BUDGET AND FUNDING

Funding was acquired through a CWCB Water Supply Reserve Fund grant, an NRCS Environmental Quality Incentives Program grant, and CWCB loans to the Consolidated Ditch, Centennial Ditch, and the San Luis Valley Canal. Funding is broken up by source below, with Ditch Company contributions consisting of loaned funds, cash, and in-kind support.

	NRCS	CWCB	Ditch	Total Cost
Design of Project Elements	70%	30%	0%	$256,000
Rio Grande #2 Diversion and Headgate Construction	0%	76%	23%	$78,800
Consolidated and Pace Diversion and Headgate Construction	42%	22%	36%	$1,540,000
San Luis Valley Canal Headgate Construction	0%	51%	49%	$410,000
Centennial Ditch Diversion Construction	0%	52%	48%	$475,000
Project Monitoring, Outreach and Education, and Project Administration	0%	90%	0%	$99,000

PROJECT PROCESS

Planning the Five Ditches Project was a multi-year effort, with conversations, preliminary assessment estimates, and fundraising occurring years before final designs were completed. Participants in similar projects should expect to take the steps outlined below.

PROJECT BENEFITS

- Improved diversion efficiency and irrigation operations by replacing aging infrastructure
- Reduced maintenance for five ditches along the Rio Grande
- Improved water quality and reduced erosion by stabilizing streambanks
- Improved riparian and aquatic wildlife habitat
- Improved recreation and community safety
- Improved water administration
- Reconnected floodplain for improved upland habitat and floodplain function

"The way [the new system] works...has made the ditch run more efficiently...We've made water for ourselves with this automated system." — Greg Higel, Centennial Ditch Rider

Bank shaping and revegetation work downstream of the San Luis Valley Canal.

FIVE DITCHES PROJECT

OVERVIEW

In the late 1990s, stakeholders across the Rio Grande Basin set in motion a study of 91 miles of their river in an effort to understand why the Rio Grande was no longer functioning as it had historically. This study highlighted changes in hydrology and aging, failing diversion structures as part of the problem, which were causing sediment deposition, erosion, loss of riparian habitat, and inefficient diversion of water. The Five Ditches Project, facilitated by the Rio Grande Headwaters Restoration Project, is a collaborative effort many years in the making that improves irrigation infrastructure while also benefiting the river as a whole. Replacing diversion dams and headgates for five ditch companies will allow farmers and ranchers across the valley to get their water more efficiently, and riparian restoration work on nearby river banks will protect those investments, improve habitat, and reduce erosion.

QUICK FACTS

3 New Diversion Structures
4 Headgate Structures, 2 Automated
3,500 ft Restored Streambanks
143 Shareholders
35,906 Irrigated Acres

Left: Ditch rider Greg Higel discusses project plans for the new Centennial diversion with Emma Reesor, project manager.

PROJECT PARTNERS

Cooley & Sons Excavating
Robins Construction
Riverbend Engineering
Adjacent Landowners

Natural Resource Conservation Service (NRCS)
Rio Grande Headwaters Restoration Project
Colorado Water Conservation Board (CWCB)
Colorado Parks and Wildlife (CPW)

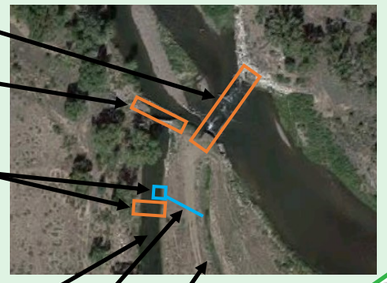
Consolidated Ditch and Headgate Company
Rio Grande #2 Ditch Shareholders
San Luis Valley Canal Company
Centennial Irrigating Ditch Company
Pace Ditch

CONSOLIDATED DITCH

38 Shareholders ● 33,210 AF/yr diverted ● 6,849 irrigated acres

The Consolidated Ditch had a crumbling, century-old concrete headgate and a difficult to maintain push-up diversion dam, which hindered its ability to divert water efficiently. In Winter 2017, the headgate was replaced with a new concrete structure, complete with trash rack and automation. The new concrete diversion dam, which features a fish ladder and two Obermeyer gates for fine control and sediment flushing, was completed Spring 2019. The adjacent banks will also be reshaped and revegetated, improving habitat for wildlife and channel stability.

Top: Old Consolidated and Pace headgates. **Left:** New headgates. **Right:** Old and under construction diversion dams.



