

STUDY NO. 5: EVALUATION OF FISH PASSAGE OPTIONS

5.1 Goals and Objectives - §5.9(b)(1) — Describe the goals and objectives of each study proposal and the information to be obtained

ODFW Proposal:

This study would be designed to exam of options to meet the stated goal of “utilizing habitat above Bowman Dam to support reintroduced populations of steelhead trout and spring Chinook salmon.” The evaluation of installation and operation of fish passage facilities at Bowman Dam is necessary as part of OID’s proposed Bowman dam hydroelectric Project. This study would identify the various options available for providing fish passage at Bowman Dam, including evaluating at a preliminary level the technical, financial, biological, and operational implications of each option. Engineering plans should be developed to safely accommodate fish passage both upstream and downstream at variable discharge flows and reservoir levels. Criteria used in designing passage facilities should be in compliance with specifications outlined by the National Marine Fisheries Service for streams inhabited by anadromous fish.

Anadromous fish access to the upper Crooked River and its tributaries has been blocked since construction of the Pelton-Round Butte Dam complex in 1958-1964 and Bowman Dam in 1961. The upper basin above Bowman dam currently supports native redband trout, and is has the capacity of supporting reintroduced anadromous salmonid fishes as well. Ongoing efforts to re-establish steelhead trout and spring Chinook salmon above the Pelton Round Butte Project combined with the providing of fish passage at the Opal Springs Hydroelectric Project (as of August of 2019) and other barriers on the mainstem Crooked River below Bowman Dam give both species access to Crooked River upstream as far as Bowman Dam. Fish passage at the dam could extend the ranges of both species into the upper Crooked River watershed.

OID Response:

OID will be submitting an application for a waiver of the requirement to install fish passage at Bowman Dam. A general description of fish passage options at Bowman Dam will be included in the waiver application, however, detailed plans will not be included because the applicant is not considering the addition of fish passage at the dam. The cost of installing fish passage at the dam would be prohibitive and efforts to license the project would not go forward if a waiver were denied.

OID will propose mitigation measures as an alternative to providing fish passage at the dam as part of the application for fish passage waiver.

5.2 Relevant Resources Management Goals - §5.9(b)(2) — If applicable, explain the relevant resource management goals of the agencies or Indian tribes with jurisdiction over the resource to be studied.

ODFW Proposal:

ODFW’s Crooked River Basin Plan identifies reconnecting isolated and fragmented populations of redband trout by restoring and improving passage over manmade barriers as a goal (OAR 635-500-1850c). Prior to the construction of Bowman Dam, the upper Crooked River was inhabited by anadromous mid-Columbia spring Chinook Salmon (*Onchorynchus tshawytscha*) and summer steelhead (*Onchorynchus mykiss irideus*). These species persisted in the lower Crooked River until the construction of the Pelton-Round Butte Dam complex in 1958-1964. Through relicensing of this

FERC project, the joint applicants are proposing the reintroduction of both chinook and steelhead into the Crooked River subbasin. The Basin Plan further states the goal of restoring anadromous and migratory resident migratory fish to their historic range in the Crooked River basin by improving upstream and downstream passage over artificial barriers OAR 635-500-1850b. The Basin Plan also directs evaluating passage over Ochoco and Bowman dams, if passage is restored successfully over Pelton, Round Butte and Opal Springs hydroelectric dams.

OID Response:

The only options available to OID are to construct and operate the Bowman Dam Hydroelectric Project with mitigation such as reduction of total dissolved gasses downstream of the dam or to not construct the project or provide for mitigation of total dissolved gasses. Design and construction of fish passage at Bowman Dam is not a feasible element of the hydroelectric project.

5.3 Background and Existing Information - §5.9(b)(4) — Describe existing information concerning the subject of the study proposal, and the need for additional information.

ODFW Proposal:

ODFW is not aware of any other information available pertaining to this study proposal other than comparable studies on other hydropower projects or potential passage projects. One example of a very similar study entitled “Evaluation of Fish Passage Options for Ochoco Dam” was completed in 2014 as part of the Upper Deschutes Basin Habitat Conservation Plan. (R2 Resource Consultant, Inc. and Biota Pacific Environmental Sciences, Inc. 2014).

