Proposed Goldendale Energy Storage Project

State Environmental Policy Act Draft Environmental Impact Statement

Summary

DEPARTMENT OF ECOLOGY
State of Washington

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Summary

Introduction and Background

Free Flow Power Project 101, LLC (the Applicant) proposes to build a pumped-water storage system that is capable of generating energy through release of water from an upper reservoir downhill to a lower reservoir. The proposed project is primarily located in Klickitat County, Washington. Throughout the Draft Environmental Impact Statement (EIS), this will be referred to as the "proposed project."

The reservoirs would be off-stream of the Columbia River, with no river or stream impoundments. The lower reservoir would be located on a portion of the former Columbia Gorge Aluminum (CGA) smelter site. Water to fill the pumped storage system would be drawn from a Public Utility District No. 1 of Klickitat County (KPUD) pump station, adjacent to an intake pool off-stream from the Columbia River, under a permit that once served the aluminum plant. The pumped storage system would be initially filled then, as needed, would periodically be supplemented with make-up water to offset water lost from evaporation or leakage from the system. The proposed project is expected to generate up to 1,200 megawatts (MW) of electricity. It is also intended to provide balancing services and renewable energy flexible capacity to utilities in the Pacific Northwest and potentially California.

The Applicant's Proposed Project

- Two reservoirs vertically separated by 2,400 feet of elevation
- No river or stream impoundments
- An underground water conveyance tunnel and powerhouse
- An electrical substation/switchyard, along with 115- and 500-kilovolt transmission lines
- A new aerial transmission line, along existing transmission corridors, connecting to the Bonneville Power Administration's (BPA's) existing John Day Substation in Oregon, near the City of Rufus
- Support structures

The proposed project would be located along the Columbia River, approximately 8 miles southeast of the City of Goldendale, on John Day Dam Road and adjacent to the former CGA smelter site. The proposed project area encompasses approximately 681.6 acres. The project area includes 621.9 acres of private lands primarily owned by NSC Smelter, LLC, and an existing utility right-of-way owned by BPA. The project is described more fully in Chapter 2, Proposed Project Description and Alternatives, of the EIS.

Site Background and Project History

The proposed project's lower reservoir area is located on lands that previously housed the CGA smelter (also known as Harvey Aluminum, Martin Marietta Aluminum, Commonwealth Aluminum, or Goldendale Aluminum). This facility was a primary aluminum reduction smelter that generally operated from 1969 to 2003 and was added to the Washington Department of Ecology's (Ecology's) Hazardous Sites List in 1990. The CGA smelter was capped and closed in 2005 in compliance with applicable environmental laws and is currently being managed under a Model Toxics Control Act Agreed Order. Investigation of contamination on the site and development of cleanup actions are proceeding through a separate process.

A similar pumped storage project was proposed by KPUD in 2009 and was discussed with stakeholders. This similar project, referred to as the JD Pool Pumped Storage Hydroelectric Project, included a larger footprint and project boundary. However, this proposal did not advance beyond the feasibility stage.

The Applicant for the current proposed project was issued a preliminary permit from the Federal Energy Regulatory Commission (FERC) in 2018 with an order granting priority to the Applicant to file a license application. In 2020, the Applicant filed a Final License Application to FERC (FERC No. 14861). FERC conducted scoping under the National Environmental Policy Act (NEPA) in October 2020, which initiated their environmental analysis on the proposal and application. FERC issued notice that the hydroelectric application was filed and ready for environmental analysis on March 24, 2022, and included requests for comments, recommendations, terms and conditions, and prescriptions in the notice.

Purpose and Need

The Applicant's objective is to construct a pumped-storage hydropower facility along the Columbia River capable of generating 1,200 MW of electricity, which the Applicant has determined to be most appropriate for the proposed location and market conditions. The proposed project objective is based on the following criteria:

- **Reuse an Existing Industrial Site**: The proposed project would reuse part of the footprint of a previously developed industrial site.
- **Use an Existing Water Right and Water Intake**: The existing water right owned by KPUD would enable the proposed project to be built with no new water intake features and no new water right.
- **Be in Proximity to Complementary Energy Projects and Infrastructure**: The proposed project would be located near BPA transmission lines, the existing John Day Substation, and nearby wind farms, allowing potential interconnection to existing infrastructure while promoting alignment with nearby energy related land uses.

