

Stewart Diversion Modification Project - 2021-2024

Client: Trout Unlimited

Owner: Stewart Ditch and Reservoir Company

Reference: Luke Laurita, Trout Unlimited, Lower Gunnison River Project Manager - luke.laurita@tu.org

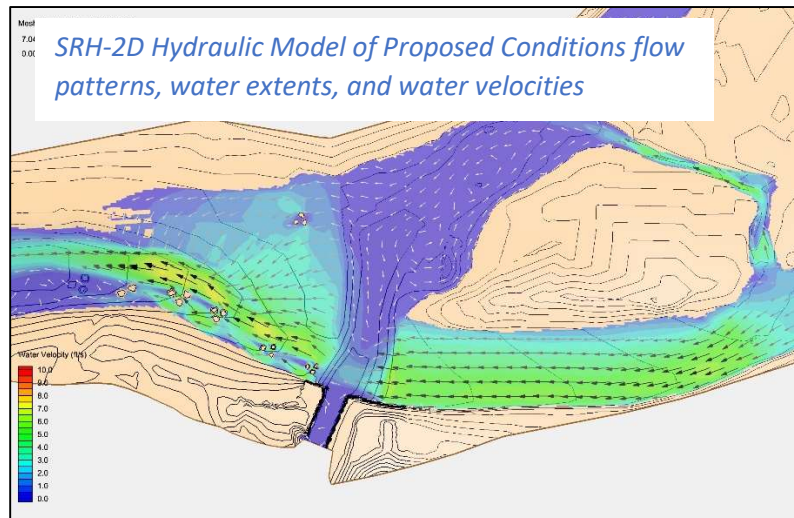
Project Location: North Fork Gunnison River, Delta County, Colorado

Name of Project Manager/Engineer: Quinn Donnelly, PE

Total Project Costs (Design/Construction): \$102,000 / \$832,000

Brief Description of Project: As part of a project managed by Trout Unlimited and sponsored by the Stewart Ditch and Reservoir Company, RiverRestoration lead the design of modifications to an irrigation diversion on the North Fork of the Gunnison River upstream of Paonia, CO. The existing diversion structure was overly constrictive to river flows, maintaining multiple feet more hydraulic head than necessary for the diversion. The large drop over the structure created navigability and fish passage concerns, especially at lower flows. Through site assessment, hydrographic survey, and hydraulic modeling, RiverRestoration worked with subconsultant, J-U-B Engineers to design a more efficient system with a lowered boulder grade control and naturalized downstream riffle. The main grade control was able to be lowered almost three feet compared to existing conditions, allowing for a gently sloped engineered riffle downstream of the main grade control to facilitate fish and boat passage.

The project's headgate and top quarter mile of ditch was rebuilt to facilitate the lowered inlet elevation. The headgate was angled to reduce debris hang up. The gates were configured for the ability for automation in the future. In-channel components of the project included the new main boulder grade control structure and engineered riffles upstream and downstream of the headgate. The river left bank of the channel was stabilized with a boulder stacked wall. Aquatic habitat elements were incorporated throughout the project and were strategically placed in the riffles to aid in fish passage.



The team worked on all aspects of the project, including hydrographic survey, site assessment, concept designs, hydraulic design, agricultural exemption verification with the USACE, local floodplain and grading permits, construction documents, bid support, and construction support services.

The project was completed in winter of 2024 and through the project's first runoff has received positive feedback from the ditch company, the fisheries groups, and the boating community.