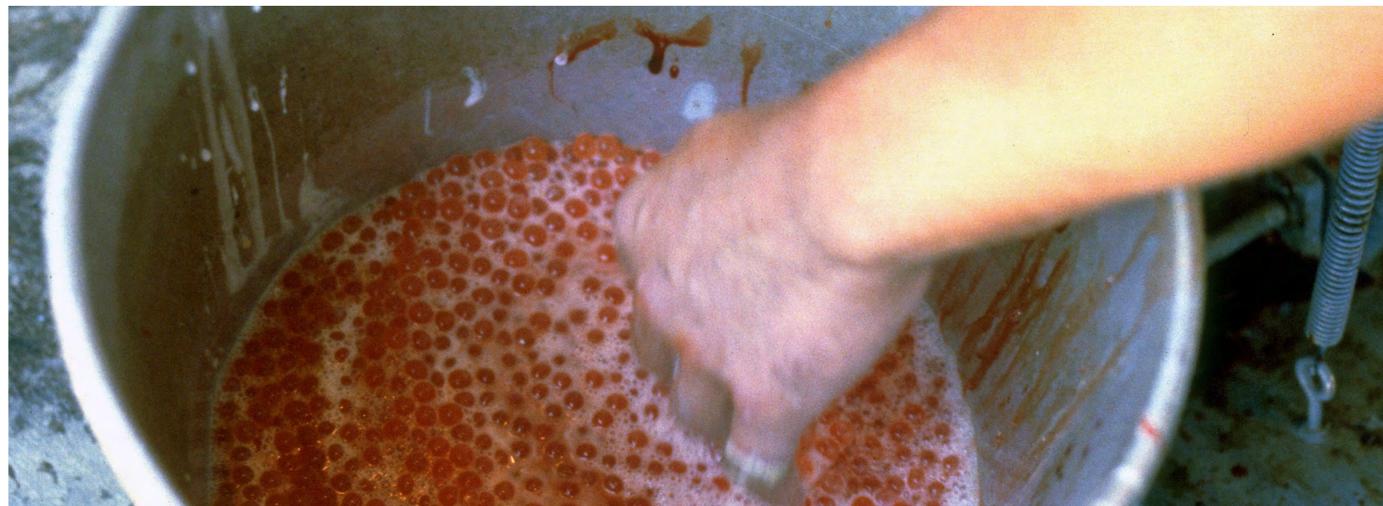
Spring refill for use during conservation season

- **Meet downstream flow targets for fisheries enhancement**
- **Provide small amount for irrigation**
- **Balance other authorized uses**



