



# Upper Colorado River Endangered Fish Recovery Program

Dated: December 8, 2016

## November 28, 2016 Management Committee Webinar Summary

**Participants:** See Attachment 1

**CONVENE: 1:00 p.m.**

1. Green River Canal Company requests in conjunction with Fish Barrier Project - The Committee reviewed the list of features Green River Canal Company (GRCC) has requested as part of the Fish Barrier Project (see Attachment 2 for details, diagram, and photos).

**Brent described negotiations over the two decades with the Green River Canal Company regarding fish entrapment:** Many different possible projects and designs have been considered, but the Biology Committee has recently approved a weir wall, screen, and return channel configuration at the GRCC headgate. Bob Norman explained that the recent dam rebuild provided increased head and altered some of the conditions when compared to the older structure. Prior to the rebuild, we knew ~9” of head would be needed to operate an efficient facility, and it might be difficult to achieve without upstream modifications (e.g., at the 8-gate headgate structure and/or canal intake). With the rebuilt dam, more than enough head is available to run the fish screen without replacing the 8-gate structure or the canal intake. Head loss at the 8-gate structure has now been measured and found to only be ~2.5”, and only ~1” of head could be gained by its replacement. Therefore, even if they had not rebuilt the diversion dam rebuilding this structure would not have been considered. However, the 8-gate structure is in very poor condition at this point. Its purpose is to isolate the flow into the “raceway,” which delivers water to both the power plant and the Green River Canal. Under its current configuration, the gate is either open or closed (it is difficult to regulate the amount of flow). If the canal is operating and GRCC wants to close the gate, they have to complete a number of sequential operations, including shutting off the hydroplant and the diversion to the Green River Canal (including pumping plant and radial gate bypass), letting the raceway fill up with water to the river elevation, closing the gates with no pressure differential, and then draining the raceway. If they try to regulate the flow, they can get too much differential water flow and risk damage to the existing structure. The local water users had included repair/replacement of the 8-gate structure in the NRCS dam rehabilitation project, but took it out of that project because: 1) it seemed likely that replacing it would be part of the fish screen project; and 2) they couldn’t afford the 25% cost-share of replacing it after cost increases on the other parts of the project. When the 8-gate structure is closed it keeps debris from entering the raceway, which is a big benefit to the power plant and canal company. Bob Norman said the proposed fish barrier will have an isolation gate at the beginning of the canal which can manage debris without the 8-gate structure. Therefore, Reclamation engineers have concluded that replacing the 8-gate structure is no longer a required component of our proposed project.

GRCC has asked for other fish barrier design modifications, such as accommodating the full 80cfs water right (instead of only 60 cfs originally proposed) and an open channel conveyance back to the river to allow sluicing debris on the upstream side of the fish weir (instead of a 15cfs pipe for moving only fish). We have accepted those modifications and associated cost changes. The current estimate for the fish barrier project, with those modifications is \$2.2 million. However, GRCC also is asking us to include,

and fund, three additional components that cost ~\$2.4 million: 1) the 8-gate structure (\$2 million); 2) the Canal Siphon (\$165K); and 3) canal lining (\$200K). GRCC asked Reclamation staff to ask the Recovery Program to fund all three of these components (total additional cost ~\$2.4 million. However, these components are not as important for fish, but do offer some advantages for managing trash and flow and would help with GRCC's operation.

- Tom Pitts asked if the Canal Company could come up with the 25% cost share and if they could re-apply and get funding from NRCS to replace the 8-Gate Structure and Siphon?
  - Bob Norman didn't think that same source of emergency funding would be available, but other funding sources might be available.
  - Tom Chart said he contacted NRCS, and while there's not a source they can identify immediately, they will continue to explore the matter with their state conservationist (Elise Boeke).
- Tom Pitts noted the Program received the benefit of a fish passage and a screen on the east side from the dam rehabilitation project. The Program has agreed to fund their O&M for the east side fish screens and the fish passage.
- The committee recognized that our good working relationship with the Canal Company is very important, and, at the same time, the proposed additional cost of \$2.4 million is a concern for our limited capital funds in light of known and unknown anticipated future projects (e.g., costs of improved floodplain operation).
- The Committee agreed we should further explore options (cost-sharing [NRCS, State, etc.], evaluate other cost estimates and options for rebuilding or replacing the 8-gate structure, etc.) and then discuss those with GRCC.
  - >Bob Norman will set up a meeting with GRCC and a small group of Program representatives (Reclamation, Henry Maddux, Program Director's Office [Tom Chart and Kevin McAbee], and Tom Pitts) as soon as possible. (Note: GRCC elects a new board in January.)
- Bob Norman noted that Thayn Hydropower also would like to see the 8-gate structure rebuilt, but likely does not have funds available in light of recently re-negotiated power contracts.
- Brent Uilenberg told the Committee it's now very unlikely they could contract fish barrier construction in FY17. FY18 is possible, but that would be less likely if we get into protracted negotiations to find other funding sources. Melissa asked if we could start work on the screen sooner; >Bob Norman said one option he'd like to look into would be for Reclamation to provide funding for GRCC to rebuild the 8-gate structure via the O&M contract. That would potentially allow us to move forward on the fish screen before the 8-gate structure rebuild.

