



## Department of Energy

Golden Field Office  
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DOE/EA-1933

### FINDING OF NO SIGNIFICANT IMPACT DROP 4 HYDROPOWER PROJECT

**AGENCY:** U.S. Department of Energy, Golden Field Office

**ACTION:** Finding of No Significant Impact (FONSI)

**SUMMARY:** The U. S. Department of Energy (DOE) is proposing to authorize the expenditure of federal funding to the Confederated Tribe and Bands of the Yakama Nation (YN), a federally recognized tribe, to install an inline turbine on the Wapato Irrigation Project (WIP) Main Canal to generate one megawatt (1 MW) of hydroelectric power (Drop 4 Hydropower Project). DOE funding would be used for final design, construction, and installation of an inline turbine at Drop 4, as well as a generator house, electrical substation, overhead transmission lines, and a downstream water diversion structure.

The WIP was constructed and is operated by the United States Department of Interior (DOI) Bureau of Indian Affairs (BIA) and, since 1904, has supplied irrigation water to agricultural land within the Yakama Reservation. The gravity flow WIP system was designed to incorporate low-head power generation facilities at several strategic elevation drops constructed with the system. Initially, the power generated from the low-head power generation facilities offset the minor power consumption needs of WIP associated with water pumping. Since initial construction the amount of irrigated land within the Yakama Reservation, volume of water, pumping power required, need for more efficient irrigation methods, and water conservation measures have increased. Concurrently, the WIP infrastructure has aged with some components nearing end of engineering life. A 1994 feasibility study concluded that the Drop 4 location was the most viable location within the existing canal system for the construction of a new hydropower facility.

The BIA was the lead federal agency and DOE was a cooperating agency on the Environmental Assessment (EA) titled *Drop 4 Hydropower Project National Environmental Policy Act (NEPA) Environmental Assessment*, which evaluates the potential environmental impacts associated with DOE's proposed action and a no action alternative. The determination that the BIA would act as the NEPA-Lead Agency and DOE would act as the Cooperating Agency was identified in DOE correspondence dated August 13, 2010. BIA is responsible for granting approval for the WIP modifications and for obtaining and/or issuing all applicable permits for the project. Based on the final EA, the BIA issued a Finding of No Significant Impact (FONSI) on July 17, 2012.

All discussion, analysis and findings related to the potential impacts of construction, operation and decommissioning of the Drop 4 Hydropower Project, including applicant-committed measures, are documented in the final EA which is hereby incorporated by reference. YN must

DOE/EA-1933  
Finding of No Significant Impacts  
Page 1 of 7





follow all applicant-committed mitigation measures and best management practices contained in the final EA.

DOE prepared this FONSI in accordance with the *National Environmental Policy Act* (42 U.S.C. 4321 *et seq.*; NEPA), the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500 to 1508), and DOE's NEPA implementing procedures (10 CFR Part 1021).

**DROP 4 HYDROPOWER PROJECT DESCRIPTION:** The proposed project is located approximately two miles southwest of Harrah, Washington on the YN Reservation, near the intersection of the Harrah Drain Road and McDonald Road. At this location, the irrigation canal undergoes a 20-foot elevation drop (Drop 4). Drop 4 is where the inline turbine would be installed, due to the existing hydropower potential from the drop.

The project would include:

- Design, construction and installation of an inline turbine at Drop 4 and power generator house;
- Design and construction of an electrical substation;
- Installation of four to six power poles and approximately one-quarter mile of overhead transmission line extending from the generator house to Harrah Drain Road;
- A downstream water diversion structure;
- Completion of a Federal Energy Regulatory Commission (FERC) application for an exemption; and
- A Power Purchase Agreement with a local utility.

The proposed project incorporates Yakama Nation required mitigation measures and best management practices. The proposed project does not interfere with the primary purpose of the WIP, which is to supply irrigation to the YN.

The project will be constructed within the existing WIP right-of-way. Temporary construction easements on adjacent private property may be required for construction staging and materials laydown area. Upon project completion, the Drop 4 hydroelectric system would be owned and operated by YN. The inline turbine and other infrastructure are expected to have a life of at least 50 years.

**ENVIRONMENTAL IMPACTS:** The final EA examined the potential environmental impacts of implementing the Drop 4 Hydropower Project as well as the impacts of not implementing the project (the No-Action Alternative). Under the No-Action Alternative, DOE would not authorize the use of federal funds for the development activities of the Drop 4 Hydropower Project (final design, construction, and installation of an inline turbine at Drop 4 with a supporting powerhouse, electrical substation, overhead transmission lines, and WIP modifications), which DOE assumes for purposes of the EA, would not proceed without federal funding. This assumption allows a comparison between the potential impacts of the project as proposed and the impacts of not proceeding with the project.