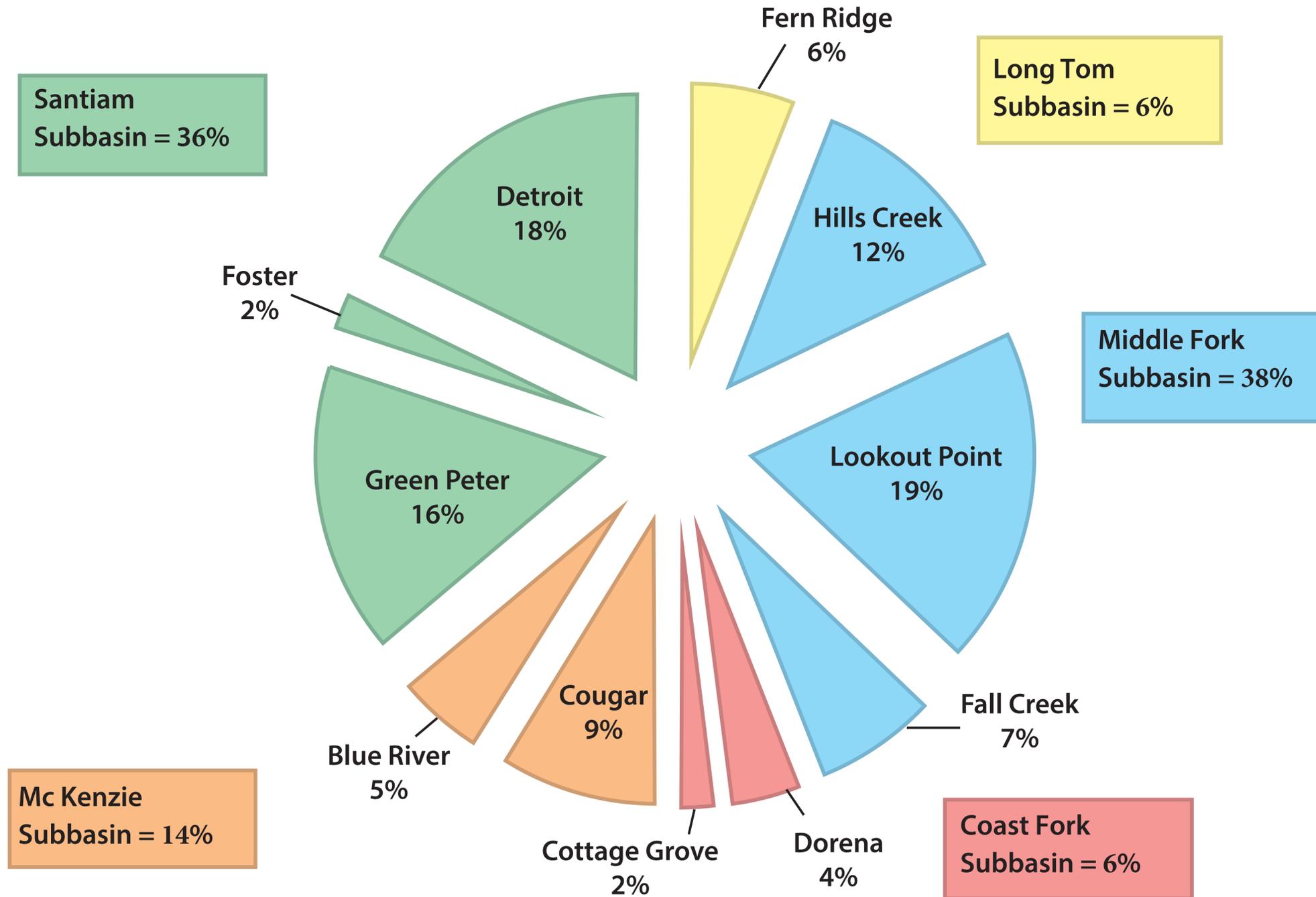
Carefully controlled flows provide water for fish

- Minimize stranding of adults and juveniles
- Provide spawning, incubation and rearing flows; prevents dewatering of eggs
- Support juvenile passage
- Moderate downstream water temperatures below Cougar, Detroit and Lookout Point.
- Meet Biological Opinion requirements



Willamette Conservation Storage

Total = ~1.6 million acre-feet



Not enough water for a growing Valley

Sustainable water supplies serve vital public and environmental functions and support regional and national economic growth.

HOWEVER

Population growth, increasing development, expanding irrigation and required flows for threatened and endangered fish have placed increasing demands on the Valley's current sources of water: natural stream flows, groundwater and minimal federal stored water.

Population projections*

2015: 1,720,000

2035: 2,196,000

2065: 3,068,000

* Does not include City of Portland

The State of Oregon has long identified the federal Willamette reservoirs as a source of water supply for growing communities and industries in the Willamette Valley.

HOWEVER

No specific allocation for uses of the 1.6 million acre-feet of conservation season reservoir storage space was set when the dams were first authorized by Congress.



How to meet future Valley water needs

These supply measures are currently used (to some degree) or under consideration

- Conservation, incentive programs, regulations, education, drought contingency planning
- Expansion of surface water diversions
- Expansion of ground water withdrawals
- Storage of off-peak season water
- Aquifer storage/recovery
- Establish inter-supplier linkages & regional authorities
- Use of federal reservoir storage space



Are there other water supply measures to consider?

Constraints specific to reservoir storage measures

- Must maintain benefits of operating dams to reduce flood risks and no changes to existing project rule curves
- Must maintain required flows for endangered and threatened fish
- Limit reservoir storage space reallocation to what is already available in conservation pool (1.6 million acre-feet)
- Structural modifications to dams not on the table
- Assume water may not be available every year to meet demands.

Feasibility Study Goals

Determine how to reallocate reservoir storage space during the spring and summer to help meet current and future needs for municipal and industrial water supply, irrigation and fish and wildlife uses.

