



Proposed Goldendale Energy Storage Project

State Environmental Policy Act Environmental Impact Statement

Summary



Publication No. 22-06-015

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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 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 an existing 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 (MTCA) 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 Public Utility District No. 1 of Klickitat County (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 EIS to meet the requirements of the Washington State Environmental Policy Act (SEPA) (Chapter 43.21C of the Revised Code of Washington [RCW]) 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

The SEPA EIS

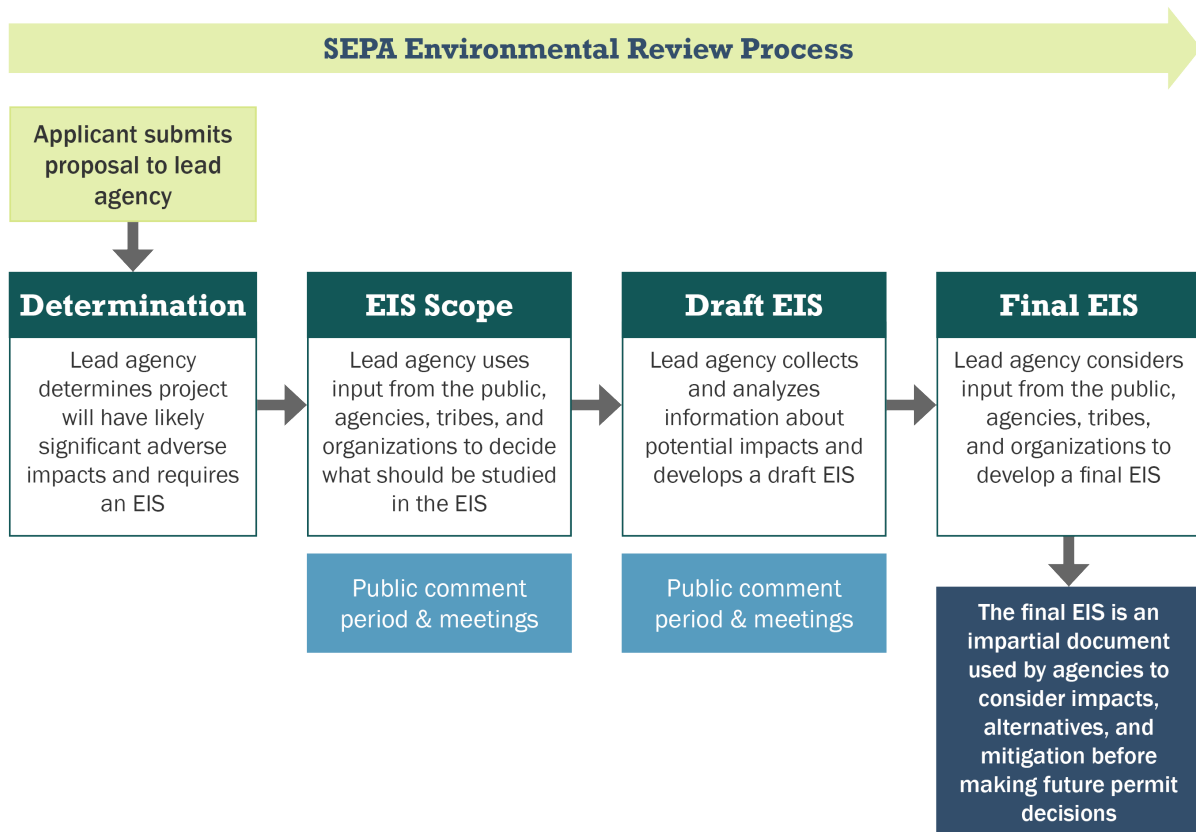
Under SEPA, an EIS is necessary if a proposed action is likely to result in significant adverse environmental impacts.

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.

other information to inform permitting 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 (Anchor QEA 2021).

