

Columbia River System Operations Environmental Impact Statement Newsletter



Albeni Falls Dam, Idaho

INSIDE:

- Agencies complete scoping report
- Co-lead agencies host public update sessions
- Co-lead agencies respond to frequently asked questions
- Modeling supports EIS alternatives analysis
- CSRO EIS draft alternative development process



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Welcome to the winter issue of the CRSO EIS newsletter

This newsletter and future issues are part of an ongoing effort to inform the public about the progress made in developing the Columbia River System Operations Environmental Impact Statement (CRSO EIS). The co-lead agencies (U.S. Army Corps of Engineers, Bureau of Reclamation, and the Bonneville Power Administration) began the development of this EIS in fall 2016. The robust public scoping and engagement with cooperating agencies and interested tribes, and continued public outreach have confirmed the complexity—and the importance to the public and the region—of this EIS. The EIS will be informed by the co-lead agencies' consideration of public comments and the co-lead and cooperating agencies' expertise.

The co-lead agencies are committed to conducting an open and transparent process and look forward to providing additional updates as we continue to develop the CRSO EIS.

Agencies complete scoping report

The co-lead agencies published the “[Public Scoping Report for the Columbia River System Operations Environmental Impact Statement](#)” in October 2017, and it is available at www.crsso.info. The report provides a high-level summary of the more than 400,000 comments received during the public scoping comment period from September 30, 2016, to February 7, 2017. More than 2,300 people from tribes, local and state governments, non-governmental organizations, stakeholder groups, and the general public participated in the 16 public scoping meetings and two webinars.

Thousands of unique comments and many form letters covered a wide array of topics, including dam breaching; socioeconomics; salmon, steelhead, and orca populations; water supply management and irrigation; and navigation and river transportation.

After the comment period, the EIS team spent considerable time reading, categorizing, and analyzing all comments. All scoping comments, whether unique or form letters, were weighted equally and considered regardless of the number of submissions or the topic of the comment. Generally, public input was organized into four categories to help the team understand the issues and resources important to the public, develop alternatives, and determine areas on which to focus the analysis. These four categories are as follows:

- Proposed actions to undertake
- Resources to consider
- Methods to use in the evaluation
- Issues to address in the scope of the analysis

Co-lead agencies host public update sessions

The co-lead agencies hosted two public update sessions on December 7, 2017, to provide information about the CRSO EIS. Co-lead agency representatives summarized the results of public scoping and how public input is contributing to the development of alternatives for long-term system operations, maintenance, and configuration. They also provided an overview of the process and progress on developing alternatives.

Staff outlined the work planned for the coming year, which includes finalizing a range of alternatives and initiating analysis of the environmental impacts of those alternatives.

About two thirds of the 100 participants attended the sessions at the Oregon Convention Center in Portland. Others joined the meetings via webinar or telephone. Participants represented interests from across the multiple uses of the system, including flood risk management, hydropower, navigation, irrigation, recreation, water quality, and fish and wildlife.

The agencies shared plans for 2018 public outreach, which include quarterly newsletters and two public update sessions—one in spring/summer 2018 and one in winter 2018.

Co-lead agencies respond to frequently asked questions

The co-lead agencies have received many questions throughout the National Environmental Policy Act (NEPA) process. This and future newsletters will include a selection of recurring questions and our responses.

Will the EIS evaluate dam breaching?

Yes. Scoping comments emphasized an interest in the robust consideration of an alternative to evaluate breaching the lower Snake River dams. We will analyze an alternative that includes breaching these dams.

How is ongoing ESA consultation with NOAA Fisheries integrated into the EIS process?

The co-lead agencies' goal is that the draft EIS will contain more than one alternative, including an identified preferred alternative, that the co-lead agencies believe could be adopted in compliance with the ESA, i.e., would not likely jeopardize ESA-listed species or destroy or adversely modify designated critical habitat. These alternatives would be based on the incorporation of operational and mitigation measures formulated in coordination with the U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries (NOAA). The co-lead agencies' plan is to identify the preferred alternative in the draft EIS and initiate formal consultation with USFWS and NOAA on the preferred alternative, so the agencies have a biological opinion prior to issuing the final EIS.