Environmental Review Process

Ecology prepared this Draft EIS to meet the requirements of the Washington State Environmental Policy Act (SEPA) (Chapter 43.21C of the Revised Code of Washington) and the SEPA Rules (Chapter 197.11 of the Washington Administrative Code [WAC]). The proposed project triggers SEPA review because it would require permits from state and local agencies. Other local, state, and federal agencies responsible for permits for the proposed project will use the Final EIS along with other information to inform permitting

The SEPA EIS

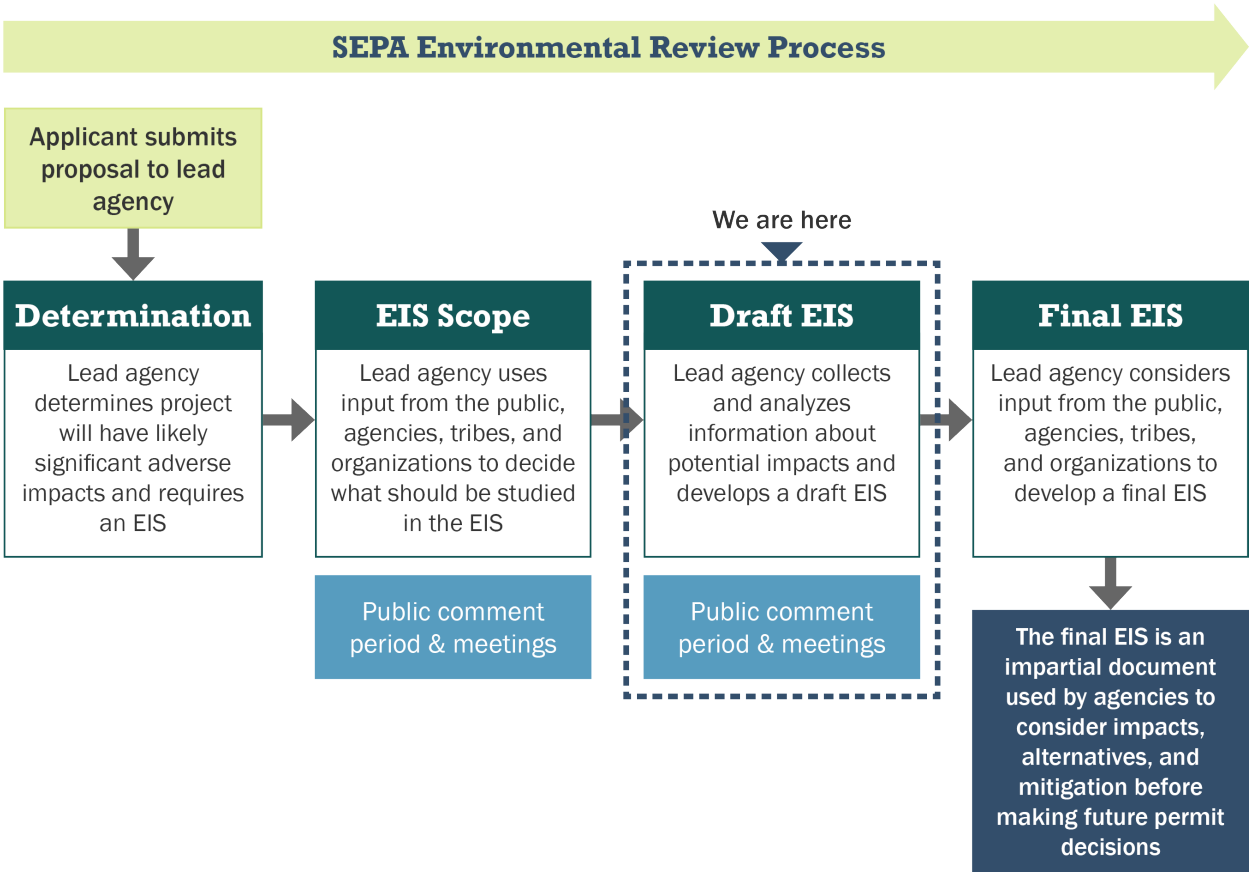
Under SEPA, an EIS is necessary if a proposed action is likely to result in significant adverse environmental impacts.

The purpose of an EIS is to provide the public and agencies with information about the effects of a proposed action and inform local and state agency permitting decisions.

An EIS is not a decision to approve or deny a proposal.

decisions. The required permits, licenses, and approvals are listed in Chapter 3 of the EIS and summarized in the Fact Sheet for the EIS.