Draft Environmental Impact Statement Public Comment Period

The Draft EIS was published on June 6, 2022, and interested parties were notified of the document's availability and opportunities to comment on the document. Comments were accepted during a 64-day public comment period (June 6, 2022, through August 9, 2022). The Draft EIS was originally available for public review and comment until July 25, 2022; however, an extension was granted to extend the review and comment period for an additional 15 days through August 9, 2022.

During the public comment period, Ecology held three public hearings. Comments were received through various methods, including electronic submittals using a comment form on the EIS website, oral comments provided at the public hearings, and comments submitted by mail, fax, or email.

Tribes, agencies, members of the public, and stakeholders were invited to provide comments. Additional details on the public comment process and the comments received are in the *EIS Comment Response Report* (Anchor QEA 2022a).

Issuance of Final Environmental Impact Statement

All comments submitted during the public comment period were reviewed and considered in the development of the Final EIS. Where relevant and appropriate, revisions identified in the comments, as well as other substantive changes to the Draft EIS, have been incorporated into this Final EIS. All substantive comments on the Draft EIS have been responded to in the *EIS Comment Response Report*. Analyses in the EIS relied on information available at the time. The EIS identifies the analyses that are in development or anticipated to be developed in the future through other processes.

The Final EIS consists of the updated Fact Sheet, this final Summary, the updated Final EIS and appendices, and the *EIS Comment Response Report*. The Final EIS is being issued under WAC 197.11.460 and completes the SEPA process.

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).

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

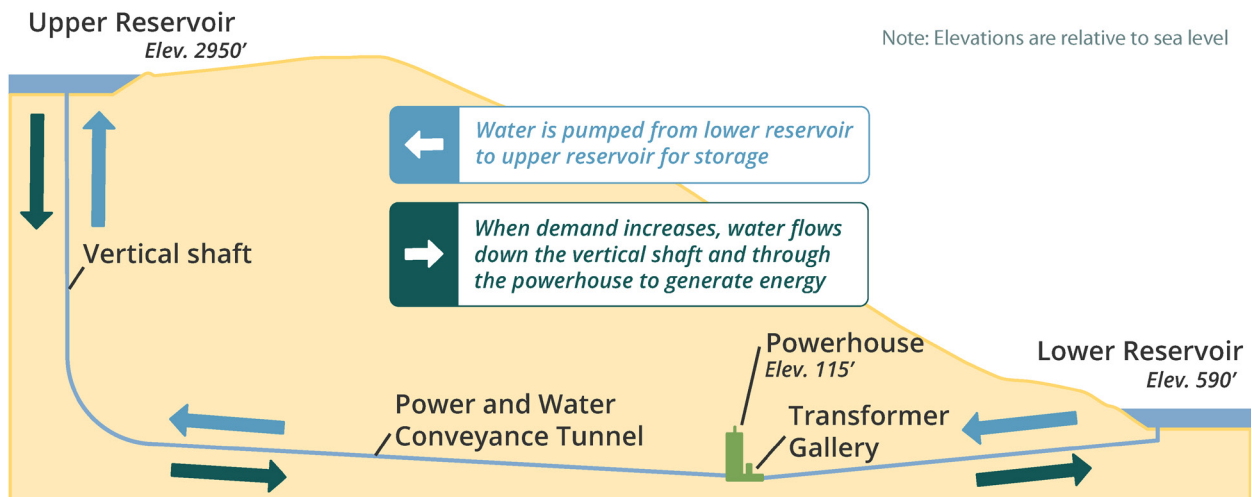
Reasonable Alternatives

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.

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 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 an existing conveyance system and existing water right. This water supply would be sourced from the 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 an existing water supply vault 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 resource impacts 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.

