



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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Reply To: 7455.015
File Name: Bowman Dam OID
TS Number: 19-360
TAILS: 13420-2010-CPA-0164

June 3, 2019

Mr. Bruce Scanlon
Ochoco Irrigation District
1001 NW Deer St.
Prineville, Oregon 97754

Re: Ochoco Irrigation District's Bowman Dam Preliminary Application Document, Federal Energy Regulatory Commission No. 14791


Dear Mr. Scanlon:

The U.S. Fish and Wildlife Service (Service) has reviewed the Ochoco Irrigation District's (OID) November 1, 2018, Preliminary Application Document (PAD) for the Proposed Bowman Dam Hydroelectric Project (Project), Federal Energy Regulatory Commission (Commission) No. 14791. The proposed Project would be located at the Bureau of Reclamation's (BOR) existing Bowman Dam, and will require construction of a penstock system, powerhouse, access, and transmission facilities. As noted at your April 2, 2019, public meeting and site visit, comments regarding your PAD are due on June 3, 2019. The Service has reviewed the PAD and has the following general comments, specific comments, and study requests.

General Comments

The Service is responsible for administering several laws related to Commission licensing of hydropower Projects, including the Endangered Species Act (ESA) and Federal Power Act (FPA). These laws define the Service's role and responsibility for protecting the Nation's fish and wildlife resources. The specific mission of the Service is to work with others to conserve, protect, and enhance fish, wildlife, plants, and their habitats for the ongoing benefit of the American people.

Endangered Species Act Consultation: Section 7 of the ESA and its implementing regulations at 50 CFR 402.14 require Federal agencies to review their actions at the earliest possible time to determine whether any action may affect listed species or critical habitat. If such a determination is made, consultation with the Service or National Marine Fisheries Service (NMFS), as appropriate, is required.

The Service recommends that you continue to involve the Service and other resource agencies in your fish and wildlife planning and studies. This will ensure that all comments and concerns are fully reflected in your draft license application. We recommend that you initiate informal ESA consultation with the Service early in the process of developing and refining your Project proposal. Under the ESA's implementing regulations at 50 CFR 402.08, the Commission may designate the Project applicant as its non-Federal representative to conduct informal consultation or prepare a biological assessment. The OID has requested and received this designation from the Commission. In order to ensure that the ESA process moves forward in coordination with the Commission's license proceeding, informal consultation should begin as early as possible. If a biological assessment is required and is prepared by the OID as designated non-Federal representative, the Commission must furnish guidance and supervision, and must independently review and evaluate the scope and contents of the biological assessment. The ultimate responsibility for compliance with ESA section 7 remains with the Commission.

Upstream and Downstream Fish Passage: The PAD does not discuss possible passage facilities or Project fish screens. The Service is not recommending passage or screens at this time. We will determine what, if any, terms and conditions to recommend based on information from the proposed studies, other existing information, and other resource management actions that occur in the Project area, including federal and state management plans.

Specific Comments

Section 1.3 Statutory and Regulatory Requirements: Please add the Wild and Scenic Rivers Act to this list of federal laws.

Section 2.0 Project Description: This states that the Project will require construction of a penstock system, powerhouse with a one and two megawatt Francis turbine, access, and transmission facilities. The turbine will have a hydraulic capacity of 400 cubic-feet-per-second (cfs) and operate as a run-of-river facility. The PAD notes that the Project may expand to include additional generation facilities.

Service Recommendation: We recommend that OID determine the full extent of likely power generation facilities and include them in this license application. Similarly, we recommend that OID assess all possible operational and environmental effects associated with the full extent of possible future power generation facilities. This approach should reduce the need for future amendments to the proposed license, if it is issued. It will also reduce the need for ESA consultation on any future license amendments.

Section 2.3.1 Access: This states that the Project will be accessed using the existing unmaintained road on the south side of the dam, pending the results of the proposed geotechnical evaluation.

Service Recommendation: The Service recommends that OID assess the road's viability as soon as possible, since if the road cannot be used it is possible that access will require constructing a new bridge across the Crooked River from the north side of the river downstream of Bowman Dam.