Ecology, the lead agency for the EIS, has determined that the proposed project is likely to have a significant adverse impact on the environment and requires an EIS. This EIS provides a comprehensive and objective evaluation of probable significant adverse environmental impacts, reasonable alternatives, and mitigation measures that would avoid or minimize impacts. This EIS evaluates two alternatives, the proposed project and a No Action Alternative.



Separately, FERC is conducting an environmental review of the proposed project under NEPA. NEPA is required because the proposed project requires federal permits. The NEPA review is separate from this SEPA process.

SEPA Environmental Impact Statement Scoping Process

Ecology issued a Determination of Significance and conducted an EIS scoping period from January 14, 2021, through February 12, 2021. During the scoping period, Ecology held two online public scoping meetings on January 27 and February 3, 2021. During the scoping period, Ecology accepted comments by mail, via online form, and verbally during the online public meetings.

The Ecology Project Website

A website was developed to provide information through the duration of the SEPA process, including the scoping period:

ecology.wa.gov/Goldendale-Energy

Tribes, agencies, members of the public, and stakeholders were invited to participate in the scoping process and provide comments. Additional details on the scoping process and the comments received are in the *Scoping Summary Report* in Appendix A of the EIS.

Summary of Feedback Received During Scoping

Comments and feedback from the scoping period were about the SEPA process, project alternatives, the scope of analysis, mitigation, cumulative impacts, general project support or opposition, and many elements of the environment. The list below briefly summarizes some of the key issues or resources identified. A detailed summary of the scoping process and comments received is in the *Scoping Summary Report*. Key themes in scoping comments included:

- The Tribes' access to food and medicine in the area, including ongoing root and plant gathering access by Confederated Tribes and Bands of the Yakama Nation (Yakama Nation) Tribal members.
- The regulatory responsibility to protect Tribal lands and preserve irreplaceable Tribal treaty resources.
- The cumulative impacts to Tribal resources resulting from the proposed project and other energy infrastructure.
- Impacts to Tribal and cultural resources, as submitted by the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation, and the Kah-Milt-Pah (Rock Creek Band of the Yakama Nation).
- Potential impacts to geology, air quality, fish, wildlife, cultural resources, transportation, Tribal religious resources, water quality, and waters of the United States.
- Whether impacts to Tribal cultural resources and other resources may be impossible to mitigate, and whether off-site mitigation will be sufficient to replace lost or adversely impacted habitats.
- Impacts to and compensatory mitigation for habitat and terrestrial species.
- Impacts of the proposal along with impacts from climate change and existing dams to determine the long-term survival of the Columbia River fishery.
- Impacts on water quality.
- The effects of the proposed project's additional water demands on fish and other aquatic resources, the waters that support them, and the overall habitat conditions necessary for their health and well-being.
- Potential impacts related to whether there would be reduced function in stormwater retention, hydrology/water flow, stream reach functions, and habitat of specific wetland features.

Alternatives Considered

To identify alternatives to be studied in the EIS, Ecology considered scoping comments regarding alternatives and the Applicant's FERC Final License Application (Anchor QEA 2021; FFP 2020a). Scoping comments suggested several other technologies and locations. The Applicant proposed three on-site design alternatives, with their preferred design alternative being carried forward into their FERC Final License Application as the proposed project.

Ecology evaluated the potential alternatives to determine whether they met the proposal's objective and associated criteria. Alternatives that did not meet the definition of a reasonable alternative—because they did not achieve the project objectives, would have a higher environmental cost, or were located off site—were eliminated from further consideration (see Section 2.5 of the EIS).

