

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

### 1.1 Project Nexus and Study Description

#### FWS Statement:

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.

#### OID Response:

*It should be noted that this study proposal is essentially the same as the ODFW proposed study "Study No. 7: Ramping and Flow Fluctuations Evaluation".*

*The Bowman Dam Hydroelectric Project is not what would normally be considered a typical hydroelectric project since operations would not regulate flow releases from Prineville Reservoir and would operate strictly run-of-release from Prineville Reservoir. The U.S. Bureau of Reclamation regulates how and when water is released and the project would not affect the flow downstream of Bowman Dam.*

*Water releases from Bowman Dam are made for the purpose of meeting the requirements of downstream water contracts and water rights. The project would not have control over these releases but would utilize a portion of the flow to generate power. Once water passes through the powerhouse it would combine with the remaining flow released from the dam. The result is that flow in the Crooked River downstream of the dam would always be equal to the amount of water released to meet the downstream needs. The amounts of water to be released to meet the contractual requirements are defined in the Crooked River Collaborative Water Security and Jobs Act of 2014, including an allocation of water for the benefit of fish and wildlife resources. The timing and rate of release of the water allocated for the benefit of fish and wildlife is the subject of ongoing negotiations.*

*Project design would include provisions to insure continuous flow from the dam. In the event of a powerhouse outage, flow releases would automatically shift from the powerhouse to the flow release system of the dam. The resulting flow would always be equal to the release from the dam.*

### 1.2 Resource Issues/Goals and Objectives

#### FWS Statement:

Flow variations downstream of the dam could result in stranding of steelhead, spring chinook salmon, redband, and other native 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.

OID Response:

*As stated above the project would not control the flow releases made from the dam to meet the requirements of downstream water contracts and water rights. The project would not operate as a peaking or load following system, only as run-of-release.*

1.3 Justification of Recommended Study Methodology

FWS Statement:

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

OID Response:

*OID will design the project so that it will not alter or regulate flow releases from the dam and so that the rate of release will remain in the control of the dam operations.*

1.4 Study Need for USFWS Resource Goals

FWS Statement:

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.

OID Response:

*OID understands and supports the Service's goal for reintroduction of steelhead and chinook as well as its goal regarding bull trout.*