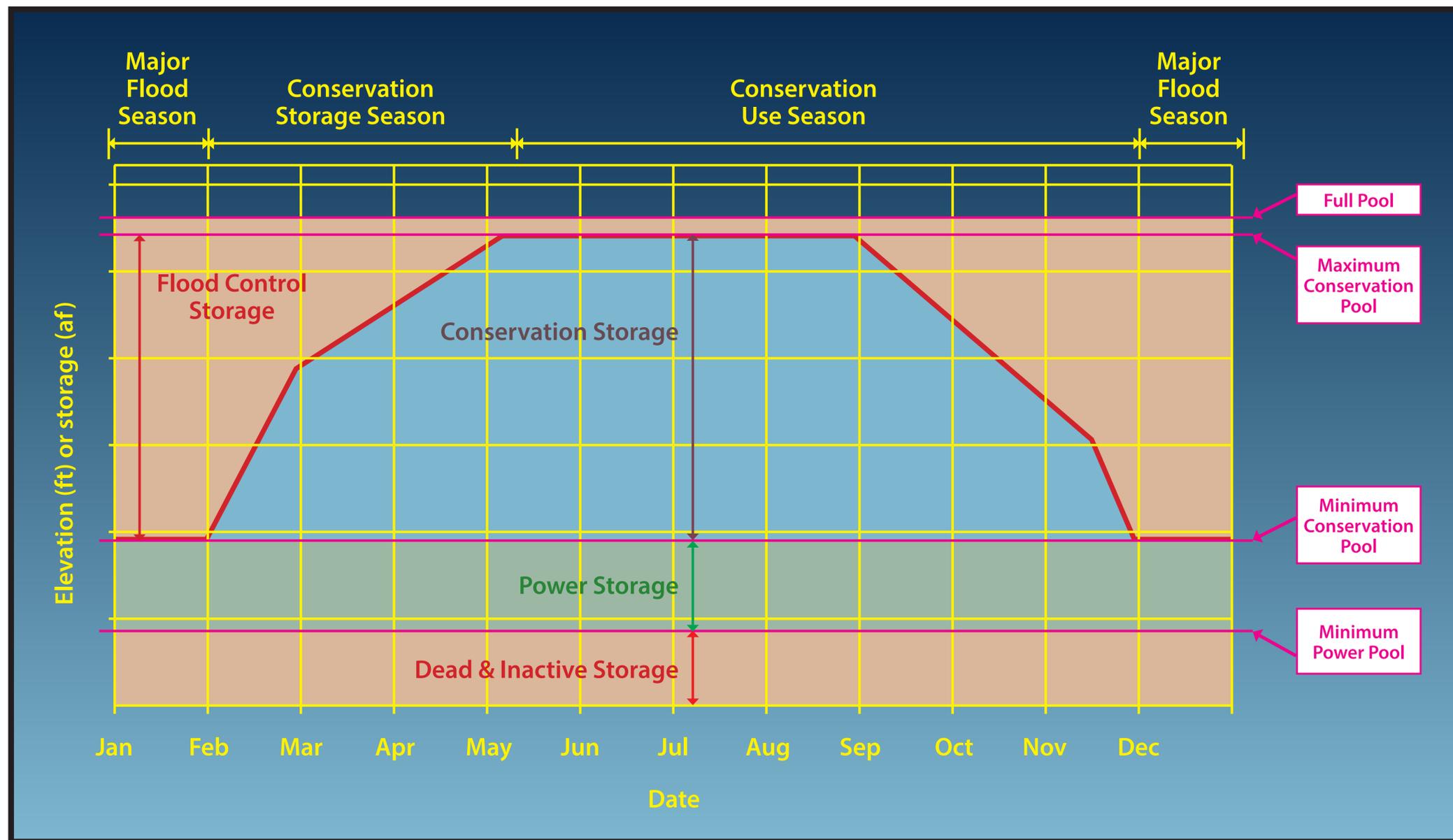
The study will evaluate and minimize impacts to those aspects of current operations that people value today (hydropower, recreation and others).

Formulate a process for administering new water contracts in the basin if an approved study results in distribution of storage space.

The agencies will determine what institutional arrangements are needed to administer the contracts.



Multi-Purpose Reservoir Water Control Diagram



Reservoirs drawn down in fall to create flood storage.

Reservoirs begin refilling in late winter, with the goal of having them full for conservation purposes by mid-May.