Why are the agencies complicating the NEPA process by expanding the scope of the EIS instead of focusing on Judge Simon's direction?

The CRSO EIS process is in response to the co-lead agencies' obligations to comply with NEPA and be responsive to Judge Simon's order in two respects: 1) the EIS will evaluate the prospective management of the system and mitigation that will ensure it is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat, and 2) the existing NEPA analyses the co-lead agencies have been relying on is stale and needed to be updated. An EIS that exclusively addressed a major federal action for ESA-listed anadromous fish would not meet the need to have NEPA coverage on other ESA-listed fish, such as bull trout or Kootenai River white sturgeon, or evaluate the effects of ongoing operations of the 14 projects on other resources. The EIS will also analyze the tradeoffs of alternative system operations as well as the impacts of these different operations on affected resources, including ESA-listed species.

Do you know how many alternatives there will be?

The co-lead agencies, with input from cooperating agencies as well as comments received during government-to-government consultations, have developed eight preliminary focus alternatives (although not all preliminary focus alternatives will necessarily be alternatives analyzed in detailed study in the EIS). The preliminary focus alternatives were developed to focus on a specific objective (e.g., improving juvenile salmon survival) to help

understand the tradeoffs between the specific objective and other operations and to show the impacts of various operations on affected resources. We are also looking at additional alternatives that focus on multiple objectives.

How are you including analysis of the Columbia River Treaty?

The current operations of the U.S. system, including current Treaty-related operations, will be included in the EIS analysis. If operations in the United States are modified in response to future Treaty arrangements and those modifications result in significant changes that were not addressed, those changes will be addressed through this EIS if they are identified in time, or subsequently through supplementation or in another NEPA process if necessary.

Are you going to look at the impacts to killer whales?

Yes. We will be looking at the effects of alternative operations on fish and wildlife, including orcas, that may be affected by system operations.

In looking at power system integration, how will you look at existing transmission?

Transmission is an impacted resource, and we will be identifying impacts of the alternatives on the transmission system.

What lens will you view the process through with regard to critical renewables? Will the alternatives include small reductions or large? Will the agencies be considering carbon-free replacement of energy under alternatives where hydropower is reduced?

Yes, we will be considering the impacts of changes to the system on energy replacement, although the granularity of our analysis is still an open question. We expect to look at renewables as replacement energy, depending on availability, scale, and costs.

How will you look at increased irrigation given we will see more rain and less snowpack with climate change?

We are looking at municipal and industrial water supply and irrigation as well as the unmet water obligations in the [Bureau of Reclamation's Columbia Basin Project](#). We will be evaluating impacts to groundwater, climatic factors, and water management and operational flexibility to meet future irrigation needs.