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	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Permanent impact to 0.08 acre of wetlands and streams and 1.4 acres of stream buffer. • Temporary impact to 0.04 acre of 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. 	<ul style="list-style-type: none"> • 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 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	<ul style="list-style-type: none"> • Estimated total greenhouse gas emissions of 87,919 metric tons CO₂e for construction (17,584 metric tons annually for 5 years) and 80,708 metric tons CO₂e 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. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Energy resources would not be constrained. • Energy use would be consistent with local and regional plans and would not impact adjacent uses of energy. 	<ul style="list-style-type: none"> • Mitigation is not required to reduce any significant adverse impacts.
Public Services and Utilities (see Section 4.5)	No significant adverse impacts	<ul style="list-style-type: none"> • Some public services could be temporarily disrupted by construction-related traffic or road detours throughout the 5-year period of construction. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Permanent loss of 0.08 acre of aquatic habitat. • Temporary disturbance of 0.04 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. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • VMMP, which includes restoration, protection, weed management, revegetation, and monitoring measures. • WMP, which includes: <ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 <i>Pushpum (Put-a-lish)</i> and <i>Nch'ima</i> 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. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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, the vibration monitoring program, and the WMP.

RESOURCE	IMPACT FINDING	SUMMARY DESCRIPTION	SUMMARY OF PROPOSED MITIGATION ¹
Land Use (see Section 4.11)	No significant adverse impacts	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Temporary and intermittent traffic and access changes to recreational opportunities and access to facilities within 10 miles of the proposed project area during construction. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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. 	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • No significant adverse impacts related to environmental justice. • No disproportionate impact on communities of color or low-income populations. 	<ul style="list-style-type: none"> • 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 Final 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 Final EIS.

As previously noted, some mitigation options for Tribal and cultural resource impacts 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.

Changes in the Final Environmental Impact Statement

Where relevant and appropriate, revisions identified in public comments, as well as other substantive changes to the Draft EIS, have been incorporated into this Final EIS. In general, revisions have been made to clarify details of the Applicant's proposed project, correct inadvertent errors, provide additional information related to the analysis of impacts, and refine mitigation measures to address potential impacts. No new or more significant impacts were identified as a result of these updates.

This Final EIS reflects the following changes from the Draft EIS:

EIS Package Organization and Cover Letter, Fact Sheet, Table of Contents, and Summary

- The *EIS Comment Response Report* has been added as an element of the complete EIS package.
- The cover letter, fact sheet, table of contents, and summary have been updated to reflect the Draft EIS comment period and Final EIS publication information. The SEPA Environmental Review Process graphic and section on Next Steps have been updated in the Summary to show this progress.
- The Water Resources row of Table S-1, summarizing wetland and stream impacts and proposed mitigation, and the Aquatic Species and Habitats row of Table S-1, summarizing aquatic habitat impacts, were updated for the Final EIS to reflect the reduction in impacts to waterbodies and resulting mitigation changes noted below for Sections 4.2 and 4.6.
- The Environmental Health row of Table S-1, summarizing environmental health mitigation measures, was updated for the Final EIS to reflect the Applicant's intent to implement a construction vibration monitoring program, as noted below for Section 4.10.

Select Figures and Recurring Text Throughout the EIS

- Instances where the EIS previously referred to *the Draft EIS* have been updated to *the EIS* for information that did not change between draft and final.
- KPUD indicated in a comment letter on the Draft EIS that they do not own the existing pump station adjacent to an intake pool off-stream from the Columbia River but instead hold an easement from the U.S. Army Corps of Engineers and have an agreement in place to purchase the pump station and associated infrastructure. Recurring text in the Final EIS and associated figures referring to the existing pump station and infrastructure have been modified to remove previous indications of KPUD current ownership that were erroneously included in the Draft EIS.

Chapter 1, Introduction and Background

- Summary text in Section 1.2.3 was revised to provide more detail and clarity on how alternatives were identified.
- Text was added to Sections 1.4 and 1.5 to reflect the SEPA Draft EIS comment period and SEPA Final EIS publication information, as well as to update the summary of the FERC NEPA process based on currently available information.

Chapter 2, Proposed Project Description and Alternatives

- The description of the prospective purchaser consent decree in Section 2.2 was revised to reflect that the Applicant intends to lease—not purchase—the land required for lower reservoir construction.
- In Section 2.5, text was added and modified to provide more detail and clarity on the reasons the alternatives were considered but eliminated, along with the reasons those options were not considered “reasonable alternatives.”

