Date: 7/20/2020

To: Greg Apke- Statewide Fish Passage Program Coordinator

From: Tim Porter– Deschutes Watershed Assistant District Fish Biologist

Subject: Newbill Water Right Fish Passage Exemption Net Benefit Analysis

Proposal and Project Overview
Mr. Kelly Bruun (project owner) is applying for fish passage exemption, as allowed under Oregon Administrative Rule 635-412-0025, for an existing earthen water diversion dam at approximately river mile 4.3 on Newbill Creek, a tributary of Willow Creek, a tributary of the Deschutes River (Figures 1 and 2), located in Jefferson County. The existing water storage dam is permitted by a reservoir storage right (R-13317) from the Oregon Water Resources Department (OWRD). The project owner was in the process of enlarging the reservoir under permit R-15048 and did not finish the enlargement work within the permitted timeframe and applied for a time extension with OWRD. OWRD determined the permit was deficient in addressing screening and passage. ODFW was contacted in December 2018, District fisheries staff inspected the site, and recommended Mr. Bruun proceed with a fish passage exemption application based on site conditions and potential historic presence of redband trout and bridgelip sucker.

Site Conditions
Newbill Creek is an intermittent stream that has been severely altered and degraded through anthropogenic impacts. These include stream channel alterations (straightening, berming, building dams) other physical instream obstructions and cattle grazing (Figures 3-5). Stream flow is usually only available in the Newbill Creek during spring runoff, as evidenced by site visits the lack of riparian vegetation along the channel (Figure 4). Approximately 2.25 miles of cumulative stream channels (including tributaries) exists in Newbill Creek above the existing dam. Habitat conditions in Newbill Creek in the project area and upstream of the fish passage exemption site is severely degraded and fragmented. Given the intermittent nature of the stream channel, the amount of usable instream fish habitat above this site was difficult to quantify from site visits by ODFW. Aerial photography was used in conjunction with site visits to quantify habitat extent upstream of the proposed exemption site. This information shows the stream channel is indiscernible in some locations and channel incision (headcuts) are present (Figure 6). Immediately upstream (2,175 feet) of the existing dam is another small water diversion dam that is a complete upstream fish passage barrier. In addition to this dam, several road culverts carrying Newbill Creek that are of unknown passage conditions exist (Figure 7).
Native Migratory Species
Historically, redband trout were present in Newbill Creek. ODFW fish distribution maps identify known native migratory fish presence stops approximately two miles downstream of the artificial obstruction in question. This upstream extent of fish distribution ends at a private property boundary which suggests fish surveys were not conducted above the boundary due to access issues. Based on ODFW evaluation of aerial photographs, there does not appear to be any reason redband trout would not have been present above the private property boundary. Currently, redband trout and bridgelip sucker are present in Willow Creek. These native migratory species still have seasonal access to the lower half mile of Newbill Creek below artificial obstructions when flows allow. Based on the current distribution of bridgelip sucker in Willow Creek, this species likely would have had historical access to Newbill Creek prior to construction of manmade artificial obstructions (fish passage barriers).

Net Benefit Analysis
Based on the intermittent nature of Newbill Creek, along with the severely degraded and fragmented habitat, it is the opinion of ODFW District Fisheries Staff that redband trout and bridgelip sucker would not be able to migrate to the artificial obstruction or occupy the stream above if passage were provided. If passage were provided by Mr. Buun, there would be no appreciable benefit to native migratory fish. In addition, Mr. Bruun has indicated that he is considering stocking the reservoir with hatchery rainbow trout and/or grass carp. Fish passage at the dam would allow these non-native fish to migrate downstream, negatively impacting native fish populations in Newbill and Willow Creeks.

Conclusion and Recommendation
ODFW staff recommends approval of the Fish Passage Exemption request by Mr. Buun. We recognize the fact that if conditions change in the future from which this decision is based the exemption, if granted, could be revoked and passage addressed at this dam.
Figure 1. Site map showing project location on Newbill Creek.

Figure 2. Overview of Newbill Creek showing confluence with Willow Creek, major obstruction at Ramms Road, the artificial obstruction (AO), and upstream barriers.
Figure 3. Downstream view of culverts at Ramms Road (situated downstream of proposed fish passage exemption.)
Figure 4. Newbill Creek upstream of Ramms Road culvert showing berming, straightening, poor instream habitat conditions, and lack of riparian vegetation.
Figure 5. Newbill Creek between Ramms Road and artificial obstruction showing evidence of channel realignment and straightening.
Figure 6. Evidence of channel straightening and head cut above the artificial obstruction.
Figure 7. Aerial view of existing artificial obstruction and proximity of upstream fish passage barriers.

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