Reasonable Alternatives

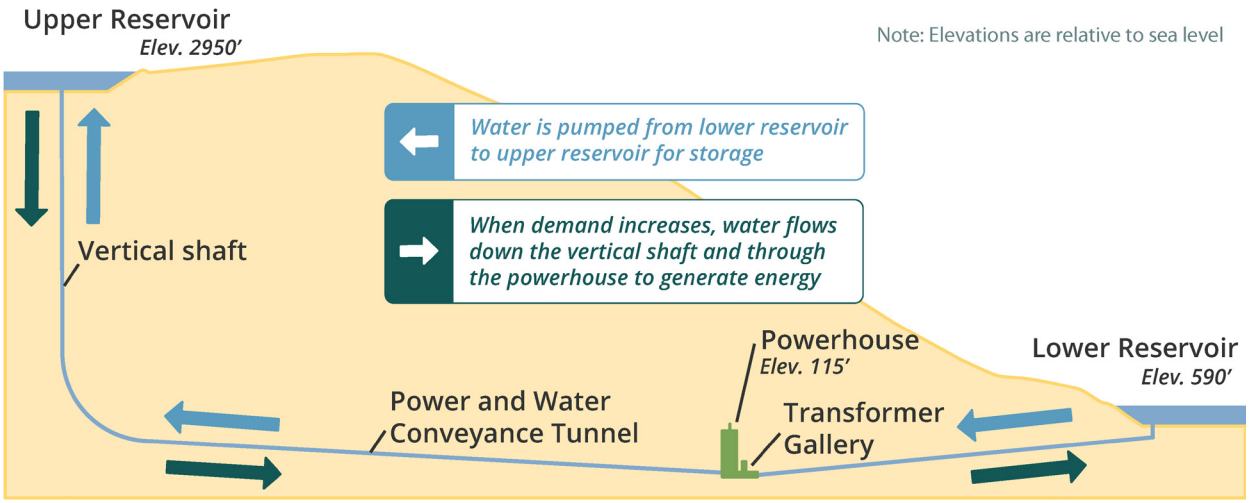
SEPA requires lead agencies to evaluate reasonable alternatives to the proposed project (WAC 197.11.786, 197.11.440(5)). Reasonable alternatives are defined as "actions that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation" (WAC 197.11.440).

Per WAC 197.11.440(5)(d), when a proposal is for a private project on a specific site, the lead agency shall be required to evaluate only the No Action Alternative plus other reasonable alternatives for achieving the proposal's objective on the same site. As such, alternative locations for the proposed project were not evaluated as alternatives for the EIS.

Ecology identified two alternatives to be evaluated in the EIS: the proposed project and the No Action Alternative.

Proposed Project

The proposed project is designed to generate electricity for up to 12 hours a day, up to a maximum of 1,200 MW and a minimum of 100 MW. Pumping water from the lower reservoir to the upper reservoir at the beginning of an operation cycle would take approximately 15 hours. Project operation can alternate between pumping and generating modes quickly and for different lengths of time to respond to market needs, and the operating cycle of pumping and generating would be dictated by market demand (FFP 2020a). The estimated annual power generation if the project was generating power for 8 hours a day, 7 days a week would be 3,500 gigawatt-hours.



The volume of water required to initially fill the project facilities is estimated to be 7,640 acre-feet, which includes the 7,100 acre-feet operating volume for the lower reservoir, water that will remain in the upper

and lower reservoirs beyond the operating volume, and the volume that will fill the water conveyance tunnels (FFP 2020a). It is assumed that the initial fill would be completed over 6.5 months near the end of the construction period (likely between October to March). The timing of the initial fill would depend on the timing of construction activities, such as the lower reservoir construction and the completion of the reservoir fill pipeline to the lower reservoir. The proposed project would be commissioned during the fifth year of construction. It is estimated that the proposed project would require 360 acre-feet of water each year to replenish water lost through evaporation.

Water for the initial fill of the system and periodic refill water would be purchased from KPUD using a KPUD-owned conveyance system and existing water right. This water supply would be sourced from KPUD's existing intake pool off-stream from the Columbia River. Water would be conveyed through a buried 2.5-foot-diameter water fill line leading from a shut-off and throttling valve within a water supply vault owned by KPUD to an outlet structure within the lower reservoir.

No Action Alternative

The No Action Alternative represents the most likely future conditions if the proposed project is not constructed. Under the No Action Alternative, none of the proposed project facilities would be constructed. Investigation of contamination on the cleanup site and development of cleanup actions would continue through a separate process. KPUD would continue to hold the existing water right, which may be held in trust or sold to other purchasers of water. The wind energy project and other existing energy infrastructure would continue to be operated. The analysis for the No Action Alternative is based on the expected conditions in 2030, which is the year that construction of the Applicant's proposed project would be expected to be completed.

Major Conclusions

Table S-1 provides a summary of probable significant adverse impacts from construction and operation of the proposed project for each environmental resource that was analyzed. Although the proposed project would result in significant adverse impacts to terrestrial species and habitat, these impacts were found to be reduced through proposed mitigation and would not result in significant and unavoidable adverse impacts. Mitigation measures considered in the EIS include those proposed by the Applicant as well as those required by applicable permits or proposed to date by State agencies. The measures considered are those that could further avoid, minimize, reduce, or compensate for the identified impacts. Final mitigation measures would be included as conditions of the required project permits or as articles to the FERC license.

