

ROCK CREEK PROJECT

Fountain Creek Watershed

2013 Colorado Flood Recovery



Multiple Benefits

- **Protect life, property, and infrastructure**
- **Mitigate flood risk**
- **Increase floodplain capacity**
- **Enhance ecosystem structure and function**
- **Enrich tourism**
- **Protect water supply**
- **Maintain home access**

The September 2013 Colorado flood brought an excess of water and sediment down into Rock Creek, a tributary to Fountain Creek in El Paso County, Colorado. In the aftermath of the flood, it was clear that several diversion structures and some private property had been damaged, along with the access road for numerous private properties, a campground, and the May Natural History Museum, a small business and tourist attraction. The flood also exposed several private ponds as potential hazards, so emergency measures were taken through the Natural Resources Conservation Service (NRCS) Emergency Watershed Protection (EWP) Program to provide emergency overflows in order to mitigate the risk from future floods. The Rock Creek project and work on the ponds were packaged into an EWP project with sponsorship from El Paso County and the Colorado Water Conservation Board (CWCB), and cooperation from the local landowners.

The main goals of the Rock Creek project were to reduce the risk to life and property from future flood events and to restore access to critical infrastructure. These assets include water diversion structures and a regional tourist attraction, the May Museum, and its adjacent campground.



Watershed
Fountain Creek



Locale
El Paso County



Local Sponsor
El Paso County



Property Ownership
100% private



Project Cost
\$166,709

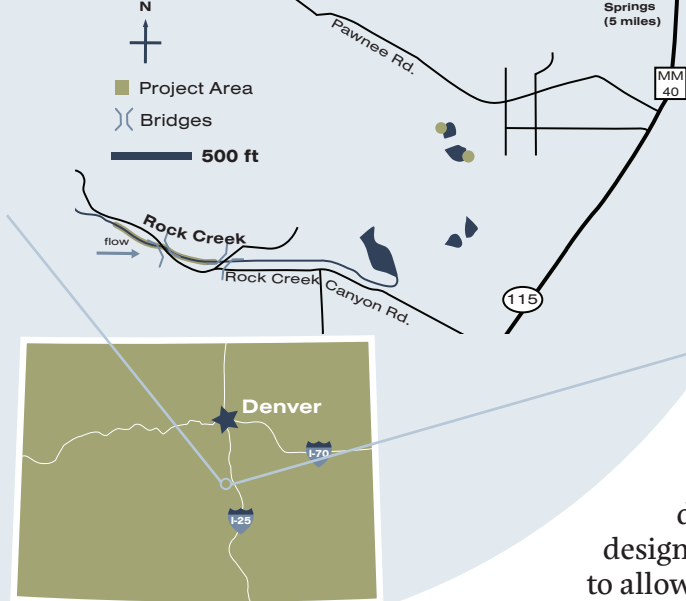


Construction Dates
Nov. 20, 2017 -
Jan. 20, 2018 (61 days)

Rock Creek prior to project implementation (2017).



Fountain Creek Rock Creek



River Corridor Rehabilitation

The Rock Creek rehabilitation project restored floodplain connection to a section of Rock Creek in the vicinity of the May Natural History Museum by removing sediment deposited during the 2013 flood. Restoring channel capacity aimed to protect the adjacent roadway and a private residence. Several concrete diversion dams located in the project reach were shored up with native boulders to make them less likely to flank and fail as a result of scour. Boulder cross-vanes were added in several locations to help direct flows and provide bed stability. The structures were designed and constructed to blend in with the channel bed and to allow overbank flows. Roadway embankments were stabilized with buried rock riprap in areas eroded by flood flows. Two off-channel ponds were given additional protection through the creation of armored emergency spillways. These rock aprons are meant to allow flood flows to exit the ponds in a controlled manner, thereby reducing the likelihood of catastrophic failure.



Left: A newly-constructed emergency spillway seeded and stabilized with erosion control fabric and hydromulch.

Right: Construction of a boulder cross-vane downstream of a diversion structure.

Project Objectives

- Remove flood-deposited sediments to reconnect the floodplain and restore channel capacity
- Maintain streambed grade through energy-dissipating grade control structures
- Protect water diversion infrastructure
- Protect roadways by stabilizing embankments
- Restore fish passage
- Revegetate with a native seed mix

BY THE NUMBERS

project length:
1,500 linear feet



2 participating
landowners



6 in-stream
structures



1,800 Cubic yards of
sediment removed



2 emergency
spillways constructed



0.2 acres
seeded



Before



Looking upstream at a diversion structure that was flanked during the flood. Road repairs are temporary.

After



Looking upstream a repaired diversion structure and improved channel and floodplain capacity.



Looking upstream at channel in the vicinity of the May Museum parking lot.



Looking upstream at reconstructed channel in the vicinity of the May Museum parking lot. Note improved channel capacity, grade control structures, and roadway embankment protection.



Excessive bed scour on the downstream side of the Gale diversion structure left it vulnerable to washout during the next flood.



A new rock ramp has improved the long-term stability of the Gale diversion structure and provided the opportunity for improved aquatic organism passage.

PROJECT TEAM

The Rock Creek project team consisted of the NRCS, El Paso County, CWCB, local property owners, and construction contractors.

The NRCS completed the design and construction oversight for the project. El Paso County acted as the local sponsor for the project and provided match funding. CWCB also contributed match funding and provided technical expertise to help with project design and construction oversight. The local property owners worked collectively to ensure access and support for the project. The project was built by Tezak Heavy Equipment, the project's construction contractor.

Partners

Private landowners
 El Paso County
 Colorado Water Conservation Board (CWCB)
 Natural Resources Conservation Service (NRCS)

Contractors

Tezak Heavy Equipment

FOR MORE INFORMATION

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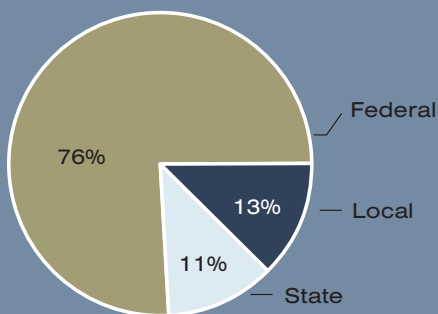
www.ColoradoEWP.com

Energy-dissipating steps that incorporate native boulders give the project a natural "feel" while providing scour protection for nearby infrastructure.



BUDGET

Project Funding by Source



Project Cost Breakdown

TOTAL: \$166,709