No prime farmlands, floodplains, wetlands, or rivers included in the National Wild and Scenic Rivers Systems, or unique sensitive areas (Coastal Zones, Sole Source Aquifers, Hazardous



facilities or operations) have been identified in the proposed project area. Therefore, no impact to such areas would result from the proposed project.

The final EA analyzed geology and soils, air quality and climate, hazardous materials, noise control, public services and utilities, visual resources, safety and security, environmental justice, design considerations, resource use patterns, and cumulative impacts of the Project. DOE has determined that for all these resource areas there would be no impacts or that the impacts would be negligible. Intentional destructive acts are also not anticipated because the project would not involve the transportation storage, or use of radioactive, explosive, or toxic materials; the project location is not near any national defense infrastructure or in the immediate vicinity of a major inland port, container terminal, or nuclear power plant; and the proposed project would not offer any targets of opportunity for terrorists or saboteurs to inflict adverse impacts to human life, health, or safety.

The EA evaluated the cumulative impacts of the proposed project and other past, present, and reasonably foreseeable projects in the area, and DOE concluded that the project, in conjunction with other activities considered, would have no or minimal cumulative impacts on the environmental resources considered. The construction and operation of the project would have the greatest potential for impacts on water resources, biological resources, invasive and noxious species, socioeconomics, cultural resources and construction implementation. The analyses associated with these resource areas are discussed in more detail below. A complete analysis of all potential environmental impacts is presented in the EA.

#### *Water Resources*

The Main Canal of the WIP is utilized for irrigation purposes. The inline turbine design is such that there is no direct contact between irrigation water and any hazardous materials including fluids used during maintenance of mechanical equipment. The EPA Clean Water Act Section 401 permit review and application have been incorporated into the proposed project. Additionally, a Storm-water Pollution Prevention Plan will be prepared to mitigate erosion and water pollutants from construction and facility maintenance activities.

As a result of the proposed project, the flow in a portion of the Harrah Drain may be reduced from approximately 150 cubic feet per second (cfs) to 100 cfs, a reduction of approximately 33%. Concurrently, the flow in the Main Canal may increase from approximately 431 cfs to 481 cfs, or 10.4%. The approximately 50 cfs of water retained in the Main Canal would be diverted back into Harrah Drain south of Drop 4.

There is no water quality parameter data available for the Main Canal near the vicinity of Drop 4. A downstream receiving water location was rated "Poor" for temperature/dissolved oxygen in a 2001 Washington State Conservation Commission report. Given that no irrigation flow is directed into Harrah Drain in the non-irrigation season, the flow changes described during the irrigation season would likely pose no significant change to the composition of downstream constituents.



### *Biological Resources*

The land use near the proposed project vicinity is agriculture or rural residential and is not a primary source of wildlife habitat. The proposed project would install four to six power poles and transmission wires to connect the transformers within the substation to the existing 34.5 kV line present at Harrah Drain Road. For this project, poles have been designed according to the U.S. Fish and Wildlife Service Avian Protection Plan Guidelines to further avoid or reduce threats to raptors in the area. Given the short distance (approximately 1,700 ft.) of new transmission line, installation of the new transmission line is not anticipated to present a significant direct or indirect effect.

The U.S. Fish and Wildlife Service Central Washington Field Office has identified five endangered or threatened species in Yakima County, Washington and critical habitat for the bull trout and for the Northern spotted owl. The listed species are: bull trout, gray wolf, grizzly bear, marbled murrelet, and the Northern spotted owl.

Bull trout are a cold-water fish of relatively pristine stream and lake habitats in western North America. The project area does not contain any habitat for this species.

The gray wolf is unlikely to occur within the project area. Of the five confirmed wolf packs in Washington state, the nearest is in Kittitas County, approximately 60 miles to the north. The project would not affect any habitat for any known wolf packs.

The grizzly bear is unlikely to occur within the project area. The grizzly bear is a wide ranging mammal that uses large expanses of remote forest and meadow habitats and is extremely unlikely to reside in populated rural and farming areas such as the location of the proposed project.

Marbled murrelets are sea birds that nest in the trees of old growth forests. The project area does not contain any habitat for this species. In addition, the project area does not contain spotted owl habitat and is outside of any forested stands.