Section 2.3.6 Transmission Line: Approximately 1.5 miles of existing powerline may need new conductors as part of the Project.

Service Recommendation: The Service recommends that existing or new powerlines be evaluated for avian safety and electrocution hazard. We also recommend that you survey for nesting raptors before beginning construction, and consult with the Service and BLM regarding buffer distances for raptors that could be affected by Project construction and operation

Section 2.4 Proposed Mode of Operation: This states that the Project will be remotely operated using a SCADA control system. The system will divert powerhouse flow to the spillway in the case of an emergency shutdown, which should ensure that instream flow and ramping rate requirements are met at all times.

Service Recommendation: The Service recommends that OID also assess the proposed Project's ability to maintain uninterrupted and consistent flow releases during Project construction and maintenance, as well as during Project startup, operation, and shutdown.

Section 3.2.2.1 Water Quantity: Under hydrology, this section states that the Deschutes Habitat Conservation Plan recommends winter flows as low as 55 cfs. This is slightly in error, as proposed winter low flows are actually 50 cfs.

Section 3.2.3.2 Project Effects: This notes that the Project will be designed to reduce Total Dissolved Gas (TDG) levels associated with Bowman Dam flow releases. The Service appreciates OID's efforts to reduce TDG levels. The amount of TDG reduction will be determined during upcoming Project design.

Service Recommendation: Consistent with our comments on Section 2.0, the Service recommends that Project design include all likely Project power generation facilities, since this will also affect the Service's environmental evaluation regarding emigrant survival, water quality parameters such as TDG, and the need for a tailrace barrier. We also recommend that you assess the Project's possible effects to dissolved oxygen levels.

Section 3.2.4 Fishery Resources: This section notes that Prineville Reservoir drawdown can result in high emigration rates of reservoir fish species. These include hatchery rainbow trout,

largemouth bass, smallmouth bass, brown bullhead, and black crappie.

Service Recommendation: Overall survival of fish emigrating from Prineville Reservoir may increase if fish passing through the hydro facility have higher survival than fish passing through the BOR's existing release structure. While this is desirable for native fish species, it is not desirable regarding non-native species. The Service recommends that OID assess the potential for the proposed hydropower facility to increase survival of non-native fish species emigrating from Prineville Reservoir, and the effects this may have to the Crooked River's native fish populations downstream of Bowman Dam.

- Please include bull trout in the list of fish historically present in the Crooked River downstream of Bowman Dam.

On page 59 in this section, your document notes that spring chinook and steelhead are being released in the thirteen-mile-long section of the Crooked River extending from Bowman Dam to OID's main irrigation diversion. It also states that the primary management strategy in this section of the river focuses on redband trout, and that there are no key segments for spawning chinook or steelhead.

Service Recommendation: Please specify what agency's management strategy you are referring to regarding key segments for chinook and steelhead spawning.

Your document notes that the Service has designated part of the Crooked River as critical habitat for the bull trout. Also, that bull trout are currently not present upstream of the Opal Springs Dam and hydro facility at river mile 0.6 of the Crooked due the dam's lack of upstream fish passage facilities. As you know, a fish ladder is presently under construction at the Opal Springs Dam, and should be completed and operational by late 2019. Your document describes bull trout use of the ladder for upstream passage as a possibility. However, several years of data from the Opal Springs Dam upstream migrant trap shows that approximately fifty to sixty bull trout are captured in the trap each year as they attempt to move upstream. Thus, it is highly probable that bull trout will use the ladder for upstream passage and recolonize their historic habitats in the Crooked River and its tributaries. Your document also states that bull trout are not expected to use the thirteen-mile-long section of the Crooked River from Bowman Dam to OID's diversion. The Service does not agree with this assertion.

Service Recommendation: The Service recommends that your ESA and environmental evaluation consider bull trout use of the Opal Springs Dam fish ladder as very likely to occur, that bull trout will eventually move upstream to Bowman Dam, and that they will then be present at all times of year downstream of the proposed Project.

- We noted that under the section regarding steelhead trout your document incorrectly states that the steelhead 10(j) designation expires in 2013. Please correct this to state that the 10(j) expires in 2025.