Chapter 4, Affected Environment, Potential Significant Impacts, and Mitigation Measures

Section 4.1, Soils and Geology

- Section 4.1.2.1 was revised to add information about any risks of disturbance or redistribution of existing contamination by a mass wasting event in the portion of the project area that overlaps the former CGA smelter site.

Section 4.2, Water Resources

- This section was edited to incorporate additional wetland and stream delineation fieldwork that was performed within a portion of the study area by the Applicant’s consultant (ERM 2022a). The new delineation determined that some areas previously identified as wetlands in the Draft EIS (Wetlands A, B, C, and D) did not meet wetland criteria and one area previously identified as an intermittent stream in the Draft EIS (Stream 2) did not have a distinct channel, flow, or hydric soils. Resulting changes to this section of the EIS are as follows:
 - The Final EIS and associated figures have been revised to remove Wetlands A, B, C, and D and Stream 2 from the existing conditions description and the impact analysis.
 - Impact totals in the Key Findings box and text and tables within the section were updated for the Final EIS to reflect a reduction in impacts to waterbodies, as follows:
 - Permanent impacts to 0.027 acre of Category IV wetlands (Pond/Wetland P2), 0.05 acre of streams (Stream S7, Stream S8, and Stream 1), and 1.34 acres of stream buffer.
 - Temporary impacts to 0.04 acre of streams (Stream S8), and 0.89 acre of stream buffer.
 - No temporary impacts to wetlands or wetland buffers.

- The existing conditions description of groundwater in the southern portion of the study area was updated to indicate that unconsolidated aquifer (UA) groundwater may daylight to the surface, but without indication that there could be connection to Wetlands A, B, C, or D.
- Construction impact descriptions relative to alteration of surface water hydrology and indirect impacts from construction also reflect these updates.
- Mitigation measures were updated to remove restoration of temporarily disturbed wetlands and wetland buffers.
- The additional wetland delineation fieldwork that was performed within a portion of the study area by the Applicant's consultant (ERM 2022a) also resulted in refined areas and wetland categories for Wetlands 1 and 2. Edits were made to Tables 4.2-1, 4.2-2, and 4.2-3.
- Section 4.2.2.1 was updated to correct a typographical consistency error that incorrectly referred to KPUD's annual consumptive use authorization as 4,861 acre-feet per year (AFY). The correct authorized quantity reflected in the Final EIS is 4,851 AFY.
- The section was updated with additional Cliffs municipal water right details that were received from KPUD regarding an existing commitment of 625 AFY. The text was updated to include this detail and the resulting total of 4,226 AFY of consumptive water under KPUD's municipal water right that is available to meet the water supply needs of the proposed project. Text was also clarified regarding an initial fill quantity of 7,640 acre-feet at an estimated rate of 21 cubic feet per second (cfs) continuously over approximately 6 months, assumed to occur across a 2-calendar-year period (e.g., about 3 months at the end of one calendar year, and the first 3 months of the subsequent calendar year) to comply with the consumptive use quantity authorized by the KPUD water right.
- The description of groundwater flow systems in Section 4.2.2.1 was revised to reflect that the Applicant submitted a revised Section 401 Water Quality Certification application, which includes a draft Dewatering Plan (ERM 2022b), and text was clarified regarding compliance with applicable Construction Stormwater General Permit requirements.
- Text was added to this section to integrate Tribal perspectives on the resources and impacts and to provide cross-reference to the additional description of impacts to Tribes that is provided in the *Tribal Resources Analysis Report* (Appendix H; Ecology et al. 2022) and Section 4.9.

Section 4.4, Energy Resources

- Section 4.4.2.1 was revised to add an estimate of the time needed for the proposed project operations to offset the energy usage during construction.

Section 4.5, Public Services and Utilities

- Text was added to this section to note that the existing domestic wastewater system would require upgrades to serve the proposed project.

