

Washington State Department of Ecology
Determination of Significance and Request for Comments on Scope
of the EIS
Eightmile Dam Rebuild and Restoration Project

Background

In February 2019, a Final Programmatic Environmental Impact Statement (FPEIS) was issued by the Washington Department of Ecology (Ecology) and Chelan County, evaluating the Icicle Creek Water Resource Management Strategy. That FPEIS was the culmination of nearly three years of evaluating strategies to improve instream flows, improve sustainability of the Leavenworth National Fish Hatchery, protect tribal and non-tribal fish harvest, improve municipal and domestic water supply and agricultural reliability, enhance Icicle Creek habitat, and comply with State and Federal Law including the Wilderness Act within the Icicle Creek Subbasin. The FPEIS evaluated five program alternatives, and the SEPA non-project action was the adoption of the program called to Icicle Strategy, intended to provide a program of integrated long-term water resource management and habitat restoration actions. The Eightmile Dam Rebuild and Restoration Project is one of several early actions to be implemented as part of the Icicle Creek Strategy, and as such is the first project-level EIS undertaken in this phased review process under SEPA.

Eightmile Lake is one of four lakes in the Alpine Lakes Wilderness Area managed by Icicle and Peshastin Irrigation Districts (IPID) to provide water storage. A small dam, low-level outlet pipe, and a slide gate at the outlet of Eightmile Lake allow for controlled releases of stored water to supplement flows in Icicle Creek, which increase water supply available during low flow periods typically occurring during the late summer months. Icicle Creek, a tributary to the Wenatchee River, provides water for agricultural irrigation, municipal and domestic use, aquatic habitat for wild and hatchery fish, and recreation. Eightmile Lake, high in the Alpine Wilderness Area, is a major source of stored water supporting streamflows in Icicle Creek, benefiting these uses.

The existing dam was constructed in the 1920s and consists of a rock masonry and concrete wall structure with an earthen embankment section. The infrastructure is more than 90 years old and requires improvements to operate in a safe, reliable way.

The following are the key concerns for Ecology Dam Safety Office (DSO) and IPID:

- **Limited Spillway Capacity** –The spillway overtopped and eroded the earthen embankment portion of the dam more than 25 years ago. This has limited IPID’s ability to refill the lake to the historical spillway elevation and increased the potential for additional erosion and failure of the earthen embankment portion of the dam.
- **Jack Creek Fire** – The August 2017 Jack Creek Fire burned trees and vegetation within the Eightmile Lake watershed down to the shoreline of the lake. This has increased peak runoff into Eightmile Lake, which combined with debris piling up on the dam, could increase the risk of dam failure.
- **Low-Level Outlet Failure** – The low-level outlet pipe at the lake is approximately 300 feet long and consists of pipe that varies in size and composition. The oldest section was replaced as

part of emergency repairs completed in 2018. The pipe now functions adequately, but still requires replacement for long term operations.

Following the 2017 fire, DSO elevated the hazard classification of the dam from low to high. This hazard classification means that dam failure would threaten human lives and/or cause substantial economic or environmental damage.

Due to these concerns, IPID declared an emergency at Eightmile Dam on March 13, 2018. The dam was repaired in 2018 to temporarily increase safety by widening and hardening the spillway and by replacing a segment of the low-level outlet pipe that had collapsed. While the repairs made it possible to lower the lake and provide additional spill capacity, the infrastructure does not currently meet DSO's requirements for dam safety or IPID's needs. As a result of these ongoing safety concerns, DSO is requiring that the outlet gate be kept open to reduce the volume of water stored and thus reduce risk of failure during the winter and early spring.

Objective

IPID's proposed replacement of the Eightmile Dam has three objectives:

1. Restore the storage capacity of Eightmile Lake so that it meets IPID's irrigation and storage needs.
2. Comply with DSO regulations for a high hazard dam.
3. Provide water to enhance Icicle Creek instream flows and allow for potential mitigation of new beneficial uses.

IPID holds a 1926 adjudicated water right to store 25 cfs of water at Eightmile Lake.