Section 3.2.6 Wildlife Resources: The PAD notes that ospreys, hawks, falcons, and bald eagles may be present in the Project area. This section notes that while bald eagles are no longer listed under the ESA they are still protected under the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. It also states that Project powerlines will comply with current avian protection guidelines.

Service Recommendation: The Service recommends that you also apply these avian protection standards to existing powerlines that need new conductors as part of this Project.

Section 3.2.7.2 Project Effects: This section states that bull trout are more than 63 miles downstream of the proposed Project. Based on this and the Project's anticipated lack of effect to flows releases from Bowman Dam, it suggests there will be no negative impacts to bull trout. However, as we noted in our comments on Section 3.2.4 of your document, upstream fish passage facilities at the Opal Springs Hydro Project will begin operating in the Fall of 2019. We anticipate that bull trout will move upstream using the fish ladder and re-colonize their historic habitat in the Crooked River downstream of Bowman Dam.

- The PAD states that it is unlikely that gray wolves will be present in the Project area.

Service Recommendation: The OID has requested and received designation from the Commission as their nonfederal representative for informal ESA consultation. The Service and OID should discuss possible effects to ESA species, including bull trout, at the OID's earliest convenience.

Section 3.2.10 Historical and Archaeological Resources: The PAD notes that there have been previous archaeological surveys in the Prineville Reservoir and Crooked River. Since it is not clear whether these surveys included the proposed Project area, the OID proposes to do a records search and to consult with the Confederated Tribes of the Warm Springs.

USFWS Study Requests

Based on our review of the Applicant's PAD the Service has the following four study requests.

1. Instream flow continuity and ramping rates (PAD Section 2.4)

1.1 Project Nexus and Study Description

It is the Service's understanding that as part of the proposed Project releases from Bowman Dam will be automated and integrated into the Project. As flow releases are adjusted between the modified Bowman Dam release and the Project hydro facility, it is important that flows do not exceed standard ramping rate requirements. We request that the Applicant conduct an engineering and operations study that verifies the Project's ability to maintain instream flows downstream of Bowman Dam.

1.2 Resource Issues / Goals and Objectives

Flow variations downstream of the dam could result in stranding of steelhead, spring chinook, redband, and other natives fish species' fry and juveniles, and possibly dewater these species' redds. It could also affect important rearing habitat along stream margins for these species. Our goal is to insure that the Project does not have these adverse effects and meets ramping rate and instream flow objectives.

1.3 Justification of Recommended Study Methodology

Since the Project has not been constructed and thus cannot be operationally tested, an engineering study will be needed.

1.4 Study Need for USFWS Resource Goals

Our overall goal is to conserve, protect, and enhance the Crooked River's existing cold-water fish species. The Service's goal for reintroduced steelhead and spring chinook is to achieve self-sustaining and harvestable populations. Our goal for bull trout is to implement pertinent elements of the Service's Bull Trout Recovery Plan.

2. Increased survival of non-native fish species emigrating from Prineville Reservoir (PAD Section 3.2.4)

2.1 Project Nexus and Study Description

The PAD's Section 3.2.4 notes that Prineville Reservoir drawdown can result in high emigration rates of reservoir fish species. These include hatchery rainbow trout, largemouth bass, smallmouth bass, brown bullhead, and black crappie. The proposed Project release structure and hydropower facility may increase the number of these fish that survive passage from the Prineville Reservoir and enter the Crooked River.

2.2 Resource Issues / Goals and Objectives

The Crooked River supports important cold-water fish species such as redband trout, steelhead, spring chinook salmon, and bull trout. Increasing the number of non-native fish in the Crooked River could adversely affect these species. Our goal is to conserve, protect, and enhance the Crooked River's cold-water fish species. We request that the OID assess fish passage survival from the existing Bowman Dam release facility and from the proposed modified release facility / hydropower Project. This study should use data from a range of reservoir elevations, flow releases, and the full range of possible hydropower facility installed capacities. This study may be conducted using both desktop evaluations and field data collected using screwtraps or other suitable methodology downstream of Bowman Dam.