Section 4.6, Aquatic Species and Habitats

- Aquatic habitat impact totals in the Key Findings box were updated for the Final EIS to reflect the reduction in impacts to waterbodies noted above for Section 4.2.
- Section 4.6.2.1 was edited to clarify that no additional impact to Columbia River flows would occur during the initial fill of the project.
- Text was added to this section to integrate Tribal perspectives on Tribally important species and the potential for impacts to active and contemporary harvest activities of Tribal members, and to provide cross-reference to the additional description of impacts to Tribes that is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.

Section 4.7, Terrestrial Species and Habitats

- Information was incorporated from the recently provided 2008 wind farm study that evaluated winter bird presence and turbine exposure risk (WEST 2008).
- Updated information on bald and golden eagles in the area has been added from a letter from the Department of Interior to FERC, including a summary of nest surveys conducted between 2013 and 2019 (DOI 2022), information on golden eagle home ranges near the lower reservoir area, population changes related to wind development in the John Day area (WDFW 2015a, 2020), prey species (WDFW 2015a; Watson 2015 as cited in DOI 2022), and nest usage (Watson and Whalen 2003).
- Updated information provided by WDFW confirmed that the western gray squirrel is unlikely to occur in the study area because its habitat is not present. Detailed information on western gray squirrel was removed throughout the section.
- Text was added to this section to integrate Tribal perspectives on culturally important plant and wildlife species and impacts and to provide cross-reference to the additional description of impacts to Tribes that is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.
- Two WDFW-proposed mitigation measures were modified to add additional detail that was recently recommended by WDFW (2022) and U.S. Fish and Wildlife Service (USFWS; DOI 2022), as follows:
 - Flight diverters and visibility enhancement devices were added to the “Focused Raptor Mitigation and Protection” measure
 - Post-construction surveys to determine the effectiveness of floating shade balls or other proposed deterrents in deterring bat foraging above the reservoirs was added to the “Implementation of Bat Deterrent Measures” measure

Section 4.8, Aesthetics/Visual Quality

- Text was added to this section to augment the description of Tribes as sensitive viewers; to further integrate Tribal perspectives on the resources and the potential for impacts to active and contemporary hunting, gathering, and cultural activities of Tribal members; and to clarify the existing cross-references to the additional description of impacts to Tribes that is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.

Section 4.9, Cultural and Tribal Resources

- Text was added throughout the section to include the “Put-a-lish” name used by the Rock Creek Band of the Yakama Nation to refer to an area also identified as *Pushpum*.
- Text referring to “government-to-government Tribal consultation” was corrected to other kinds of engagement and discussions between Ecology and Tribes, where relevant.
- Revisions were made to clarify that changes to terrestrial animals’ use and migration patterns could affect Tribal hunting practices.
- A sentence was deleted that previously indicated reseeding would partially mitigate construction impacts.
- The Applicant supplied a list of their proposed cultural resource mitigation measures as part of their comment letter submitted on the Draft EIS. Text was added to this section to note that the list has been attached to Appendix H in the Final EIS.

Section 4.10, Environmental Health

- Descriptions of the prospective purchaser consent decree were revised to reflect that the Applicant intends to lease—not purchase—the land required for lower reservoir construction and to clarify that the cleanup action plan and prospective purchaser consent decree will undergo a public review and comment period as required by MTCA.
- Descriptions of the volume of the material to be removed during the cleanup action were revised to reflect that this volume is an estimate and is subject to change, following completion of the final feasibility study and observed conditions or performance monitoring conducted during the cleanup action, and could potentially include an additional amount of underlying soils.
- The description of construction stormwater management in Section 4.10.2.1 was revised to reflect that the Applicant submitted a revised Section 401 Water Quality Certification application, which includes a draft Dewatering Plan (ERM 2022b), and to clarify compliance with applicable Construction Stormwater General Permit requirements.
- References to information that was previously gathered from a draft Remedial Investigation Report (Tetra Tech et al. 2021) were updated to reference a revised 2022 version of the report. Relevant information was confirmed and did not result in changes to the EIS.
- A mitigation measure was added to Section 4.10.2.3 to reflect the Applicant's intent to implement best management practices that include a construction vibration monitoring program to reduce the potential for damage to existing wind farm facilities and prevent interruptions to their operation.