Environmental Review

The project-level Environmental Impact Statement (EIS) is part of a phased review process under the State Environmental Policy Act (SEPA), following the 2019 FPEIS for the Icicle Strategy issued by Ecology and Chelan County. The Eightmile Dam project is one of several early actions to be implemented as part of the Icicle Creek Strategy, under the direction of the Icicle Work Group. The project proponent is IPID. Ecology's Office of Columbia River (OCR) will act as the lead agency for the project-level EIS and has determined this proposal is likely to have a significant adverse impact on the environment, and accordingly, an Environmental Impact Statement (EIS) is required under Revised Code of Washington (RCW) 43.21C.030(2)(c). Ecology Office of Columbia River (OCR) is the lead agency under the State Environmental Policy Act (SEPA) and is leading the development of the Environmental Impact Statement (EIS) for the dam replacement project in accordance with Washington Administrative Code (WAC) 197-11.

Scoping

Scoping is the first step in the EIS process, as mandated by SEPA (WAC 197-11-408) and includes a public comment period. The purpose of scoping is to determine the range, or "scope," of issues to study in the EIS. Pursuant to SEPA, Ecology is notifying the public of the intent to prepare an EIS so that agencies, tribes, communities, organizations, and members of the public have an opportunity to comment on the scope of the impacts to be analyzed.

There are two spillway design alternatives, two construction options, and a No Action Alternative under consideration. Considering stakeholder input and other factors, proposals that extend outside the deeded land area have been eliminated from consideration in the EIS.

Alternatives

Narrow Spillway with Gates (formerly Alternative 1A)

This alternative includes replacement of the existing dam with an earthen embankment and reinforced concrete dam structure equipped with automated control gates over the primary spillway. Three four-foot-high, 20-foot long automatic level control gates would be installed on top of the primary spillway, which would have a hard crest elevation of 4,667.0 feet. The gates would allow IPID to control the water level within the top 4 feet of the lake. When the need for additional water supply is anticipated, IPID would raise the gates in the late spring or early summer to raise the lake to elevation 4,671.0 feet prior to releasing the water in the late summer. The gates would automatically lower if the lake level gets too high to protect the dam and prevent overtopping. This design includes a 60-foot wide primary spillway.

This alternative includes two 10-foot wide intermediate spillways on either side of the primary spillway at elevation 4,671.5 feet to accommodate extreme storm events. A secondary spillway would be created in a low spot south of the main dam structure by hardening an existing channel, with a crest elevation of 4,673.0 feet. The spillways would provide capacity to pass the design storm event (a storm that has the probability of occurring once in 1,000,000 years) while maintaining the freeboard in the lake required by DSO.

Water would be released from the lake through a new 30-inch diameter low-level outlet pipe/siphon, extending from an inlet submerged in the lake approximately 150 feet west of the new dam structure to an outlet in the Eightmile Creek channel approximately 314 feet downstream of the new dam structure. This would allow the lake to be drawn down to a low water surface elevation of 4,636 feet during drought conditions, which would allow access to stored water without pumping. The low-level outlet pipe would be located entirely within the special warranty deed area. IPID would release water during the late summer to maintain the water supply available for authorized diversions and instream flows in Icicle Creek, controlled by an automated plug valve at the downstream end of the pipe. IPID would have the ability to adjust the valve remotely to release the flows needed to meet downstream water supply and instream flow needs.

The primary spillway gates and low-level outlet valve at the lake would be powered by batteries charged by a solar panel. Lake levels, gate and valve positions, and other controls would be monitored remotely and the equipment would be operated via radio signal requiring an antenna, both of which would be located at the dam site and concealed as much as possible.

Wide Spillway without Gates

This alternative includes replacement of the existing dam with an earthen embankment and reinforced concrete dam with a primary spillway length of 180 feet, resulting in a wider spillway and larger footprint than the Narrow Spillway alternative. The primary spillway would be fixed and completely passive, without gates or automatic equipment. The primary spillway would provide the capacity to accommodate the design storm event, and intermediate spillways would not be needed. The primary spillway would have a hard spillway crest at an elevation of 4,671.0 feet.