2.3 Justification of Recommended Study Methodology

Information exists on emigration from Prineville Reservoir, fish passage survival from structures similar to the one at Bowman Dam, and from hydropower facilities similar to turbine proposed by the OID. However, this existing information may need additional site-specific data collected using screwtraps or other suitable methodology.

2.4 Study Need for USFWS Resource Goals

Our overall goal is to conserve, protect, and enhance the Crooked River's cold-water fish species. The Service's goal for reintroduced steelhead and spring chinook is to achieve self-sustaining and harvestable populations. Our goal for bull trout is to implement pertinent elements of the Service's Bull Trout Recovery Plan.

3) Tailrace barrier (PAD Section 2.0 Project Description)

3.1 Project Nexus and Study Description

The proposed Project design does not include a tailrace barrier to prevent adult steelhead, spring chinook, bull trout, redband trout, or other species from entering the Project tailrace. We request that the Applicant conduct a desktop evaluation of possible injury and mortality to adult salmonids that may attempt to move up through the Project tailrace and encounter the Project turbine. This study should use data from the full range of possible hydropower flow releases, possible hydropower facility installed capacities, fish species, and swimming speeds.

3.2 Resource Issues / Goals and Objectives

Adult steelhead, spring chinook, and redband trout are already present in the Crooked River downstream of Bowman Dam. We also expect that adult bull trout will move upstream using the newly constructed Opal Springs Hydro Project fish ladder. These species may have burst speed sufficient to move up through the Project tailrace and encounter the Project turbine. Our goal is to avoid any injury or mortality to fish that could attempt to move upstream through the Project tailrace.

3.3 Justification of Recommended Study Methodology

Since the Project has not been constructed and thus cannot be operationally tested, an engineering study will be needed.

3.4 Study Need for USFWS Resource Goals

Our overall goal is to conserve, protect, and enhance the Crooked River's cold-water fish species. The Service's goal for reintroduced steelhead and spring chinook is to achieve self-sustaining and harvestable populations. Our goal for bull trout is to implement pertinent elements of the Service's Bull Trout Recovery Plan.

4) Total Dissolved Gas (PAD Section 3.2.3.2 Project Effects)

4.1 Project Nexus and Study Description

Flow releases from Bowman Dam can result in high levels of TDG in the Crooked River downstream of the dam. The PAD states that the Project will be designed to reduce TDG levels associated with Bowman Dam flow releases. The amount of TDG reduction will be determined during upcoming Project design. We request that the Applicant conduct a desktop evaluation of the proposed Project's effects to TDG from the proposed modified

release facility and hydropower Project. This study should use data from a range of flow releases from both the proposed modified release facility, possible hydropower flow releases, possible hydropower facility installed capacities, and affected fish species.

4.2 Resource Issues / Goals and Objectives

Previous Crooked River studies have established that Bowman Dam flow releases can cause elevated levels of TDG and cause injury or mortality to salmonids. The Service's goal is to reduce TDG levels downstream of the dam as much as possible, consistent with the OID's requirements for Project design and operation.

4.3 Justification of Recommended Study Methodology

Since the Project has not been constructed and thus cannot be operationally tested, an engineering study will be needed.

4.4 Study Need for USFWS Resource Goals

Our overall goal is to conserve, protect, and enhance the Crooked River's cold-water fish species. The Service's goal for reintroduced steelhead and spring chinook is to achieve self-sustaining and harvestable populations. Our goal for bull trout is to implement pertinent elements of the Service's Bull Trout Recovery Plan.

Conclusion

The Service appreciates your efforts to inform the Service and other resource agencies regarding the proposed Project and to begin making progress on various studies. We anticipate that you will further develop your study proposals and other Project details in consultation with the Service and other parties. We look forward to working with you to further develop the Bowman Hydro Project proposal and to begin informal ESA consultation. If you have any questions or comments regarding this letter, please contact me or Peter Lickwar at (541) 383-7146.

Sincerely,



Bridget Moran
Bend Field Supervisor

CC: FERC, Washington, D.C.
Ted Wise, ODFW, Bend, OR
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Document Content(s)

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