Section 4.14, Environmental Justice

- Text was clarified to state that although Tribes are included in the evaluation of environmental justice communities, in order to fully recognize the Tribes as sovereign nations and respect their deep connection to natural resources within the project area, the detailed description of impacts to Tribes is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.

Chapter 6, Cumulative Impacts

- The total areas of wetland, stream, and buffer impacts summarized in Sections 6.2.2 and 6.2.6 were updated to reflect the changes noted above for Section 4.2.
- A sentence that referred to a previous access agreement was deleted from Section 6.2.9, to reflect the change noted below for the *Tribal Resources Analysis Report* (Appendix H).

Chapter 7, Consultation and Coordination

- This section was updated to reflect the Draft EIS comment period, Final EIS publication information, and updated agency and Tribal coordination details.

Chapter 9, Distribution List

- The distribution list was updated to include additional commenters from the Draft EIS comment period.

Chapter 10, References

- Reference information was added for new sources cited in the EIS text updates, including the following:
 - Additional wetland and stream delineation fieldwork reports
 - Recently provided information from a prior wind farm study and information on bald and golden eagles in the area
 - Updated cleanup reports and plans

- Additional information on terrestrial animals' use and migration patterns and Tribal hunting practices
- References to comments received on the Draft SEPA EIS, through the Section 401 Water Quality Certification process, or through FERC's separate NEPA process, were added for those materials that are specifically cited in the text of this EIS. All comments received on the Draft SEPA EIS are attached to the *EIS Comment Response Report*. To review the federal NEPA environmental review documents, visit the FERC document library.¹ Information related to the Section 401 Water Quality Certification process is available on Ecology's website.²

Appendix B, Surface and Groundwater Hydrology Resource Analysis Report

- As noted above for EIS Section 4.2, the Final EIS has been revised to remove Wetlands A, B, C, and D and Stream 2. Edits were also made to refine wetland areas and categories for Wetlands 1 and 2. These edits resulted in changes to Appendix B (Aspect Consulting 2022), where updates were made to text, totals, reference material citations, and information cross-references.
- As noted above for EIS Section 4.2, Section 3.2.3.1.1 of Appendix B was updated to indicate that UA groundwater may daylight to the surface, removing text that indicated there could be connection to Wetlands A, B, C, or D.
- As noted above for EIS Section 4.2, text about the initial fill and additional Cliffs municipal water right details have also been clarified throughout Appendix B.
- As noted above for EIS Section 4.2, Section 3.3.1.1.1 of Appendix B was updated to correct a typographical consistency error that incorrectly referred to KPUD's annual consumptive use authorization as 4,861 AFY. The correct authorized quantity reflected in the Final EIS is 4,851 AFY.
- As noted above for EIS Section 4.2, the description of groundwater flow systems in Section 3.3.1.1.2 of Appendix B was also revised to reflect that the Applicant submitted a revised Section 401 Water Quality Certification application, which includes a draft Dewatering Plan (ERM 2022b), and text was clarified regarding compliance with applicable Construction Stormwater General Permit requirements.
- As noted above for EIS Section 4.5, text was modified in Section 3.3 of Appendix B to clarify that the existing domestic wastewater system would require upgrades to serve the proposed project.
- Text was added to Appendix B to integrate Tribal perspectives on the resources and impacts and to provide cross-reference to the additional description of impacts to Tribes that is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.

Appendix C, Wetlands and Regulated Waters Resource Analysis Report

- As noted above for EIS Section 4.2, the Final EIS has been revised to remove Wetlands A, B, C, and D and Stream 2. Edits were also made to refine wetland areas and categories for Wetlands 1 and 2. These edits resulted in changes to Appendix C (Anchor QEA 2022b), where updates were made to incorporate information from the additional wetland and stream delineation fieldwork that was performed within a portion of the study area by the Applicant's consultant (ERM 2022a) and updates were made to text, totals, cross-references, and citations throughout the appendix.
- As noted above for EIS Section 4.2, mitigation measures in Section 3.3.4 of Appendix C were also updated to remove restoration of temporarily disturbed wetlands and wetland buffers.