During extreme storm events, the lake would flow over the entire length of the primary spillway. Similar to the Narrow Spillway Alternative, a secondary spillway would be created in a low spot south of the main dam structure by hardening an existing channel. The secondary spillway would have a crest elevation of 4,673.0 feet. The spillways would provide enough capacity to pass the design storm event while maintaining the freeboard in the lake required by DSO.

As with the Narrow Spillway Alternative, water would be released from the lake through a new 30-inch diameter low-level outlet pipe/siphon. The operation and configuration of the low-level outlet pipeline would be essentially the same described for the Narrow Spillway Alternative.

Construction – Applicable to both Action Alternatives

Construction of the proposed project would require transport of equipment and materials into and out of the Alpine Lakes Wilderness Area. Two potential methods have been identified for mobilizing equipment and materials: 1) Helicopter transport, and 2) Overland transport. A combination of methods is also possible. These methods could be used for either action alternative. Non-motorized wilderness ground transport (i.e., pack equipment and materials in and out using humans and pack animals, no use of motorized equipment) could be used to supplement either transport options.

No Action Alternative

The No Action Alternative serves as the baseline condition against which the Action Alternatives are compared and is intended to illustrate the most likely scenario if the project is not implemented. Under the No Action Alternative, the dam would be left as is, with a primary spillway elevation of 4,667 feet, and would continue to operate in its current state and manner. This would leave the dam vulnerable to failure which would threaten human lives downstream, and create economic hardship for the IPID. Should a dam failure occur, residences, public infrastructure and wilderness habitat would be damaged or destroyed. DSO currently requires IPID to leave the low-level outlet gate open during the winter and early spring to reduce the risk of a dam failure. The operation of the dam in this manner is not consistent with DSO regulations, does not meet the DSOs safety requirements for a high hazard dam, and would ultimately result in enforcement action by DSO. The No Action Alternative does not meet IPID objectives for water storage capacity for operational and irrigation water delivery.

Elements for Analysis

Ecology has preliminarily identified the following natural and built environment elements for analysis in the EIS:

- Water Resources
- Geologic Resources
- Wetlands and Vegetation
- Terrestrial and Aquatic Resources
- Recreation Resources
- Aesthetic Resources
- Environmental Health
- Historic and Cultural Resources
- Environmental Justice
- Tribal Rights and Interests
- Economics
- Public Safety

The EIS will evaluate the proposal's compliance with applicable regulations and will analyze cumulative impacts for relevant environmental elements.

Commenting

Agencies, affected tribes, and members of the public are invited to comment on the scope of the EIS. You may comment on alternatives, probable significant adverse impacts, mitigation measures, and licenses or other approvals that may be required. An expanded scoping process is being provided pursuant to the Washington Administrative Code (WAC) 197-11-410, and will include two public scoping meetings. Due to COVID-19, these meetings will be held virtually.

Virtual Public Scoping Meeting Dates, Times, and Virtual Details

Wednesday January 13, 2021 3:00 - 6:00 PM

https://rossstrategic.zoom.us/webinar/register/WN_aK5AI9EcRF09asD4_wpqPw

Thursday January 21, 2021, 5:00 – 8:00 PM

https://rossstrategic.zoom.us/webinar/register/WN_BiYXfsmrQ-erYHgAFd6qnwe

Scoping and Comment Period: The comment period opens Friday December 18, 2020. The deadline for submitting your comments is Monday February 1, 2021. All comments related to project scoping must be submitted by this date. Comments may be submitted orally at the virtual scoping meetings or in writing.

Written comments may be submitted:

Online at <https://ecology.wa.gov/eightmile>

By mail to:

Department of Ecology

Central Regional Office

Attn: Melissa Downes

1250 West Alder Street

Union Gap, WA 98903

Project-related information can be reviewed on the project website at:

<https://ecology.wa.gov/eightmile>

For questions about the project, or the scoping process, please email: melissa.downes@ecy.wa.gov

Date of Issue: December 18, 2020