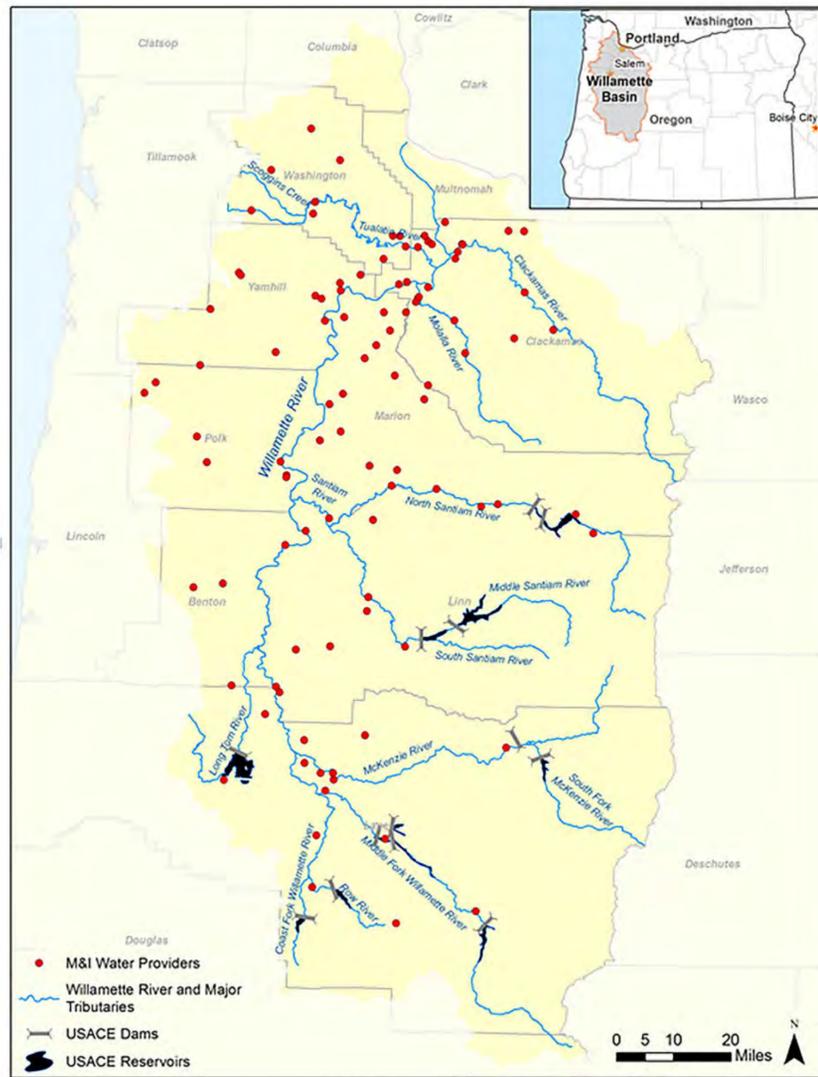
Lake levels vary between mid-May and early September and from year to year, depending on inflow and releases to/from the reservoir.

This Water Control Diagram generally illustrates how storage space in a reservoir is managed for flood damage reduction at any given time of the year. Details will vary by reservoir.



US Army Corps
of Engineers®
Portland District

Municipal & industrial water supply



Municipal and industrial water providers in Willamette River Basin

Study area population projections*

2015: 1,720,000

2035: 2,196,000

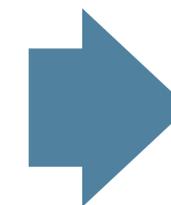
2065: 3,068,000

* Does not include City of Portland



DEMAND DATA SOURCES FOR ANALYSIS

- Water Rights Information System data for the Willamette Basin
- Water Management and Conservation Plans
- Water System Master Plans
- Drinking Water System Data
- Regional Water Providers Consortium Population Forecasts
- OWRD 2015 Statewide M&I Demand Forecast



Current and future water projections

Water stored and released for threatened and endangered fish

(listed under Endangered Species Act)