2. **Schedule future call & meeting:** The Committee scheduled a webinar for February 13 from 9-11 a.m. The Committee discussed dates for a March or April in-person meeting in Salt Lake City and held three dates. Subsequently, the final date of March 27, 2017, 9 a.m. – 3 p.m., was selected. The DC trip will be the week of March 20. Henry reserved a room at Utah DNR for March 27 and will arrange for a working lunch. (Patrick is not available on March 27, but Robert Wigington will stand in for him via phone.) The major agenda items for the March (or April) meeting will be review/approval of draft RIPRAP revisions and assessment (which supports the sufficient progress assessment) and review/approval of draft FY 18-19 Program Guidance.

**ADJOURN: 2:30 p.m.**

**Assignments:**

1. Reclamation, Henry Maddux, Program Director's Office (Tom Chart and Kevin McAbee), and Tom Pitts will explore options with GRCC and develop a set of recommendations for Management Committee consideration.
2. Bob Norman will ask GRCC to prepare a proposal for rebuilding the 8-gate structure under their supervision (and canal and siphon).

## Attachment 1: Participants

Colorado River Management Committee Conference Call, November 28, 2016

### Management Committee Voting Members:

Brent Uilenberg	Bureau of Reclamation
Michelle Garrison	State of Colorado
Tom Pitts	Upper Basin Water Users
Steve Wolff	State of Wyoming
Marj Nelson for Seth Willey	U.S. Fish and Wildlife Service
Melissa Trammell	National Park Service
Patrick McCarthy	The Nature Conservancy
Shane Capron	Western Area Power Administration
Leslie James	Colorado River Energy Distributors Association
Henry Maddux	State of Utah

### Nonvoting Member:

Tom Chart	Recovery Program Director, U.S. Fish and Wildlife Service
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### Recovery Program Staff:

Kevin McAbee	U.S. Fish and Wildlife Service
Angela Kantola	U.S. Fish and Wildlife Service
Julie Stahl	U.S. Fish and Wildlife Service
Jana Morhman	U.S. Fish and Wildlife Service

### Others

Tildon Jones	U.S. Fish and Wildlife Service
George Weekley	U.S. Fish and Wildlife Service
Leslie McWhirter	Bureau of Reclamation
Dave Speas	Bureau of Reclamation
Bob Norman	Bureau of Reclamation
Mark Wernke	Bureau of Reclamation
Kathleen Callister	Bureau of Reclamation
Lauren Ris	Colorado Department of Natural Resources

## **Attachment 2**

**Green River Canal Company and Thayn Hydro Request for Improvements  
Bureau of Reclamation, Western Colorado Area Office – Grand Junction  
November 17, 2016**

