

Columbia River System Operations Environmental Impact Statement Newsletter



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"We owe it to our stakeholders to be World Class managers of these assets to ensure the long-term viability of those benefits for the good of the Nation and future generations. It is our goal to develop a long-term asset investment plan to provide for certainty, efficiency, affordability and reliability of the System's long-term value."

Agency Executives' Statement
February 26, 2015

Welcome to the first edition of the Columbia River System Operations newsletter. As you may be aware, the U.S. Army Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration—Federal co-lead agencies—are preparing the Columbia River System Operations Environmental Impact Statement (EIS) to assess and update their long-term strategy for the operation and configuration of the multiple-purpose system.

As part of the National Environmental Policy Act process, the co-lead agencies will evaluate a range of alternatives in the EIS, including a no-action alternative (current system operations and configuration). Other alternatives are being developed through the scoping period based on public input and co-lead agency expertise, and will analyze an array of alternatives for different system operations and additional structural modifications to existing projects. The EIS also will analyze potential effects on resources and identify measures to avoid, minimize, and mitigate impacts associated with the system operations and configuration, where feasible.

As we stressed during our public scoping meetings, the co-lead agencies are fully committed to conducting an open and transparent NEPA process and to work with the region, including tribes, states, federal agencies, and key stakeholders in the basin.

This newsletter presents the first of many opportunities for interested parties to be updated on progress made on development of the Columbia River System Operations EIS and to provide a better understanding of the process, its management, and affected resources.



CRSO EIS

The Columbia River System Operations (CRSO) Environmental Impact Statement (EIS) will evaluate the coordinated water management functions for the operation, maintenance, and configurations of 14 federal dam and reservoir projects comprising the Columbia River System (System). In the fall of 2016, the U.S. Army Corps of Engineers, Bureau of Reclamation, and the Bonneville Power Administration, co-leads in preparing the EIS, began the procedural implementation required under the National Environmental Policy Act for a new comprehensive EIS for the CRSO. The District Court of Oregon in the *NWF v. NMFS* case has ordered the co-lead agencies to complete the EIS in five years.

The first stage of developing an EIS, called “scoping,” began with publishing a Notice of Intent in the Federal Register notifying the public and interested parties of the initiation of the development of the EIS and soliciting input from the public regarding the scope, resources, and issues to address in the EIS, and alternatives to consider in the analysis. The co-lead agencies also held a series of 18 public meetings to engage the public in discussing how the system of dam and reservoir projects are currently operated, encourage comments on how operations

could be different, and provide information on resources that are likely to be evaluated in the analysis. Thanks to the interest of citizens throughout the Northwest, more than 2,300 people attended 18 scoping meetings that were held from October 2016 to January 2017 in Montana, Idaho, Washington, and Oregon, and via webinar.

During the public scoping period, members of the public provided input on the development of the EIS and on many issues important to them. The co-lead agencies have received over 390,000 comments highlighting a range of CRSO topics including:

- Operational changes
- Transportation of fish and goods
- Recreational opportunities
- Dam breaching
- Dam construction
- Replacing hydropower generation with other sources of energy generation
- Increasing hydropower generation
- Fish passage
- Various fish-management actions

Columbia River System multiple uses

You may hear representatives of the co-lead agencies say they manage a complex system, but what exactly does that mean? For one, the System is affected by variable stream flows and weather patterns. This variability can cause wide-ranging runoff patterns from year to year that result in floods, droughts, or other conditions that need to be addressed through the management of operations of the dam and reservoir projects. While the weather patterns can be variable, the reliability of the System has been key to successfully accommodating these changing and complex conditions.

