Study No. 2: Increased Survival of non-native fish species emigrating from Prineville Reservoir (PAD Section 3.2.4)

2.1 Project Nexus and Study Description

FWS Proposal:

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.

OID Response:

This study proposal is similar to ODFW Study No. 2: Prineville Reservoir Fish Entrainment Study.

At present releases from the dam are made by way of a pressure gate and emerge from the dam near the bottom of the spillway. The rate of survival of fish passing from the dam to the Crooked River below is currently unknown. Redesign of the outlet facilities and installation of an energy dissipating valve is expected to reduce survival due to the extreme pressure gradient between upstream and downstream of the valve. Survival of fish passing through the turbines is also likely to be low also due to the extreme pressure gradient but also due to the small size of the turbines.

2.2 Resource Issues/Goals and Objectives

FWS Proposal:

The Crooked River supports important cold-water fish species such as redband trout, steelhead, spring chinook, and bull trout. Increasing the number of non-native fish in the Crooked River could adversely affect these 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 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.

OID Response:

OID understands the goals and objectives of the USFWS and will work with them and ODFW to insure the project would not result in increased passage survival.

2.3 Justification of Recommended Study Methodology

FWS Proposal:

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

OID Response:

OID will perform a desk top evaluation regarding fish survival rates when passing through an energy dissipating valve and francis turbines of the size and flow capacities of the units that would be install for this project. The results will be included in the application for license.

2.4 Study Need for USFWS Resource Goals

FWS Proposal:

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.