¹ https://elibrary.ferc.gov/eLibrary/docketsheet?docket_number=p-14861

² <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/401-Water-quality-certification>

Appendix E, Energy Resource Analysis Report

- A paragraph was added to Section 3.3 of Appendix E (Trinity 2022b) to clarify the dynamic forecasts of operational energy input and generation expected with the proposed project.
- As noted above for EIS Section 4.4, Section 3.3.1.1 of Appendix E was revised to add an estimate of the time needed for the proposed project operations to offset the energy usage during construction.

Appendix F, Aquatic Species and Habitats Resource Analysis Report

- As noted above for EIS Section 4.2, the Final EIS has been revised to remove Wetlands A, B, C, and D and Stream 2. Edits were also made to refine some wetland areas and categories. As noted above for EIS Section 4.6, aquatic habitat impacts were updated for the Final EIS to reflect the reduction in impacts to waterbodies. These edits resulted in changes to Appendix F (Anchor QEA 2022c), where updates were made to text, totals, reference material citations, and information cross-references.
- As noted above for EIS Section 4.2, text about the initial fill has been clarified. In Appendix F this resulted in updates to Section 3.3.
- As noted above for EIS Section 4.6, text in Appendix F Section 3.3.1.1 was edited to clarify that no additional impact to Columbia River flows would occur during the initial fill of the project.
- Text was added to Appendix F to integrate Tribal perspectives on Tribally important species and the potential for impacts to active and contemporary harvest activities of Tribal members, and to provide cross-reference to the additional description of impacts to Tribes that is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.

Appendix G, Terrestrial Species and Habitats Resource Analysis Report

- Text in Appendix G (Anchor QEA 2022d) was clarified to note that there would be pre-construction wildlife surveys.
- As noted above for EIS Section 4.7, updated information provided by WDFW confirmed that the western gray squirrel is unlikely to occur in the study area because its habitat is not present. Detailed information on western gray squirrel was removed throughout Appendix G, including the Summary, existing conditions information, impact determinations, and attached Table A-2.
- As noted above for EIS Section 4.7, information from a 2008 wind farm study (WEST 2008) was incorporated in Appendix G and its attachments.
- As noted above for EIS Section 4.7, updated information on bald and golden eagles in the area from a letter from the Department of Interior to FERC (DOI 2022; WDFW 2015a, 2020; Watson 2015 as cited in DOI 2022; Watson and Whalen 2003) was added to Appendix G.
- To clarify the location of the proposed project relative to mule deer distributions, Attachment 3 of Appendix G was updated to add a note indicating the location of the proposed project within WDFW Game Management Unit 382. An additional map, showing a detailed view of Game Management Unit 382 with roads and landmarks, was also added to Attachment 3 of Appendix G.
- Text was added to Appendix G to integrate Tribal perspectives on culturally important plant and wildlife species and impacts and to provide cross-reference to the additional description of impacts to Tribes that is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.
- For clarity, additional description of edge effects was added to Section 3.3.2.2 of Appendix G.

- As noted above for EIS Section 4.7, two WDFW-proposed mitigation measures were modified to add additional detail that was recently recommended by WDFW and USFWS (WDFW 2022; DOI 2022), as follows:
 - Flight diverters and visibility enhancement devices were added to the “Focused Raptor Mitigation and Protection” measure.
 - Post-construction surveys to determine the effectiveness of floating shade balls or other proposed deterrents in deterring bat foraging above the reservoirs was added to the “Implementation of Bat Deterrent Measures” measure.