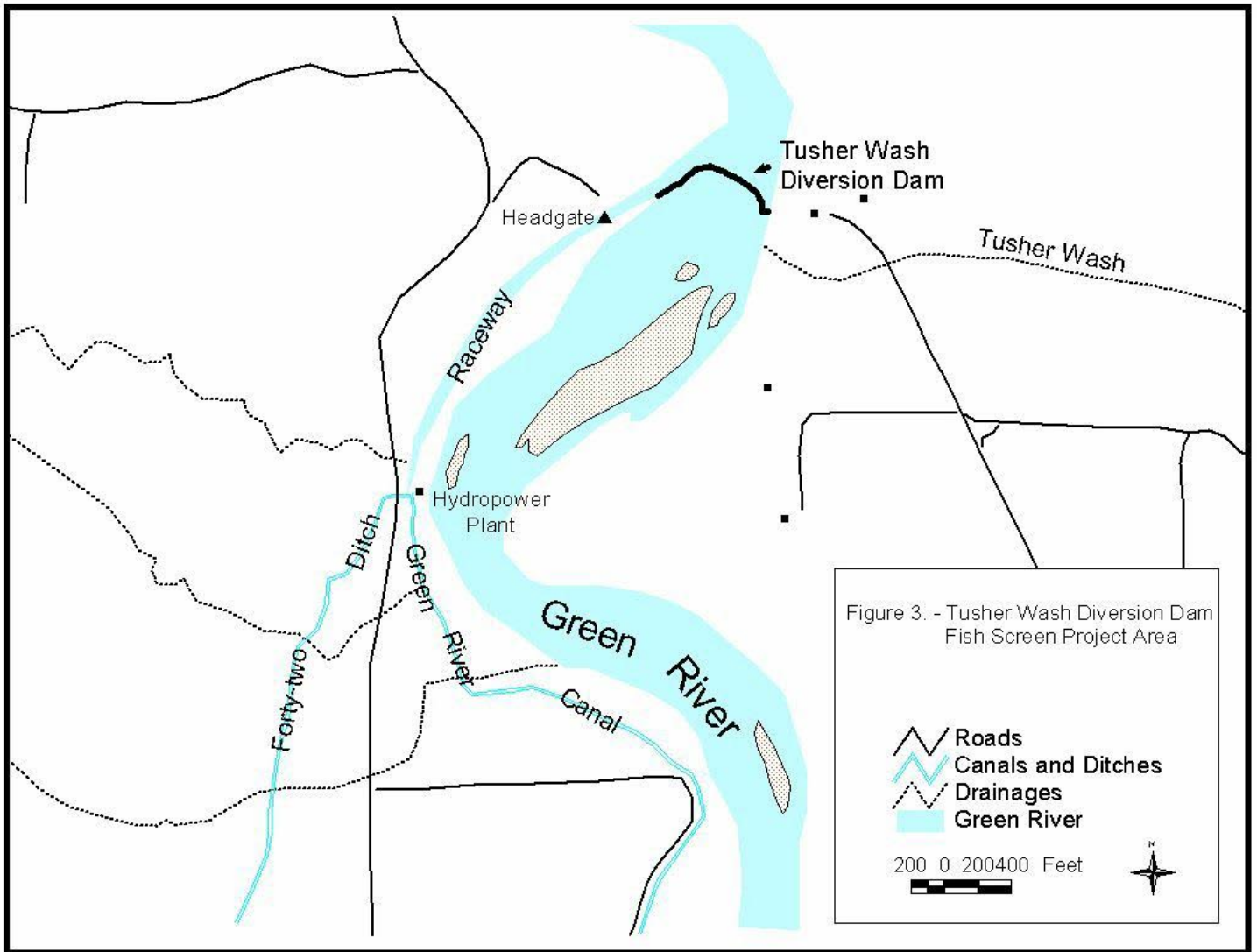
Prior to completion of the Tusher Wash Diversion Dam rehabilitation, design options to minimize the entrainment of fish in the canal system were limited by the amount of available hydraulic head. In our case, hydraulic head is the amount of energy available to use at the fish barrier. Our initial thoughts were that if we made improvements to several canal structures and increased their hydraulic efficiency, we could gain enough head to make a barrier work. These structures included the 8-Gate Structure, the canal intake structure and possibly a siphon downstream from the fish barrier. The water users benefited from this approach because these structures are at the end of their operational life, are difficult to operate, and need to be replaced. Analysis during the 2016 irrigation season found that the benefit of replacing the 8-Gate structure would only provide an additional 0.1 feet of head. Therefore the value to the Recovery Program of replacing the 8-Gate structure was brought into question.

The Tusher Wash Diversion Dam rehabilitation was completed in 2016. The rehabilitation included fish preclusion devices for the east side diversions, an upstream fish passage channel, and downstream fish passage notches on the diversion dam crest. The dam rehabilitation also provides an additional 1.25 feet of head to operate the fish barrier, therefore it is no longer necessary to replace and upgrade the 8-Gate Structure, the siphon, and the canal lining downstream from the fish barrier.

From an engineering/hydraulic energy perspective the only features needed to support the operation of the fish barrier is to upgrade the canal inlet structure and line the canal from the canal inlet structure to the fish barrier. At other fish screen projects Reclamation has constructed the fish return with plastic pipe and the capacity of the pipe is designed for fish return purposes only. Green River Canal Company desires the ability to also sluice floating debris and sediment through the fish return channel and have requested that the capacity of this channel accommodate their entire canal capacity, 80 cfs, in an open channel. Reclamation has included this request in our proposed design.

Green River Canal Company and Thayn Hydro own, operate and maintain the west side diversion facilities. Reclamation is currently involved in negotiations with these entities to obtain their permission to build the fish screen and obtain their commitment to operate and maintain the facility. They believe that the Recovery Program should replace the structures that we would have replaced if they had not rebuilt the diversion dam, including the 8-Gate Structure and canal siphon. Reclamation is requesting Management Committee input on project components to include in our response to the Green River Canal Company and Thayn Hydro.

Reclamation does not disagree that the requested improvements are in need of repair or replacement. We are requesting guidance from the Recovery Program regarding whether to include the additional improvements in the fish barrier project.



### Dam Rehabilitation Cost Summary

GRCC	\$1,100,000
Fed(NRCS)	6,825,000
Fed(FWS)	75,000
Total	<u>\$8,000,000</u>

### Fish Barrier Project

Fish Barrier (80 cfs)	
Canal headgate replacement/modification	\$150,000
Canal lining to fish barrier	200,000
Return channel to river	430,000
Fish Barrier	1,420,000
Total Fish Barrier	<u>\$2,200,000</u>

### Additional Improvements Requested by GRCC and Thayn Hydro

8-Gate Structure	\$2,000,000
Canal Siphon	165,000
Canal lining from fish barrier to siphon	200,000
Total Additional Improvements	<u>\$2,365,000</u>

### Current 8-Gate Structure