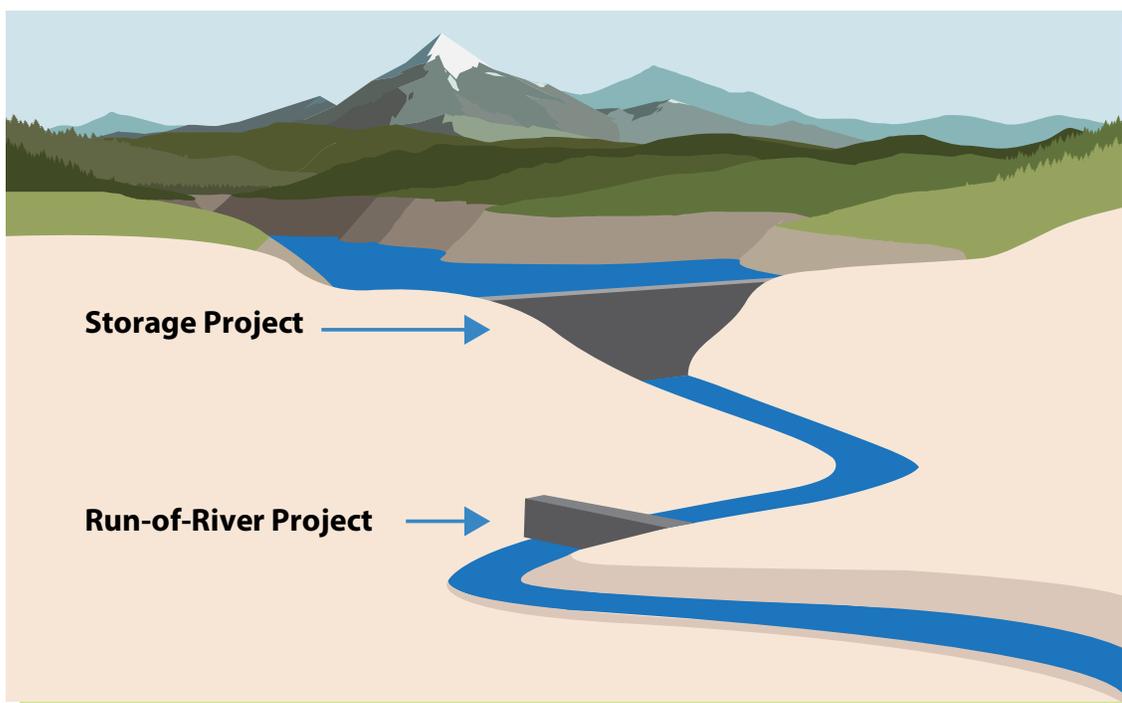
Second, federal Columbia River Basin dam and reservoir projects are operated to meet several Congressionally authorized purposes. Water managers must consider and balance all of the multiple uses when making operational decisions. As an example, actions that benefit one use or resource may have negative effects on another use or resource. To compound this balancing act, sometimes there may be too much water in the system, or not enough, resulting in a tradeoff of how to operate the System. Despite the amount of water available from year to year, river operators must always fulfill their authorized duties and attempt to meet the needs of all water users.

There are two types of dams or projects in the Columbia Basin: storage and run-of-river. While both types are multiple use, they each have very specific purposes.

Storage projects hold water in large reservoirs and reshape the river's flow patterns to meet the authorized purposes of flood risk management, hydropower generation, irrigation, and flows for fish and wildlife conservation. Storage reduces the potential for damaging floods downstream and provides valuable water during dry periods. In the System, Grand Coulee, Libby, Hungry Horse, Albeni Falls, and Dworshak dam and reservoir projects provide storage.

Run-of-river projects have limited storage. They allow water to pass the dam at about the same rate it enters the reservoir. They provide power generation and help give sufficient water depth over rapids and other obstacles to permit barge traffic to pass through locks and reservoirs.

Managing a complex system means that the federal river operators must be in constant coordination with each other and must be assessing weather conditions at all times to balance the water needs of millions of Northwest river users.





The CRSO and integrating renewable energy

While there are a total of 31 federal dam and reservoir projects in the Columbia and Snake River basins, the 14 federal dam and reservoir projects that are subject to analysis in the CRSO EIS are the largest and produce most of the hydropower in the Columbia and Snake River basins. In an average water year, they can produce approximately 35 percent of the hydropower in the Pacific Northwest.

The U.S. Army Corps of Engineers and the Bureau of Reclamation operate and maintain these 14 federal dam and reservoir projects as one system. The maximum generating capacity of all 31 federal hydro projects is 22,458 megawatts. The Bonneville Power Administration (BPA) markets the system's energy. On average, the CRSO produces enough power for approximately seven million Northwest homes annually.

Because water flows downhill constantly and is also stored for later use in large reservoirs, hydropower is extremely flexible. This means hydropower has the capability to provide steady energy – known as baseload power to meet basic energy demands. Operators can also use hydropower's flexibility to quickly change the System's power output to meet

peak Northwest power needs during cases of extreme weather or unplanned power outages.

Hydropower's flexibility also allows for the integration of solar and wind energy, which are less flexible. Currently, there are more than 4,700 megawatts of wind on BPA's 15,000 mile transmission system; a grid that stretches across the Pacific Northwest and into parts of California, Montana, Nevada, Utah, and Wyoming.