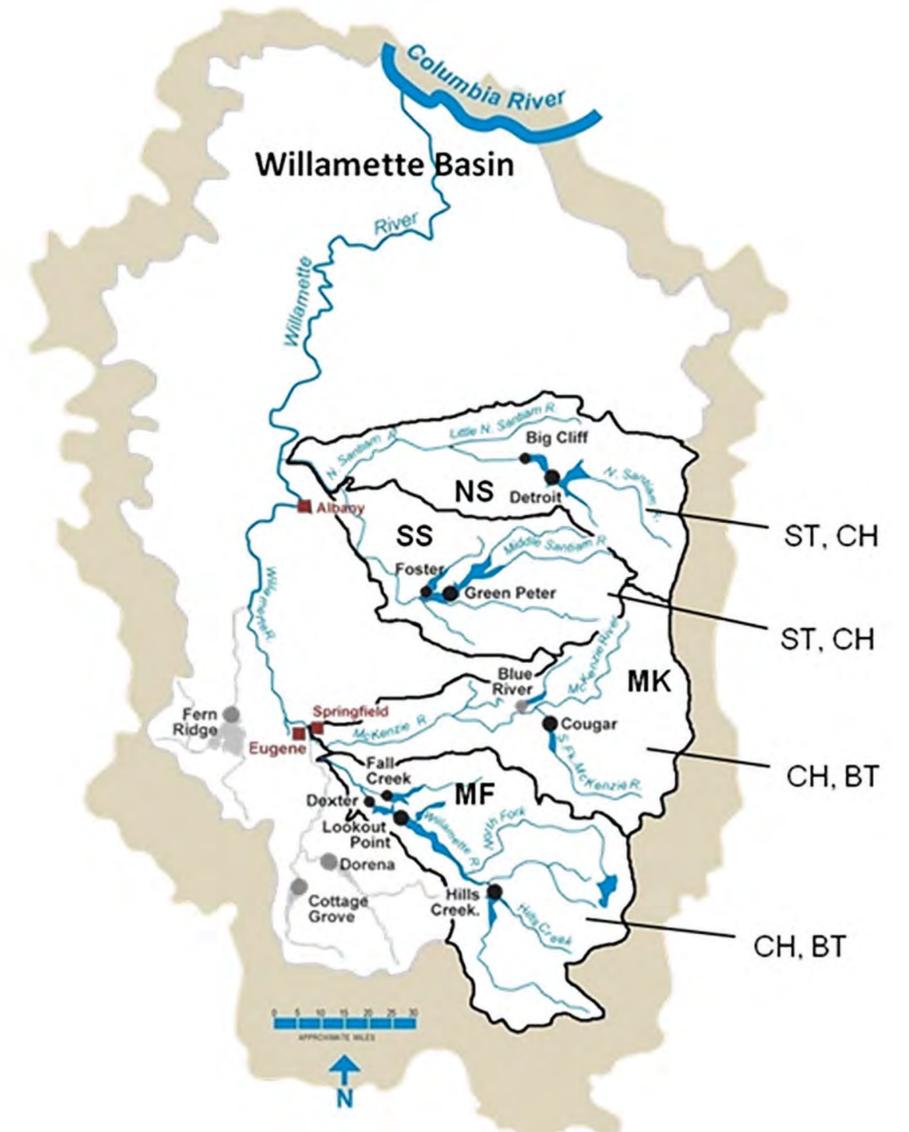
Provides tributary and mainstem Willamette minimum flows for fish April through October and tributary maximums in September

- Minimizes stranding of adults and juveniles
- Provides spawning, incubation and rearing flows; prevents dewatering of eggs
- Supports juvenile passage
- Moderates downstream water temperature below Cougar, Detroit and Lookout Point
- Meets Biological Opinion requirements



Resident fish spend entire lifecycle in fresh water

- Adults spawn in tributaries of Willamette River
- Juveniles migrate to ocean for part of their life
- Return to same stream where they were born



Species
ST – Steelhead Salmon
CH – Chinook Salmon
BT – Bull Trout

Subbasins
NS – North Santiam Subbasin
SS – South Santiam Subbasin
MK – McKenzie Subbasin
MF – Middle Fork Subbasin

Irrigation

Factors contributing to increased irrigation need

- Prolonged dry and drought conditions
- Climate change and hydrology
- Nurseries are diversifying operations to include raising more field crops
- Change from dry land to irrigated farming to increase profitability
- Change to higher value crops (e.g., blueberries, hazelnuts)



Current source of irrigation water is from natural flow, groundwater and minimal federal stored water.



