

- I. Project Title: **Green River Canal Fish Screen and Weir Wall**
- II. Bureau of Reclamation Agreement Number(s): NA
- III. Principal Investigator(s): Ryan K. Christianson
Bureau of Reclamation
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- IV. Abstract: The Green River Canal begins on the west side of the Tusher Wash Diversion Dam, located on the Green River above Green River, Utah and diverts water for the Green River Canal Company & Thayn Hydropower. Entrainment of native fish has been documented in the Green River Canal under multiple studies. This project consists of constructing a fish entrainment solution in the Green River Canal Company main canal to minimize entrainment of fish. The facilities were constructed during the 2018-19 non-irrigation season and consist of a concrete weir wall and inclined overflow screen in the canal with appropriate fish/debris return facilities. Water entering the canal flows over the top of the weir by approximately 0.5 feet. Flows passing over the weir wall then pass through an inclined screen. The remainder of the water column in front of the weir wall is returned to the Green River, along with any fish and debris in the water column below the top of the weir wall.
- V. Study Schedule: This project had been deferred for a number of years, initially due to water right litigation between the Green River Canal Company and Thayn Hydropower which was ultimately resolved in the Utah Supreme Court. Additionally, the State of Utah and the Green River Canal Company were evaluating the feasibility of rehabilitating the diversion dam to address needed repairs and improve operations. In FY 2012 a partnership was developed between the many local water users, the State of Utah and the NRCS to design, permit, and construct the diversion dam rehabilitation. A Final ROD and EIS were completed in 2015. Construction of the dam rehabilitation was completed in 2016. An O&M contract was executed with the Green River Canal Company on April 24, 2018. Construction began after the 2018 irrigation season and was completed before the beginning of the 2019 irrigation season.
- VI. Relationship to RIPRAP: Green River Action Plan: Mainstem II.B.2 Screen at Tusher Wash diversion to prevent endangered fish entrainment.
- VII. Accomplishment of FY 2019 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Reclamation issued Solicitation No. 140R4018R0028 for the construction of the Green River Canal (GRC) Fish Screen on August 3, 2018. On September 21, 2018, Contract No. 140R4018C0031 was awarded to NW Construction, Inc. out of Bozeman, Montana for \$3,807,350.00. Notice to Proceed (NTP) on September 26, 2018. On-site construction started on October 30, 2018 and the project was substantially completed by March 31, 2019. The final contract (excluding the fish screens) value was \$3,783,942.

The fish screens were supplied and installed by WildFish Engineering LLC out of Lakewood CO for approximately \$112,000.

The principal components of work included:

Removal and disposal of existing canal structures.

Performing excavation and placing compacted embankment in over 800 linear feet of the existing canal. The canal work started downstream of the hydropower plant and ended at the first siphon. The canal was lined with a PVC membrane prior to being covered with 3-inch deep geogrid filled with concrete.

Placing approximately 650 cubic yards of cast-in-place concrete for structures.

Removal of the existing corrugated metal siphon pipe with 125 linear feet of 63-inch HDPE pipe.

Excavation and construction of a 240-foot long fish return channel from the fish screen to the Green River. The fish return channel consisted of placing grouted riprap and installing 6-inch geogrid filled with concrete to prevent erosion.

A 10-wide by 10-high radial gate and hoist with actuator was installed in the new radial gate structure to regulate the flow into the canal.

Three different types of gates with actuators and a central control panel were installed at the fish screen structure regulated the flow over the screen and flow returned to the river.

Installation of complete electrical system, security fencing, gravel surfacing and reseeded of disturbed areas.

VIII. Additional noteworthy observations: None

IX. Recommendations: None

X. Project Status: Construction is complete and the fish screen is fully operational

XI. FY 2019 Budget Status

- A. Funds Provided: \$4,199,591 FY 2019
- B. Funds Expended: \$4,199,591
- C. Difference: \$0
- D. Percent of the FY 2019 work completed, and projected costs to complete: 100%
- E. Recovery Program funds spent for publication charges: \$0

XII. Status of Data Submission (Where applicable): NA

XIII. Signed: Ryan Christianson November 15, 2019
Principal Investigator Date

APPENDIX: NA