

OFFICIAL COORDINATION REQUEST FOR NON-ROUTINE OPERATIONS AND MAINTENANCE

COORDINATION TITLE-16BON119 CI Count Station Crowder Install
COORDINATION DATE- 25 October 2016, updated on 23 November 2016
PROJECT- BON
RESPONSE DATE- 10 November 2016 (FPOM meeting)

Description of the problem-

The WA shore ladder will be going to orifice flow on 25 November as part of the previously coordinated early winter dewatering (see [16BON116](#)). As the WA Shore ladder is taken out of service for winter maintenance, the Cascades Island (CI) fishway exit will be opened to facilitate upstream passage through the CI fishway. With this action, fish counting will be moved from the WA shore Fish Viewing Building (FVB) to the CI count station, starting on 25 November. A crowder mechanism is necessary for fish counting, but the CI crowder was removed during the last winter maintenance to be rehabbed. Since the ladder is not coming down this winter as originally expected, it needs to be replaced prior to 25 November. The location where the crowder is to be installed is above the picket leads leading to the UMT (Figure 1). This area currently has no flow going through it but has ~4' of slack water covering it. The crowder installation is at ~1' above the fishway floor and cannot be done underwater; thus the water level at the crowder will have to be lowered so that the work can occur. The only way to lower the water in that area is manipulate fish valve (FV) 5-9 and water coming in via the upstream migrant channel (UMT).

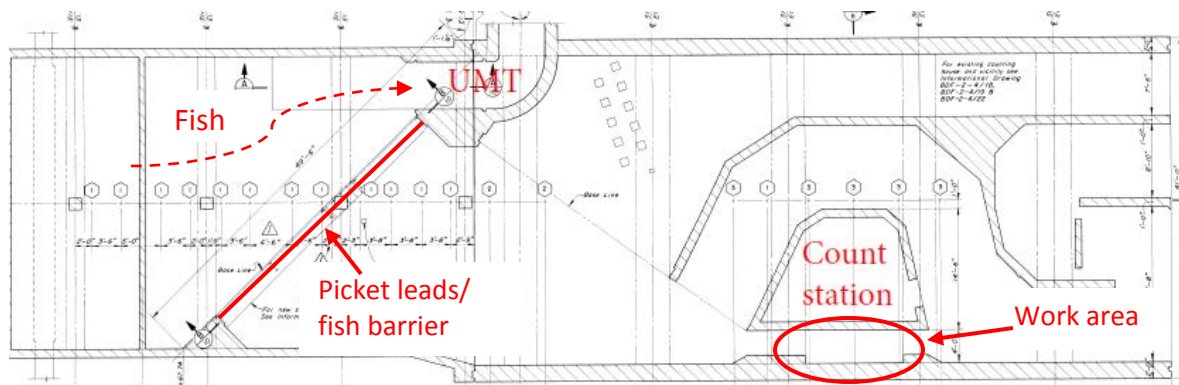


Figure 1. Cascades Island fish ladder section where crowder install (red circle) will occur.

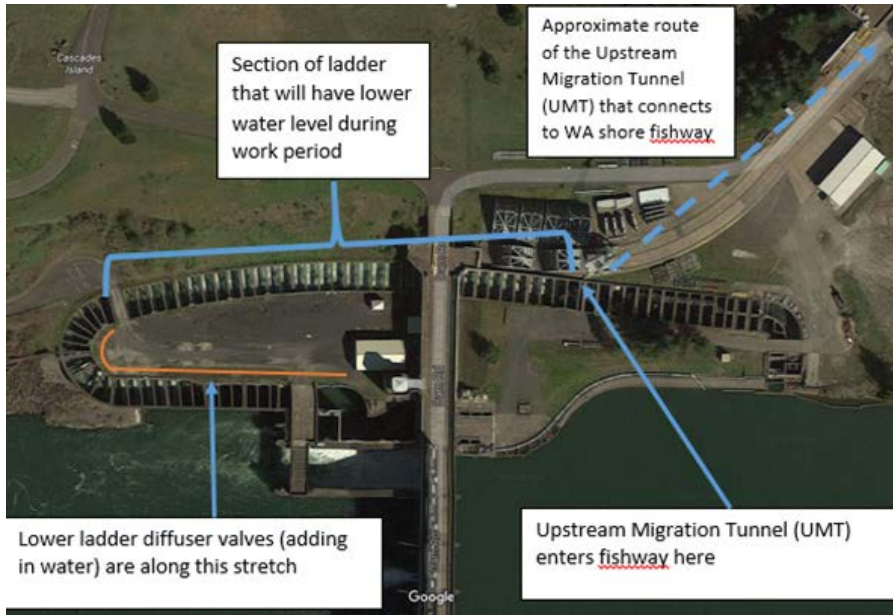


Figure 2. Overhead view of Cascades Island fish ladder.