Feasibility Study Process Overview

Scoping

Collect information from public, agencies and others on issues to consider in meeting future municipal and industrial water supply, irrigation, and fish and wildlife water needs.



This informs the analysis of potential impacts under the National Environmental Policy Act and development of criteria to evaluate and compare alternatives that help meet project goals.

Public communication continues through the project.



Develop & Evaluate Alternatives

- Agree on criteria for evaluating alternatives.
- Develop array of alternatives that meet study purpose, using public input and technical information on current and future water needs.
- Verify that alternatives are consistent with Corps authorities and priorities.

INFORM

Corps will share this information including how public input was considered in development of final criteria and the array of alternatives.

The study process focuses on technically and economically feasible options that meet project objectives while protecting the environment.

Tentatively Selected Plan

- Identify leading alternative based on analysis and the draft NEPA review.
- TSP advances for more detailed evaluation and public, technical, legal and policy reviews.



The Tentatively Selected Plan and related documents available for public review. The Corps and OWRD will host discussions to share information and receive comments.

Agency Decision

Rigorous senior-level Corps review of cost, engineering, environmental and economic benefits.

Civil Works Review Board

Decides if documentation and Report ready for next required reviews.

Chief's Report

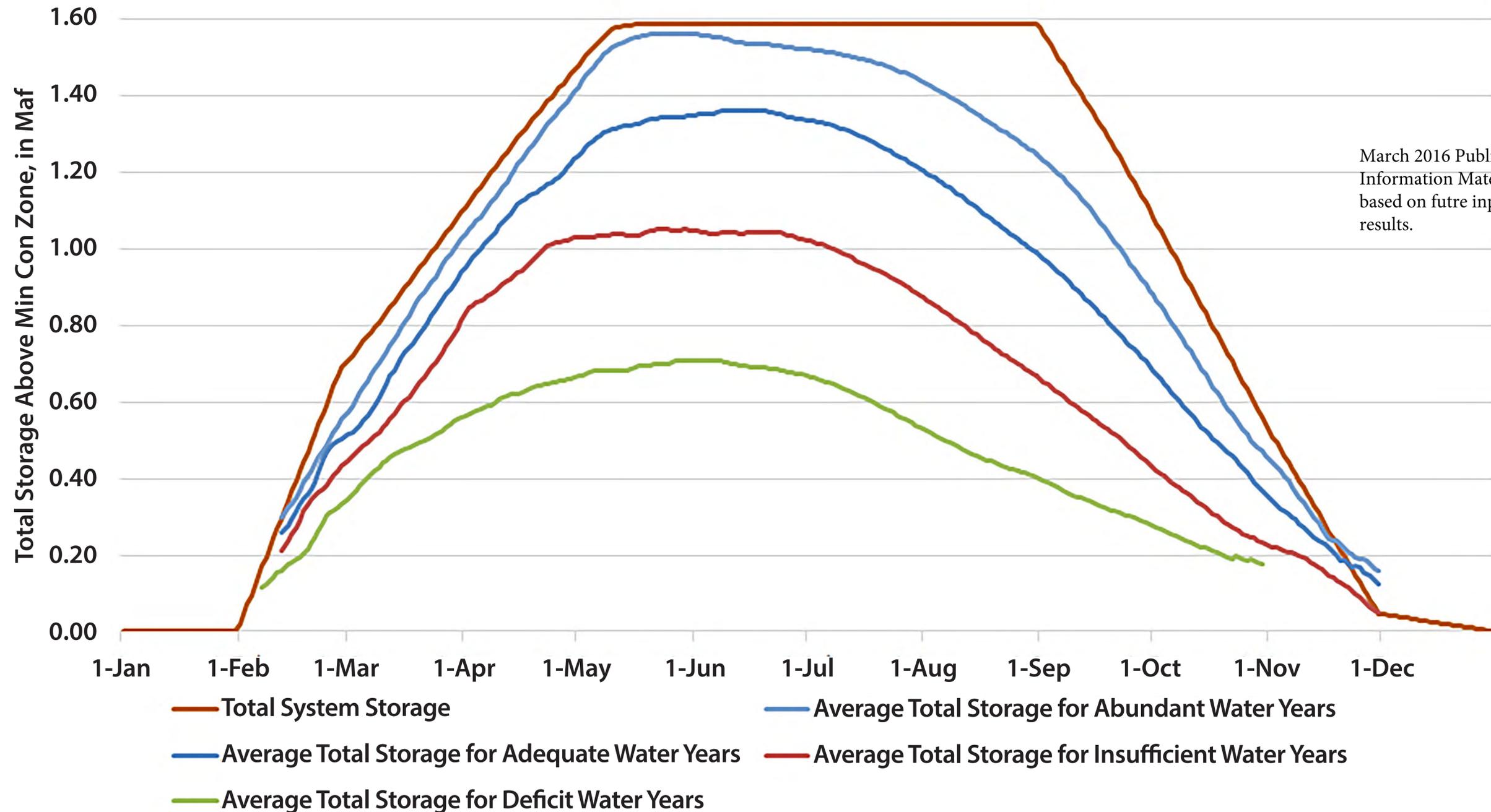
- Signifies completion of Corps' feasibility process. Accompanies documentation for state and federal agency review.
- Sent to Assistant Secretary of the Army and U.S. Office of Management and Budget.