Construction and operation of the proposed project would have unique and significant adverse impacts on Tribal and cultural resources, Tribal communities, and Tribal members. Tribal traditions are interwoven into the ecosystems in which Tribal members live, from hunting and gathering to sacred sites—places and activities that have spiritual and cultural meaning. Some mitigation options for Tribal and cultural resources have been proposed by the Applicant. However, to date, there is no information available about mitigation proposed by or supported by the Tribes that would reduce the level of impact to less than significant. Through scoping comments to Ecology and other agencies, conversations during technical meetings, media releases, and a Yakama Nation Tribal council resolution, Tribes have repeatedly indicated it is not likely that mitigation would reduce project impacts to Tribal and cultural resources. It is expected that there would be significant and unavoidable adverse impacts to Traditional Cultural Properties (TCPs), archaeological sites, culturally important plants, and other Tribal resources. Impacts to Tribal resources will continue to be determined through ongoing government-to-government consultation.

Table S-1
Summary of Impacts and Proposed Mitigation

RESOURCE	IMPACT FINDING	SUMMARY DESCRIPTION	SUMMARY OF PROPOSED MITIGATION [1]
Soils and Geology (see Section 4.1)	No significant adverse impacts	• Possibly some impacts on slope stability, but there is uncertainty related to geologic conditions. • Removal of vegetation and exposure of soils, increasing the potential for erosion. • A local or regional earthquake could cause liquefaction, potentially resulting in damage to project elements. Local faults are unlikely to produce earthquakes. The area is in the moderate shaking zone for a Cascadia Subduction Zone earthquake.	• Although mitigation is not required to reduce any significant adverse impacts, additional geotechnical studies, sediment and erosion control plans, implementation of best management practices (BMPs), and design updates are proposed to reduce some impacts.
Water Resources (see Section 4.2)	No significant adverse impacts	• Permanent impact to 0.09 acre of wetlands and streams and 1.34 acres of stream buffer. • Temporary impact to 0.06 acre of wetlands and streams and 0.89 acre of stream buffer. • Water required from the Columbia River through existing water right/authorized consumptive use (7,640 acre-feet initially and estimated 360 acre-feet per year). • Reservoirs would capture precipitation and the system would result in some evaporation and leakage, but would not substantially alter surface water hydrology. • Some alteration to groundwater flow. • Controlled temporary increases in turbidity and pollutants in stormwater. • Water quality degradation in the pumped storage system, but not expected to impact water quality in receiving waters.	• Mitigation is not required to reduce any significant adverse impacts. However, compensatory mitigation for impacts on wetlands and waterbodies will be required through permitting. Measures are also proposed to reduce some impacts. • Compensatory wetland and stream mitigation. • Restoration of disturbed wetlands and streams. • Compensatory buffer mitigation. • Restoration of disturbed buffers. • Shade balls in reservoirs. • Reservoir Water Quality Monitoring Plan. • Construction Water Resource Monitoring and Response Plan. • Operations Water Resource Monitoring and Response Plan.
Air Quality and Greenhouse Gases (see Section 4.3)	No significant adverse impacts	• Estimated total greenhouse gas emissions of 87,919 metric tons CO_2e for construction (17,584 metric tons annually for 5 years) and 80,708 metric tons CO_2e for operations (1,614 metric tons annually for 50 years). • Emissions of some criteria pollutants, greenhouse gases, and hazardous/toxic air pollutants would likely reach levels at which Washington State permits, approvals, and annual reporting may be required.	• Although mitigation is not required to reduce any significant adverse impacts, strategies are proposed to further reduce potential emissions including use of BMPs during construction and selection of efficient equipment. • Additional measures may be required as part of state air quality permitting.