Modeling supports EIS alternatives analysis

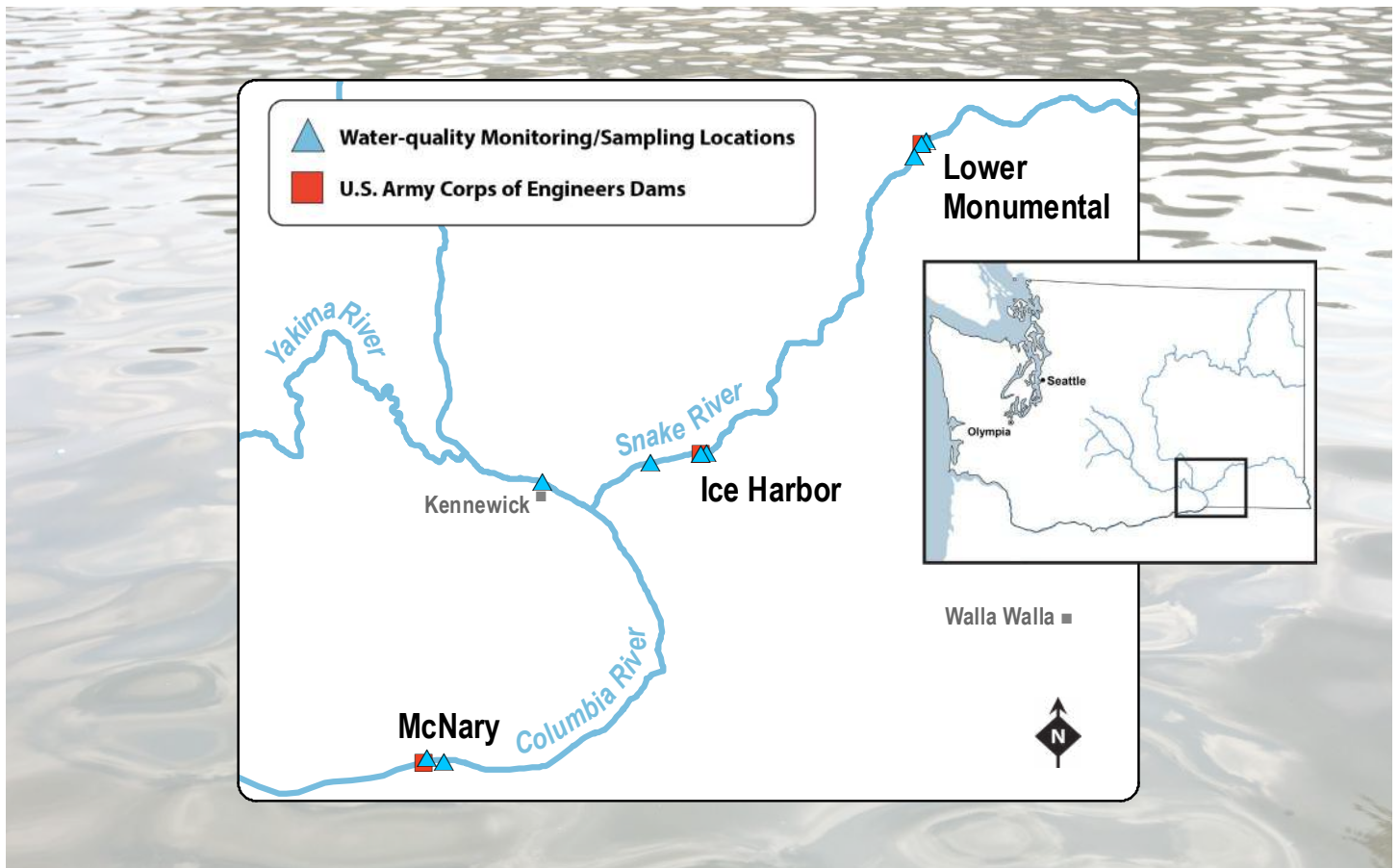
The co-lead agencies have begun calibrating models and will perform hydrological and biological modeling as part of the EIS development. Based on a simplified representation of the real world, modeling is a tool that allows scientists and engineers to estimate how something, like a river, might behave under different conditions.

Conceptually, a model is a repository of expert knowledge that includes data and cause-and-effect information, such as the relationships between operating a dam's spillway and the resulting production of total dissolved gas in the river below

the dam. This information helps scientists and engineers answer the "what if?" about options and verify assumptions about effectiveness and how well an action may meet a project's goals. Specifically, models can estimate the impacts of actions on specific resources and then help track changes from these actions over time and across space. For example, modeling results can tell us if an action may provide a solution to a problem and whether that solution applies to just a portion of a watershed or an entire region.



CRSO EIS water-quality modeling data is measured at the 14 system projects and other key locations in the Columbia River basin. Collected every 15 minutes, data includes water temperature, total dissolved gas, barometric pressure, flow, elevation and depth information from above and below these fixed monitoring locations.