Congress

Provides authorization to implement the final recommendation.

No timeline for this final step.

Total Willamette Valley Project conservation storage during 4 types of water years



Specific evaluation criteria of potential water supply measures

- **Flood Risk Management**
- **Cost Effectiveness and Financial Feasibility**
(make sure using storage space makes economical sense)
- **Environmental Compliance**
(such as impacts on endangered fish)
- **Recreation Impacts**
(such as boat ramp availability)
- **Technical Feasibility**
(How can water be delivered to cities and irrigators?)
- **Climate Change Adaptability**
(consider impacts of hydrology changes on supply and demand)
- **Reliability**
(meets water demands up to 80% of time)

What other issues should we consider when evaluating measures?



How much storage space is allocated from each reservoir depends on many issues and conditions, including where in the valley the water will be used.
It is too early to know how each reservoir might be affected.



US Army Corps
of Engineers®
Portland District



NEPA? – Scoping? – My Input?

What is the National Environmental Policy Act (NEPA) of 1969?

- One of the nation's oldest environmental laws
- Only applies to federal agencies like the Army Corps of Engineers
- Requires federal agencies to consider and disclose the environmental effects of their proposed actions in a public document
- Encourages federal agencies to make environmentally responsible decisions

What is “scoping”?

“Scoping” is the step in the NEPA process when the public is invited to participate in identifying issues, alternatives, and potentially significant effects to be considered in the analysis

Helps the Corps identify and eliminate from detailed study issues that are not significant or that have been covered by prior environmental review

How will my input be used?

- Identify alternatives to be considered
- Recommend environmental resources to evaluate
- Define the breadth of environmental effects to be assessed
- Connect with stakeholders interested in participating
- Determine new sources of data or information



Environmental Issues? – EIS or EA?

What environmental issues will be assessed?

- Socioeconomics, regional economic impacts
- Aesthetics
- Recreation
- Cultural resources
- Climate change
- Physical landscape
- Hydrology
- Water & sediment quality
- Vegetation
- Wetlands
- Fish and wildlife, including protected species and habitats
- Land use
- Air quality
- Noise
- Hazardous, Toxic & Radioactive Waste

Will the Corps prepare an EIS or an EA?

- The Corps intends to prepare an Environmental Assessment (EA)
- The EA is used to determine whether a proposed action has the potential to cause significant environmental effects
- If no significant effects are predicted, the EA results in a Finding of No Significant Impact (FONSI)
- If significant impacts are predicted, the Corps will prepare an Environmental Impact Statement
- EA scheduled for public release in Fall 2017



How can I provide input?

- You may fill out a written input form at this meeting and deliver to any staff
- You may submit email or posted mail input by April 16 to:

Email

wbr@usace.army.mil

Posted mail:

Tim Kuhn, Project Manager

U.S. Army Corps of Engineers

Willamette Basin Review, CENWP-PM-F

PO Box 2946, Portland, OR 97208-2946

How will my input be used?

- Identify alternatives to be considered
- Recommend environmental resources to evaluate
- Define the breadth of environmental effects to be assessed
- Connect with stakeholders interested in participating
- Determine new sources of data or information



US Army Corps
of Engineers®
Portland District



For more information:

www.nwp.usace.army.mil/About/Currentprojects/WillametteBasinReview.aspx