RESOURCE	IMPACT FINDING	SUMMARY DESCRIPTION	SUMMARY OF PROPOSED MITIGATION [1]
Energy Resources (see Section 4.4)	No significant adverse impacts	• Energy resources would not be constrained. • Energy use would be consistent with local and regional plans and would not impact adjacent uses of energy.	• Mitigation is not required to reduce any significant adverse impacts.
Public Services and Utilities (see Section 4.5)	No significant adverse impacts	• Some public services could be temporarily disrupted by construction-related traffic or road detours throughout the 5-year period of construction.	• Mitigation is not required to reduce any significant adverse impacts. • Impacts would be further reduced by the Transportation Impact Analysis.
Aquatic Species and Habitats (see Section 4.6)	No significant adverse impacts	• Permanent loss of 0.09 acre of aquatic habitat. • Temporary disturbance of 0.06 acre of aquatic habitat. • Infrequent mortality, injury, and temporary disturbance to amphibians and turtles could occur during the 5-year construction period. • Indirect impacts on aquatic habitat and fish in the Swale Creek watershed from a permanent or multi-year reduction in ecological function. • Aquatic habitat and species in the Columbia River are not anticipated to be affected.	• Although mitigation is not required to reduce any significant adverse impacts, measures are proposed to reduce some impacts. • Mitigation will be required for impacts to wetlands and waterbodies (see Section 4.2). • Clean Water Act compensatory mitigation, Stormwater Pollution Prevention Plan, and Soil Erosion Control Plan. • Measures that may be required as part of Washington Department of Fish and Wildlife's (WDFW's) Hydraulic Project Approval process. • Vegetation Management and Monitoring Plan (VMMP) and Wildlife Management Plan (WMP). • WDFW-proposed addition to the WMP for wildlife surveys to include aquatic species. • WDFW-proposed addition to the WMP for amphibian salvage during construction. • Construction and Operations Water Resource Monitoring and Response Plans.

RESOURCE	IMPACT FINDING	SUMMARY DESCRIPTION	SUMMARY OF PROPOSED MITIGATION [1]
Terrestrial Species and Habitats (see Section 4.7)	**No significant and unavoidable adverse impacts with implementation of proposed mitigation measures**	• Direct and indirect impacts on special status species including golden eagle, little brown bat, smooth desert parsley, and other rare plants. • Permanent loss of 193.6 acres of existing habitat. • Temporary disturbance of 54.3 acres of habitat. • Indirect impacts to habitat function and quality for some species during operations. • Plants, mammals, reptiles, and invertebrates could experience mortality and birds could experience disturbance during the 5-year construction period, but species viability would not be adversely affected.	• VMMP, which includes restoration, protection, weed management, revegetation, and monitoring measures. • WMP, which includes: – Purchase of an off-site property for compensatory mitigation for habitat impacts – Surveys, monitoring, and reporting – Scheduling and work area limits – Noise, light, traffic, and dust control measures – Training – Wildlife deterrents – Development of additional mitigation measures with agencies • WDFW-proposed additions to the WMP for peregrine falcon and raptor monitoring, mitigation, and protection measures. • WDFW-proposed additions to the WMP for bat surveys and deterrent measures.
Aesthetics/ Visual Quality (see Section 4.8)	No significant adverse impacts There would be impacts to Tribes from the view changes, which are described in Section 4.9	• Construction visual changes would disrupt natural harmony, cultural order, and coherence, and may affect viewers intermittently over 5 years. • The facility would be a dominant structure from some viewpoints but only seen at a distance from the most accessible areas. Viewers may be aware of the visual changes; however, important views would still be available.	• Although mitigation is not required to reduce any significant adverse impacts, measures are proposed to reduce some impacts. • Minimize construction debris. • Design to reduce degree of contrast. • Revegetate some areas. • Minimize exterior lighting and nighttime light pollution. • Dust control and other BMPs.

RESOURCE	IMPACT FINDING	SUMMARY DESCRIPTION	SUMMARY OF PROPOSED MITIGATION [1]
Cultural and Tribal Resources (see Section 4.9)	**Significant and unavoidable adverse impacts**	• The proposed project will have unique significant and unavoidable adverse impacts on Tribal communities and Tribal members. • Limitations or elimination of resource gathering and other ritual and cultural activities associated with the TCPs *Pushpum* and *Nch'ima* as well as other TCPs for which names have not been shared. • Impacts to Tribal members' ability to participate in, teach, and share cultural practices affects the mental, spiritual, and physical health of Tribal members. • Restrictions to access and removal of areas used for cultural practices that indirectly affect entire Tribal communities. • Visual changes in the natural state of the landscape that could interrupt Tribal cultural practices and impact the expression of Tribal spirituality. This change also constitutes an impact to the TCPs. • Access to traditional gathering areas for medicinal and traditional plants and foods would be restricted, and permanently lost in the reservoir areas. • Potential impacts to wildlife species that are used by Tribes for cultural or spiritual practices. • Potential impacts on recorded and unrecorded archaeological sites associated with TCPs. • Archaeological sites and the Columbia Hills Archaeological District will be impacted by construction. • Department of Archaeology and Historic Preservation estimates 15 sites could be disturbed.	• Some mitigation options for Tribal and cultural resources have been proposed by the Applicant. However, to date, there is no information available about mitigation proposed by or supported by the Tribes that would reduce the level of impact to less than significant.
Environmental Health (see Section 4.10)	No significant adverse impacts	• Construction and operation of the proposed project could cause possible spills, discharge, or disturbance of hazardous or contaminated materials. • Completing the West Surface Impoundment removal would permanently remove a large quantity of contaminated materials. • Noise and vibration are expected to be temporary and occur in areas where very few people could be affected. • There would be an extremely low probability for failure of a reservoir.	• Mitigation is not required to reduce any significant adverse impacts. Required permits, plans, and monitoring would further reduce any associated risks for environmental health. • Impacts would be reduced by the Construction and Operations Water Resource Monitoring and Response Plans, the dust control and other BMPs, and the WMP.