Water-quality modeling asks questions to get answers

A team of limnologists (people who study bodies of fresh water), water quality modelers, and software and model developers is building a water-quality model to support the CRSO EIS effort. Composed of a linked system of existing models and other tools, the specialized CRSO model will simulate water temperature and total dissolved gas conditions under various weather, flow, and dam operational conditions. Analysis of the outcome of these scenarios, in combination with other assessment results, will provide water quality information critical for evaluating the range of possible impacts (beneficial or adverse) of changes to the operation, maintenance, and configuration of the system's 14 federal dams.

Early in model development, the multi-agency team determined the level of detail necessary to answer questions about potential alternatives and assessed the appropriate time scales over which to predict impacts on water quality (such as daily, seasonal, and annual, or even steady, unvarying conditions). The CRSO water-quality model area includes the Columbia River from the U.S./Canada border to downstream of Bonneville Dam. It also includes the Snake/Clearwater River system from Dworshak Reservoir on the North

Fork of the Clearwater River at Orofino, Idaho, from just upstream of the confluence of the Clearwater and Snake rivers, and the Snake River from Anatone, Washington, to its mouth.

The team used current field data and published literature about the Columbia River watershed and aquatic habitat to calibrate the CRSO water-quality model, which ensures the analyses are based on the most updated representation of real river conditions. Data also included the years 2011, 2014, and 2015 which cover a broad range of flows and meteorological conditions and focused on hydrodynamics (the forces and flow of water), water temperature, and total dissolved gas.

The model will be used to examine the range of operational and structural modifications that will comprise the EIS alternatives. This model is composed of one-dimensional (HEC-RAS) and two-dimensional models (CE-QUAL-W2). Model visualization and analysis tools will help the larger CRSO EIS team—adding economists and fisheries specialists among others to evaluate and compare alternatives. The draft EIS, scheduled for public release in March 27, 2020, will provide the details and data behind these evaluations.

CRSO EIS draft alternative development process

From spring 2017 through winter 2017, the co-lead agency project teams, along with [cooperating agencies](#), used input from public scoping to develop project objectives, identify individual measures or actions that could be effective in achieving these objectives, and develop preliminary focus alternatives. Preliminary focus alternatives will help define those actions that will achieve one objective but also can be used in combination with other actions to build multiple-objective alternatives. Some early work to develop draft, multiple-objective alternatives that used the actions identified through scoping and from project teams also was completed through EIS team workshops.

In early 2018, the team will investigate what actions from the preliminary focus alternatives can be combined into a robust range of multiple-objective alternatives that could meet project objectives. The team anticipates having a defined range of alternatives for detailed analysis by late spring/summer and then will identify the significant impacts of implementing these alternatives. This analysis will either guide the refinement of alternatives or the development of mitigation measures to minimize impacts, where possible, and will be discussed in the draft EIS.

Co-leads and cooperating agencies will continue to work together to develop these alternatives as well as through development of the draft and final EIS.