The first step will be to reduce the water level as far as possible and immediately drop sandbags at both ends of the work space. This means closing both FV5-9 and the UMT for ~20 minutes. Once sandbags are in place, the UMT will be immediately opened, allowing a normal flow of water through the CI fishway before water can drop to a level that will push fish downstream. FV5-9 will stay closed for the duration of the crowder installation (4 days), and the sandbags will hold ~2' of water out of the work area until the work is finished. The Cascades Island exit will not be open during this time. Once work is completed, the UMT will again need to be briefly closed to remove the sandbags.

This is the order of necessary operations:

1. Close FV 5-9
2. Close south UMT bulkhead (~20 min)
3. Place sandbags immediately above and below the crowder
4. Open UMT bulkhead
5. Install crowder system (4 days)
6. Close south UMT bulkhead (~20 min)
7. Remove sandbags
8. Open FV 5-9

UPDATE:

Due to unexpected amounts of water in the crowder area with the UMT open, the UMT bulkhead was lowered from 15-17 November to install the crowder, and placed backwards to allow sufficient leakage to keep the ladder at orifice flow. During this time, fish valves 5-3 and 5-4, which supply attraction water to the lower ladder, were closed. There was no passage of fish from the Cascade Island ladder to the Washington Shore exit during this time.



Figures 3. Water level at Cascades Island with FV 5-9 closed and UMT open. This is the level originally anticipated during the work period.



Figure 4. Actual water level at Cascades Island during the work period (15-17 Nov.) with UMT bulkhead in place.



Figure 5. Overhead view of work area.

Type of outage required-
None

Impact on facility operation-

Fishway water levels will be reduced by approximately a half foot in the section downstream of the UMT and above the CI diffusers from 14 – 17 November. Levels will briefly drop further for ~20 minutes on 14 Nov and for 20 min on 17 Nov when the UMT bulkhead is placed.

Dates of impacts/repairs-
14 to 17 November 2016.

Length of time for repairs-
Four days or less.

Expected impacts on fish passage-

Fish will not be able to pass from the CI ladder into the UMT while sandbags are being placed, approximately 20 minutes each on 14 and 17 November. The Cascades Island exit will remain closed. After the UMT is reopened (for the rest of the work period) normal passage will resume. Water levels will be reduced from the UMT confluence pool down to the Cascades Island diffusers which may reduce fish passage efficiency for the four days of work. From the diffusers down to the entrance, the diffusers will be able to make up for the missing water, and the CI entrance differential will be held in criteria.

Table 1. Total daily salmonid passage averages for 10 year period from 2005-2015 at Bonneville Dam.

14-Nov	254
15-Nov	196
16-Nov	200

17-Nov

170

Comments from agencies

-----Original Message-----

From: Gary Fredricks - NOAA Federal [mailto:gary.fredricks@noaa.gov]

Sent: Thursday, November 03, 2016 9:09 AM

To: Kovalchuk, Erin H NWP <Erin.H.Kovalchuk@usace.army.mil>

Subject: [EXTERNAL] Re: FPOM: Official Coordination 16BON119 MOC CI crowder installation

Erin, Overall, I don't have any issues with conducting the proposed work as indicated, however, I think the MOC could be a bit clearer on what the impact will be to adults passing the CI ladder. For 20 minutes on 14 and 17 November, fish passage in the CI ladder will be interrupted (not everyone understands the function of the UMT or that the CI exit will still be closed). Also, for the four days of the work period, the head on many of the weirs in the CI ladder will be approximately one half foot, half of normal. This will reduce orifice flow and velocity and may reduce passage efficiency. We can discuss further at FPOM if necessary. Thanks, Gary

Final results – FPOM concurred with this action at the November FPOM

Post Action Evaluation – Due to the water leakage, the UMT was closed throughout the work. Any fish in the CI ladder below the UMT would have been delayed.

Please email or call with questions or concerns.

Thank you,

Erin

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