RESOURCE	IMPACT FINDING	SUMMARY DESCRIPTION	SUMMARY OF PROPOSED MITIGATION [1]
Land Use (see Section 4.11)	No significant adverse impacts	• Conversion from undeveloped space and previous industrial operations to a utility-scale pumped hydropower facility. • May require a conditional use permit from Klickitat County based on existing zoning, but would not require a modification or amendment to an existing zoning, planning, or policy document.	• Although mitigation is not required to reduce any significant adverse impacts, zoning coordination with Klickitat County may be required for a conditional use permit to address the inconsistency of the proposed land use within the project area.
Recreation (see Section 4.12)	No significant adverse impacts	• Temporary and intermittent traffic and access changes to recreational opportunities and access to facilities within 10 miles of the proposed project area during construction.	• Although mitigation is not required to reduce any significant adverse impacts, measures are proposed to reduce some impacts. • Visual and Recreation Resource Management Plan. • Recreational access traffic coordination. • Interpretive sign. • Transportation Impact Analysis.
Transportation (see Section 4.13)	No significant adverse impacts	• Construction traffic, road closures, and detours would result in temporary increases in traffic interference and congestion on regional and local roads and highways throughout construction.	• Although mitigation is not required to reduce any significant adverse impacts, measures are proposed to reduce some impacts. • Construction traffic coordination. • Construction Traffic Management Plan. • Transportation Impact Analysis.
Environmental Justice (see Section 4.14)	No significant adverse impacts	• No significant adverse impacts related to environmental justice. • No disproportionate impact on communities of color or low-income populations.	• Mitigation is not required to reduce any disproportionate impacts to communities of color and low-income populations.

Note:

1. Mitigation measures include those proposed by the Applicant as well as those required by applicable permits or proposed to date by state agencies.

Areas of Controversy and Uncertainty

There is uncertainty related to subsurface conditions on the site, including geologic conditions and the location of a potential groundwater divide separating the aquifers of the northern and southern portions of the study area. Additional geotechnical studies proposed by the Applicant are expected to address this uncertainty as the design process proceeds.

Due to uncertainties in the quantities and specific off-site sources of construction materials and disposal locations, the Draft EIS uses assumptions for these considerations in the analyses related to transportation, energy use, and emissions. This uncertainty will be reduced as the Applicant's design is refined.

Another area of uncertainty is the magnitude of the future effects of climate change and how the changing climate will affect water availability, as well as some species and habitats. However, based on the information available, it is not anticipated that these climate changes would substantially alter the impact determinations in the Draft EIS.

As previously noted, some mitigation options for Tribal and cultural resources have been proposed by the Applicant, but the Tribes have indicated that this is not sufficient. To date, there is no information available about mitigation proposed by or supported by the Tribes that would reduce the unique impacts on Tribal and cultural resources to a level that is less than significant.

More detailed studies and review—including identification of specific impacts and mitigation measures—would be conducted during the permitting processes, before implementation of the proposed project, and would be expected to reduce uncertainties.

Next Steps

Ecology will review and consider all comments received during the public comment period and may make edits to the EIS as a result. The Final EIS is estimated to be completed in late 2022 and will be released to the public.

The Final EIS will provide information for public, local, and state agencies to support decision-making regarding permits for the proposed project. All primary local, regional, state, and federal permits must be issued before the proposed project may begin.