Integrating renewables such as wind energy into the Northwest's transmission system would be much more difficult without CRSO hydropower or other balancing resources such as natural gas. That is because renewable resources only produce power when the wind blows and the sun shines. As an example, if the wind decreases during the middle of a hot day when many in the Northwest are using their air conditioners, dam operators use the flexibility of hydropower to balance those energy needs. Without generation such as hydropower and natural gas or ways to store renewable energy, it is not yet possible for renewable generation to meet all of the energy demands of the Pacific Northwest.

Fish passage

Providing fish with safe passage through federal dams on the lower Columbia and Snake rivers is a top priority for the three co-lead agencies.

The co-lead agencies' scientists and engineers carefully consider fish behavior, dam configuration, and river conditions when designing modern fish passage structures. They also use the best available science to customize the amount of spill that will aid juvenile fish in migrating to the ocean and will not obstruct migrating adult salmon from moving quickly upstream.



Water Chillers on the upper fish ladder at the Lower Granite Dam provide salmon with cooler water on their migration through the Snake River.

Science-based spill and structural improvements, such as surface passage systems at Columbia and Snake River dam and reservoir projects, have resulted in an increase in juvenile and adult salmon survival. Surface passage routes have been incorporated at all eight dams on the lower Columbia and Snake rivers, allowing juvenile salmon and steelhead to pass dams near the river's surface where they naturally migrate.

To further improve fish passage, the co-lead agencies have also installed adult fish ladders at all eight lower Columbia and Snake River dam and reservoir projects, allowing safe passage of upstream-migrating adult salmon and steelhead.

Science-based spill operations have also decreased fish travel time and increased overall survival of juveniles through the system. These operations have also reduced the percentage of fish that go through

turbines. Research shows at some dams, less than five percent of all juvenile fish travel through the turbines. Depending on the species of fish, juvenile salmon and steelhead survival at each dam is now approximately 93 to 96 percent, meeting the standards of NOAA's 2008 Biological Opinion, as amended in 2010 and 2014.

In addition, the co-lead agencies have installed chiller pumps at Lower Granite Dam to cool water temperatures in the adult fish ladder. A similar temporary pump system is also being used at Little Goose Dam. Chiller pumps can be important because high summer air temperatures can heat the water's surface and create temperature differences

between the entrance and exit of fish ladders, resulting in adult passage delays and the potential for fish mortality.

Another improvement is an innovative, new design for a hydropower-generating turbine that will be installed at Ice Harbor Lock and Dam on the lower Snake River which will provide safer passage for juvenile fish passing through the turbine. If successful, the new type of turbine could be added to other dam and reservoir projects on the Columbia and Snake rivers.

To address changes to hydrology and safe fish passage challenges throughout the System, the co-lead agencies will continue to use the best available science and new and innovative technologies to improve fish migration throughout the Columbia and Snake River basins.



Where are we in the CRSO EIS process

The co-lead agencies have completed a review of all public, agency, and tribal comments submitted during the public scoping period and are using these comments in the development of alternatives. In addition, the information is being used to highlight specific areas of interest and resource concerns that will be analyzed in the EIS.

The co-lead agencies are also in the process of finalizing memoranda of understanding with approximately 25 cooperating agencies so that sovereign entities with applicable expertise and jurisdiction may assist the co-lead agencies with various parts of EIS scoping, alternatives development, model development, and analysis. We are also developing engagement strategies to continue conducting a transparent process with agencies from federal, state, and tribal governments. There is also an engagement plan to update stakeholders and other members of the general public on major milestones.

A Scoping Summary Report is planned to be released during Fall 2017. It will provide the

interested public with a consolidated summary of issues identified through public scoping comments.

The next step in the process is development of preliminary alternatives and identification of evaluation criteria and modeling needs. The co-leads plan to hold a public meeting to present these alternatives before finalizing the range of alternatives. The date will be announced on the www.crso.info website. By the end of 2017, it is anticipated that a range of alternatives will be defined.

Updates on the CRSO EIS development will be made on the CRSO project website and through this newsletter. To stay up to date, visit www.crso.info. To be added to the mailing list, email info@crso.info.

ERRATA: The CRSO Newsletter has been revised to correct the time frame in the above article during which the co-lead agencies will hold a public meeting.

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 compared to the no action alternative. 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.

CRSO EIS NEPA Overview Process



CRSO EIS
P.O. Box 2870
Portland, OR 97208 - 2870
Email: info@crso.info
Website: www.crso.info

Mail Stamp
Here



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Summer 2017 (revised)