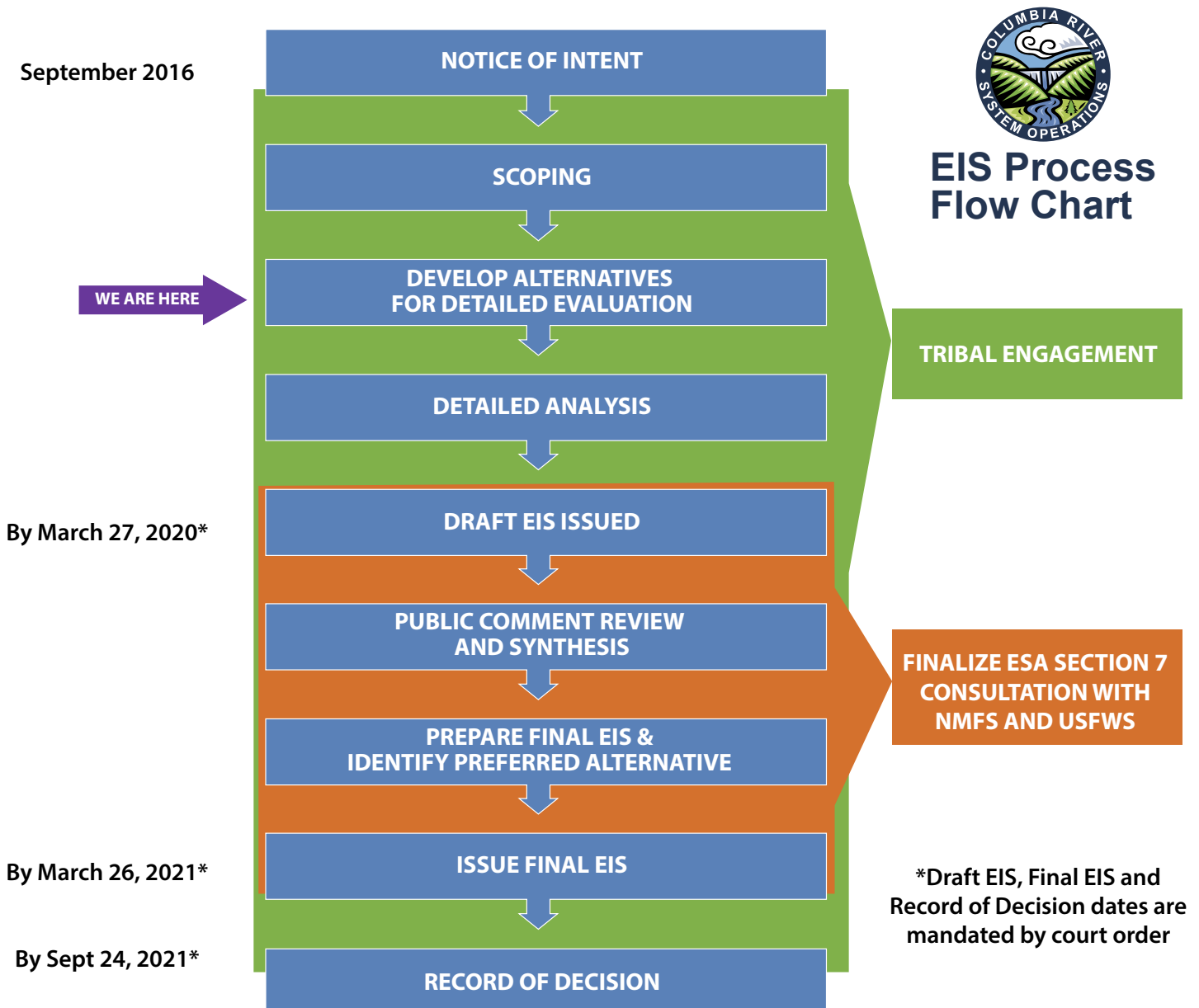


Columbia River downstream of Bonneville Dam

What is NEPA?

The National Environmental Policy Act (NEPA) requires federal agencies to carefully consider the environmental, social, and economic effects of any major federal action. In the case of the CRSO EIS, the co-lead agencies must examine how the current operations, maintenance, and configurations of 14 federal dam and reservoir projects (i.e. the “no action alternative”) operate to meet the multiple Congressionally-authorized purposes, including flood risk management, navigation, hydropower, irrigation, fish and wildlife conservation, recreation, and municipal and industrial water supply.

In addition, the CRSO EIS will provide an impact analysis of affected resources (the effects) for a reasonable range of alternative operations, maintenance, or configurations of the System. The purpose of NEPA is to ensure that decision makers and the public are informed of the environmental and social consequences of a proposed action prior to making a decision and taking action, as well as providing meaningful opportunity for the public to comment. The main goal of the CRSO EIS is to inform future decisions that provide a contemporary, efficient, and flexible approach to meeting the multiple responsibilities of the co-lead agencies.



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Columbia River Gorge, Oregon