

Robinson Diversion Modification Project - 2017-2021

Client: Pitkin County Healthy Rivers and Streams

Owner: Robinson Ditch Company

Project Location: Roaring Fork River, El Jebel, Colorado

Name of Project Manager/Engineer: Quinn Donnelly, PE



Brief Description of Project: The primary purpose of the Robinson Diversion Modification project was to provide safer and more consistent passage through this reach of the Roaring Fork River for recreational anglers, commercial fishing guides, recreational boaters, and commercial whitewater guides. The existing diversion was a loose collection of boulders that created a navigation hazard, collected debris, and required regular maintenance due to damage during high and ice flow events.

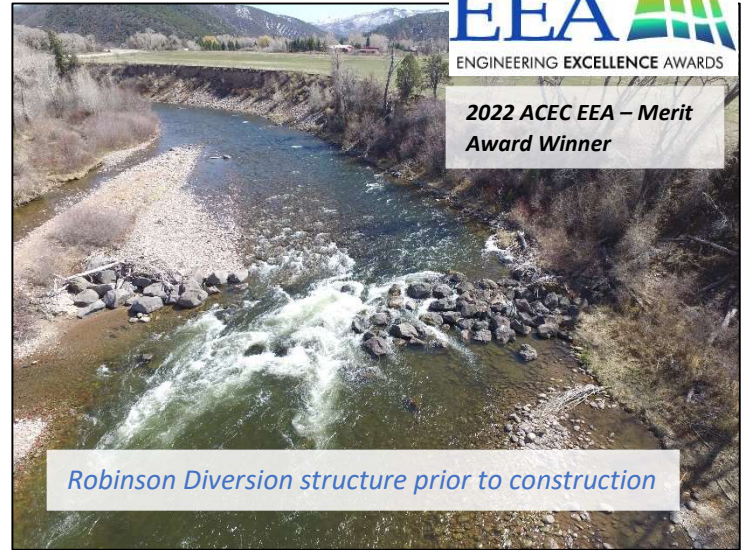
The project also provided improved upstream passage and added 0.5 acres of improved aquatic habitat for resident aquatic species. The improvements will also reduce in-channel maintenance performed by the ditch company, saving operations costs and reducing impacts to the river and the riparian corridor associated with operation of heavy equipment below ordinary high water.

To address the project goals, the proposed improvements included 2 small boulder grade control structures and an engineered riffle to spread the head loss over a longer distance, minimizing large hydraulics/waves. The project also included a new headgate and inlet ditch improvements to benefit the irrigation company.

The project team worked on all aspects of the project, including concept designs, stakeholder and river user coordination, fundraising, hydraulic design using SRH-2D and HEC-RAS, RGP-12 permit with the USACE, a Letter of Map Revision with FEMA, local floodplain and grading permits, construction documents and bid support.

The team developed an innovative design that remained stable and delivered water to the irrigation users, while allowing for improved boat and fish passage with a natural function and aesthetic. The project opened 3.5 miles of the Roaring Fork River for boating and float angling that had been generally avoided because of the hazards associated with the diversion.

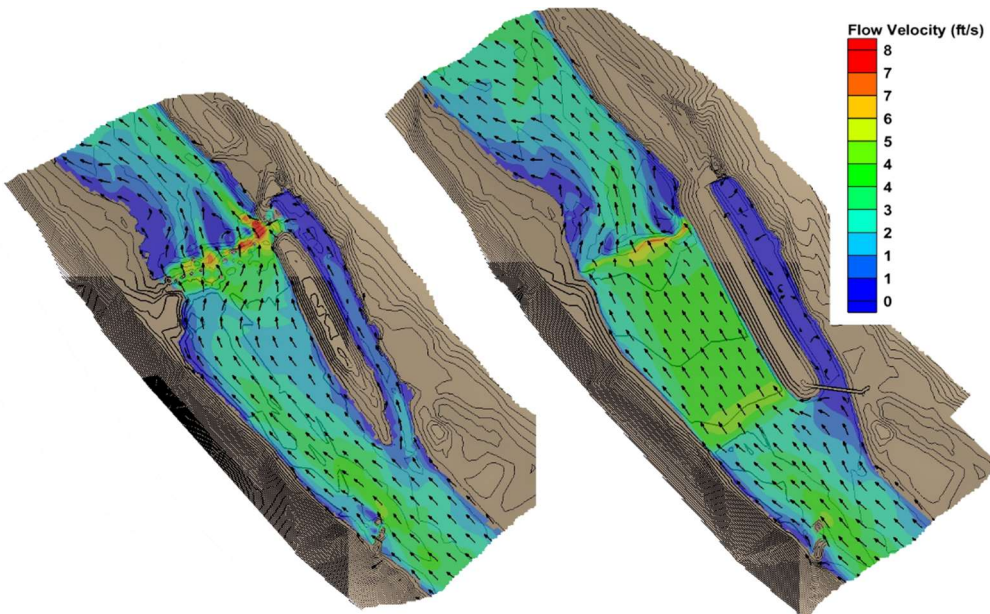
Project won a 2022 ACEC Engineering Excellence Merit Award



Robinson Diversion structure prior to construction



Robinson Diversion post-construction



SRH-2D Hydraulic Model of Existing and Proposed Conditions