Appendix H, Tribal Resources Analysis Report

- Text was removed throughout Appendix H that referred to a “Programmatic Agreement between the State of Washington and Bonneville Power Administration for ongoing root and plant gathering access by Yakama Nation Tribal members.” Comments provided during the Draft EIS public comment period clarified that the referenced agreement was never implemented because it was tied to a project that was not constructed.
- Additional quotations and details provided by Tribes during the Draft EIS public comment period were added to Appendix H to further integrate Tribal perspectives.
- The lists of plant and animal species associated with Tribal use in Tables 3 and 4 of Appendix H were updated based on updates to the *Terrestrial Species and Habitats Resource Analysis Report* (Appendix G), *Aquatic Species and Habitats Resource Analysis Report* (Appendix F), and information provided by Tribes during the Draft EIS public comment period.
- As noted above for EIS Section 4.7, updated information provided by WDFW confirmed that the western gray squirrel is unlikely to occur in the study area because its habitat is not present. Western gray squirrel was also removed from Appendix H.
- As noted above for EIS Section 4.9, text throughout Appendix H that referred to “government-to-government Tribal consultation” was corrected to indicate other kinds of engagement and discussions between Ecology and Tribes, where relevant.
- As noted above for EIS Section 4.9, revisions were made to Appendix H to clarify that changes to terrestrial animals’ use and migration patterns could affect Tribal hunting practices.
- As noted above for EIS Section 4.9, text was added throughout Appendix H to include the “Put-a-lish” name used by the Rock Creek Band of the Yakama Nation to refer to an area also identified as *Pushpum*.
- As noted above for EIS Section 4.9, a sentence was also deleted from Appendix H that previously indicated reseeding would partially mitigate construction impacts.
- As noted above for EIS Section 4.9, the Applicant supplied a list of their proposed cultural resource mitigation measures as part of their comment letter submitted on the Draft EIS. The list was added as Attachment 1 to Appendix H in the Final EIS.

Appendix I, Environmental Health Resource Analysis Report

- Table 2 in Appendix I (Aspect and Anchor QEA 2022) was updated for Washington State policies with changed locations in the RCW.
- As noted above for EIS Section 4.2, Section 3.2.2.2 of Appendix I was updated to indicate that UA groundwater may daylight to the surface, removing text that indicated there could be connection to Wetlands A, B, C, or D.
- As noted above for EIS Section 4.10, references to information that was previously gathered from a draft Remedial Investigation Report (Tetra Tech et al. 2021) were updated to reference a

revised 2022 version of the report. Relevant information was confirmed and did not result in substantive changes to Appendix I.

- As noted above for EIS Section 4.10, descriptions of the prospective purchaser consent decree were revised in Appendix I to reflect that the Applicant intends to lease—not purchase—the land required for lower reservoir construction and to clarify that the cleanup documents will undergo public review and comment as required by MTCA. Revisions in Appendix I also include additional detail of the requirements of applicable federal, state, and local laws, permits, and approvals for the cleanup actions.
- As noted above for EIS Section 4.10, descriptions of the volume of the material to be removed during the cleanup action were revised in Appendix I to reflect that this volume is an estimate and is subject to change, following completion of the final feasibility study and observed conditions or performance monitoring conducted during the cleanup action, and could potentially include an additional amount of underlying soils.
- As noted above for EIS Section 4.10, descriptions of construction stormwater management were revised to reflect that the Applicant submitted a revised Section 401 Water Quality Certification application, which includes a draft Dewatering Plan (ERM 2022b). This text was also revised in Appendix I and text was clarified regarding compliance with applicable Construction Stormwater General Permit requirements.
- As noted above for EIS Section 4.10, a mitigation measure was also added to Section 3.3.4 of Appendix I to reflect the Applicant's intent to implement best management practices that include a construction vibration monitoring program to reduce the potential for damage to existing wind farm facilities and prevent interruptions to their operation.

Appendix J, Environmental Justice Report

- Text in Appendix J (Anchor QEA 2022e) was clarified to state that although Tribes are included in the evaluation of environmental justice communities, in order to fully recognize the Tribes as sovereign nations and respect their deep connection to natural resources within the project area, the detailed description of impacts to Tribes is provided in the *Tribal Resources Analysis Report* (Appendix H) and Section 4.9.

Next Steps

This Final EIS provides information for public, local, and state agencies to support permit and other project decisions, along with other relevant information. All applicable local, regional, state, and federal permits must be issued before the proposed project would begin.