PACE DITCH

1 Shareholder ● 349 AF/yr diverted ● 107 irrigated acres

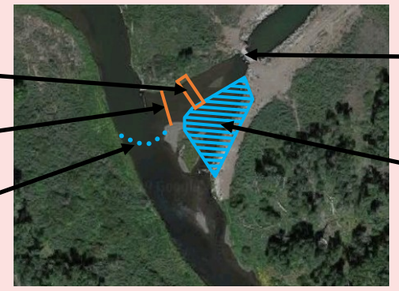
The Pace Ditch is small and is located directly adjacent to the Consolidated Ditch. Both ditches share the diversion dam. In 2017, the Pace Ditch headgate was replaced at the same time as the Consolidated Ditch headgate with a manual slide gate and pipe to convey water to the ditch. The ditches share the new diversion and trash rack.

SAN LUIS VALLEY CANAL

78 Shareholders ● 24,561 AF/yr diverted ● 20,200 irrigated acres

Left: SLV Canal headgate, before rehabilitation, set back from the river with degraded concrete. **Right:** New concrete headgate with automated gates.

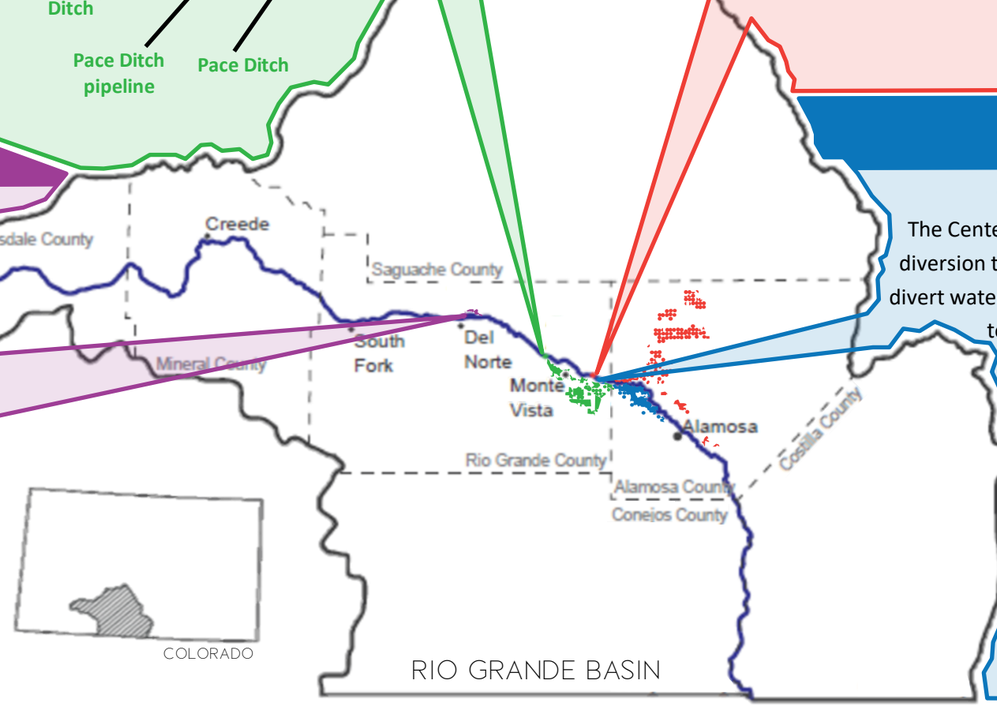
The San Luis Valley Canal suffered from a deteriorating, over 100 year-old concrete headgate. Over time the river had moved away from the headgate structure, resulting in a static pool in front of the headgate that caused sediment deposition. Do to the hydrology of the river, this canal does not utilize a diversion dam, so efforts were focused on replacing and relocating the headgate. The new concrete headgate is situated closer to the river and features automated gates. The banks were reshaped around the new structure, and a severely eroding bend in the vicinity of the diversion was reshaped, stabilized, and revegetated. The project also includes a trash deflector and rock weir check structure.



RIO GRANDE #2 DITCH

4 Shareholders ● 1,610 AF/yr diverted ● 250 irrigated acres

The Rio Grande #2 Ditch suffered from an inefficient diversion dam and high maintenance due to trash and sediment. In Winter 2017, the diversion dam and headgate were removed and replaced with a fish-passable stacked rock cross vain diversion structure and a steel headgate. The surrounding channel and streambanks were also reshaped and stabilized, and aquatic and riparian habitat improvements and a rock deflector were added.



CENTENNIAL DITCH

22 Shareholders ● 25,731 AF/yr diverted ● 8,500 irrigated acres

The Centennial Ditch had a degraded concrete diversion that was dangerous to maintain. In order to divert water at certain flows, the ditch rider would have to wade into the river to put boards across the dam and raise the water level. In Winter 2017, the old diversion structure was removed and replaced with a grouted rock dam. The new structure also includes an Obermeyer gate in the low flow channel for fine control and sediment flushing. By request from CPW, the dam is a fish barrier to prevent the passage of nonnative species. Nearby streambanks were also stabilized.