The Yakama Nation Fisheries Resource Management (YNFRM) and Yakama Nation Wildlife Resource Management Program (YNWRMP) were consulted for this project. Both the YNFRM and YNWRMP concurred there would be no effect on federally listed threatened and endangered species. In addition, DOE conducted Endangered Species Act Section 7 informal consultation with the U.S. Fish and Wildlife Service (USFWS) on August 21, 2012 and USFWS responded on August 27, 2012, that they concur with the no effect determination for the listed species under their purview.

The National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) is required by the Endangered Species Act to assess whether federal actions will jeopardize the continued existence of certain listed fish species. DOE conducted informal consultation with NMFS on October 9, 2012 and NMFS concurred with the determination that



the proposed project is not likely to adversely affect Endangered Species Act-listed salmon and steelhead because the proposed project does not occur in fish bearing water; the Main Canal is screened at the point of diversion to prevent fish from ever entering the canal; and the project would not have any effect on withdrawals or returns to the mainstem Yakima River or any waterbody that supports Mid-Columbia River steelhead.

#### *Socioeconomics*

The proposed project would have a small direct, beneficial impact to the local economy, especially during the construction period. Since the proposed project would benefit the local economy, including local low-income and minority populations on the reservation, the proposed project would not have disproportionate adverse effects on these groups of people.

The proposed project would generate funds for YN, which would be used for improvement projects on tribal lands. Tribal members would receive indirect beneficial impacts from the project as a result of the additional revenue. The tribal members would also be given employment preference for the construction, operation, and maintenance of the proposed project.

As a result of the project, approximately three design and inspection positions and approximately 20 positions spanning eight separate trades will be created during the estimated eight- to nine-month construction project. At the conclusion of the project, one full time equivalent and one part time equivalent employment position will be available. This increase in temporary and long-term employment positions represents potential employment benefits which could result from the proposed project.

#### *Cultural Resources*

The Tribal Historic Preservation Officer (THPO) has assumed the functions of the State Historic Preservation Officer within the boundaries of the Yakama Reservation. The THPO reviewed the proposed project in conjunction with several archeological and cultural resources surveys that have been completed. The surveys indicate that no cultural, archaeological, or historical properties were identified in the proposed project area. The THPO recommended that the project move forward, provided that cultural monitoring occurs for ground disturbing activities in areas adjacent to Drop 4, which are not fill materials, and be notified of any changes as listed in Section 5.2 of the EA.

#### *Invasive Species and Noxious Weeds*

YN Vegetation and Invasive Plant Management has surveyed and controlled noxious weeds on the WIP. However, no invasive species or noxious weeds have been identified at Drop 4. Due to the multiple pathways to spread invasive species and noxious weeds, U.S. Fish and Wildlife Service best management practices to control noxious weeds and invasive species will be implemented as part of the proposed project, as listed in Section 5.4 of the EA.

#### *Construction Implementation*

Final construction plans will be submitted to the BIA for review and permit issuance prior to construction. Construction that impacts the canal banks will be sequenced, during the non-irrigation season (November through March), to avoid impacts to the irrigation season.

The temporary construction staging and materials laydown area is located on private land adjacent to Drop 4. The primary access road to the Drop 4 site is shared with the adjacent landowner. During construction there will be a temporary increase in traffic on the shared access road. A gate would be installed, near the base of the landowner's driveway to prevent construction traffic from entering his residence. The gate will additionally provide a visible barrier between the work site and his residence, as requested by the landowner.

Temporary noise increases will occur during construction activities. The construction noise level is anticipated to be equivalent to the existing agriculture activities in the area. However, construction activities will be limited to daylight hours to minimize potential noise impacts to the adjacent landowner.

**DETERMINATION:** Based on the final EA, DOE determines that providing federal funding to install an inline turbine on the WIP Main Canal to generate one megawatt of hydroelectric power, including final design, construction, and installation of an inline turbine at Drop 4 and a power generating house, electrical substation, overhead transmission lines, and a downstream water diversion structure, would not constitute a major federal action significantly affecting the quality of the human environment within the context of NEPA. Therefore, the preparation of an Environmental Impact Statement is not required, and DOE is issuing this FONSI.

The final EA is available at the DOE Golden Field Office Reading Room website:

[http://www.eere.energy.gov/golden/Reading\\_Room.aspx](http://www.eere.energy.gov/golden/Reading_Room.aspx)

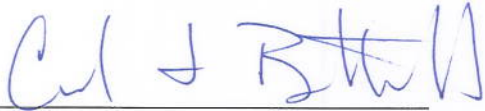
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Issued in Golden, Colorado this 16<sup>th</sup> day of November, 2012

A handwritten signature in blue ink, appearing to read "Carol J. Battershell". The signature is written in a cursive style and is positioned above a horizontal line.

Carol J. Battershell  
Golden Field Office Manager