OID Response:

The only options available to OID are to construct and operate the Bowman Dam Hydroelectric Project with mitigation such as reduction of total dissolved gasses downstream of the dam or to not construct the project and provide for mitigation of total dissolved gasses. Design and construction of fish passage at Bowman Dam is not a feasible element of the hydroelectric project.

5.4 Project Nexus - §5.9(b)(5) — Explain any nexus between project operations and effects (direct, indirect, and/or cumulative) on the resource to be studied, and how the study results would inform the development of license requirements.

ODFW Proposal:

The State of Oregon recognizes the importance of passage to the continued persistence and viability of migratory resident and anadromous fish species (ORS 498.351 and 509.605). It is the policy of the State to provide for upstream and downstream passage for native migratory fish. Fish passage is required in all waters of the state in which native migratory fish are currently or have been historically present. A person owning or operating an artificial obstruction may not construct or maintain any artificial obstruction across waters inhabited by native migratory fish (ORS509.585). This statute further directs ODFW to “direct its enforcement authority toward priority projects, emergencies and ‘triggers’”. In this case, the trigger is the conversion of an existing structure to include hydroelectric facilities (fundamental change in permit status). Given this mandate, the owner and or operator of the facility has three alternatives a) submit a proposal for fish passage to ODFW, b) apply to the Fish and Wildlife Commission for a waiver demonstrating alternatives to fish passage that provide a net benefit to native migratory fish or c) file for an exemption with the Commission under subsection 9 ORS 509.585.

The information resulting from this study can be used by the Applicant in respect to potential options and providing fish passage at Bowman dam and/or the option of applying to ODFW for a fish passage waiver. The information gathered from this study will ODFW to likewise assess the fish passage options for the proposed Project and help guide ODFW in advising and analyzing the merits of any proposed fish passage option that OID may pursued.

OID Response:

OID chooses the options of applying for a waiver or exemption based on the limited value of providing fish passage at Bowman Dam and the cost related to the design and construction of fish passage at Bowman Dam.

5.5 Proposed Methodology - §5.8(b)(6) — Explain how any proposed study methodology (including any preferred data collection and analysis techniques, or objectively quantified information, and a schedule including appropriate field seasons(s) and the duration) is consistent with generally accepted practice in the scientific community or, as appropriate, considers relevant tribal values and knowledge.

ODFW Proposal:

Engineering plans should be developed to safely accommodate fish passage both upstream and downstream at variable discharge flows and reservoir levels. Criteria used in designing passage facilities should be in compliance with specifications outlined by the National Marine Fisheries Service for streams inhabited by anadromous fish.

This study would provide a preliminary evaluation of the various options and implications of providing fish passage past Bowman Dam, the ability of these options to function within the established operational regime for Bowman Dam, and an initial planning level opinion of probable capital and operational cost for the alternatives. Technical considerations would be based on: 1) limited examination of Bowman Dam and the Crooked River channel, 2) information provided by OID and BOR, and 3) comparison with similar fish passage systems in the region.

This type of analysis is consistent with other fish protection analyses completed during licensing proceedings for hydroelectric projects that have the potential to adversely affect resident and anadromous salmonids and ESA-listed fish species.

OID Response:

OID chooses the options of applying for a waiver or exemption based on the limited value of providing fish passage at Bowman Dam and the cost related to the design and construction of fish passage at Bowman Dam.

5.6 Level of Cost and Effort - §5.9(b)(7) —Describe considerations of level of effort and cost, as applicable, and why any proposed alternative studies would not be sufficient to meet the stated

ODFW Proposal:

The evaluation of fish passage options at Arthur R Bowman Dam study analysis report preparation is estimated at \$30,000. Two analysts would be expected to work for approximately 10-12 days on the analysis. Additionally, two analysts would be expected to work for approximately 7 – 14 days on the field investigations and two analysts would be expected to work for approximately two days incorporating agency comments into the final report.

The evaluation of anadromous fish habitat above Bowman Dam study would be completed during the 2020 study season with the draft report available for comment by the federal agencies and ODFW prior to December 31, 2020.

OID Response:

The installation and operation of fish passage at Bowman Dam is not currently economically feasible. As a result, OID will apply for a fish passage waiver, which will include proposed mitigation, as well as an evaluation of fish passage options.