

Exhibit A

Scope of Work

WATER ACTIVITY NAME - Romero-Guadalupe Channel Rectification Project

GRANT RECIPIENT – Romero Irrigation Co.

FUNDING SOURCE - Rio Grande Basin Account - \$83,700

BACKGROUND

Romero Irrigation Company (Romero) and Guadalupe Main Ditch Company (Guadalupe), two of the oldest ditch companies on the Conejos River, represent 58 percent of all the number-one priority water rights on the Conejos. The Romero Irrigation Company, which takes fiscal and administrative responsibility for this project, was incorporated as a 501(c)(12) mutual ditch company in the year 1900. It has 389.9 shares of outstanding stock, irrigating 10,872 acres. Assessments are \$75.00 per share with 53 shareholders. Romero Ditch has some of the most senior water rights on the Conejos system, with all or a portion of the following priorities: #1, #5, #23, #34, #66, #115, #119, #136, and #168, for a total of 667 cfs. Total system length is approximately 800 miles of canals and laterals. Organizationally, Romero has a five member board composed entirely of stock holders. All assessments are used for the salary of one full time employee and one part-time employee, with the remainder used for system maintenance. Guadalupe Main Ditch Company, co-applicant, is the most senior ditch on the Conejos system. It has an 1855 priority decree for 13.46 cfs, which irrigates approximately 900 acres. The remainder of the original decree has been transferred to other ditch systems. It also carries water from the Brazos Del Norte decree, priority #139, for 20 cfs, which irrigates another 900 acres, with 17 share holders holding assessments at \$40.00 per share. Together, most of the share holders in the combined Romero-Guadalupe systems are of Latino descent and have been associated with this land for many generations, many families dating back to the founding of the State of Colorado.

The funds from the WSRA will be used by the Romero Ditch Company and the Guadalupe Main Ditch Company, to cover the costs of addressing multiple consumptive and non-consumptive needs of the ditch companies and the Conejos River, while also reducing the potential future flooding of the community of Guadalupe, Colorado. These goals will be accomplished by reshaping and improving the condition of the channel of the Conejos River through strategic stabilization and restoration, by the placing of J-Hooks vane structures, rock weirs and stream bank restoration, on a portion of the Conejos River, in south-west Colorado.

The deliverables from the project include, but are not limited to the following:

A river channel that will hold expected and experienced floodwaters of the Conejos; maintain the stable width: depth ratio of the channel; the ability of the river to pass suspended solids; ensure stability of structures during flood events; maintain fish passage during all events, and improve fish habitat, improve water quality, while complying with the Rio Grande Compact, of which the flows of the Conejos River are a component.

WSRA funding from the Basin Account in the amount of \$83,700 will account for 48.6% of the project.

Other sources of revenue and matching funds include:

- NRCS (Romero \$30,750, Guadalupe, \$40,850) (includes \$2,600 contingency) \$ 71,600
- Conejos Water Conservation District \$ 15,000

- Romero Irrigation Company (plus continued maintenance) \$ 1,000
 - Guadalupe Ditch Company (plus continued maintenance) \$ 1,000
- \$88,600 match

SUMMARY OF TASKS

Overview of task: The Romero-Guadalupe Channel Rectification Project requests \$83,700 from the WSRA Rio Grande Basin Account in order to fund the re-shaping of the channel of the Conejos River at the project location and the placing of rock water control structures as designed by the NRCS. NRCS has done the accompanying engineering and the drawings based on acceptable procedures for the installation of rock weirs and J-hooks. A copy of the NRCS work plan and engineering drawings for the Romero Irrigation Company are available. Also available is the Conservation Plan Map for Guadalupe Main Ditch portion of the task, which NRCS has completed sufficiently enough to determine the scope of work and costs for this proposal. Final details for the Guadalupe drawings are completed and all plans and specifications have been approved by a licensed professional engineer.

Method / Procedure to accomplish the task

As described in “Plans for the Construction of Conejos River Diversion & Streambank Protection”, the tasks for the placement of W-weir rock structures and J-hooks will follow standard accepted procedures and will conform to NRCS specifications. Ditch company supervision and consultation will be provided at one quarter time over six months, ensuring that these specifications are met.

W-Weir rock structures: The design of the W-Weir (W as looking in the downstream direction) will be installed to resemble bedrock control channels on larger rivers, avoiding the unnatural and uniform “line of rocks” that detracts from visual values. The W-Weir is similar to a Cross-Vane in that both sides are vanes directed from the bankfull bank upstream toward the bed with similar departure angles. From the bed at $\frac{1}{4}$ and $\frac{3}{4}$ channel width, the crest of the weir rises in the downstream direction to the center of the bankfull channel creating two thalwegs (see Figure 5, in Rosgen’s description, available). The objectives of the structure are to provide grade control, enhance fish habitat, stabilize stream banks, facilitate irrigation diversions, and increase sediment transport. Habitat for trout is enhanced by maximizing usable holding, feeding and spawning areas. Fish hold in the multiple feeding lanes created by the two thalweg locations and pools. Various age classes of trout also hold in the deep glide created upstream of the structure and against both banks due to the increased depth and reduced velocity of flows in the near-bank region.

J-Hook Vane rock structures:

The J-Hook Vane is an upstream directed, gently sloping structure composed of natural materials, in this case rock. The structure is located on the outside of stream bends where strong downwelling and upwelling currents, high boundary stress, and high velocity gradients generate high stress in the near-bank region. The structure is designed to reduce bank erosion by reducing near-bank slope, velocity, velocity gradient, stream power and shear stress. Redirection of the secondary cells from the near-bank region does not cause erosion due to back-eddy re-circulation. The vane portion of the structure occupies $\frac{1}{3}$ of the bankfull width of the channel, while the “hook” occupies the center $\frac{1}{3}$. Maximum velocity, shear stress, stream power and velocity gradients are decreased in the nearbank region and increased in the center of the channel. Sediment transport competence and capacity can be maintained as a result of the increased shear stress and stream power in the center $\frac{1}{3}$ of the channel. Backwater is created only in the near-bank region, and the small departure angle gently redirects the velocity vectors from the near-bank region, reducing active bank erosion.

Deliverables:

- A channel that will hold expected and experienced floodwaters of the Conejos
- Maintain the stable width/depth ratio of the channel;
- Maintain the shear stress to move the largest size particle to maintain stability;
- Decrease near-bank velocity, shear stress or stream power;
- Ensure stability of structures during major floods;
- Maintain fish passage at all flows;
- Improve fish habitat;
- Be visually compatible with natural channels;
- Be less costly than traditional structures;
- Reduce maintenance or create maintenance-free diversion structures;
- Reduce erosion and prevent sediment deposition; and
- Proactive and continuing maintenance by our two senior ditch systems

Expectations and Effects:

- Protect the community of Guadalupe
- Lessen loss of Rio Grande Compact waters to the system
- Stabilize riparian corridor
- Lessen the total maximum daily silt load (TMDL) to a significant but undetermined degree
- Improve water quality to some undetermined degree

BUDGET**Cost of Project:**

Rock for weirs and J-hooks – 2270 cubic yards @ \$30.83 per yard = \$69,984	\$ 70,000
Placement of rocks – 2270 yards at \$34.14 per yard = \$77,497	\$ 77,500
Channel re-shaping – 5000 cubic yards @ \$1.50 per yard	\$ 7,500
Steel for structures, painted & ready to install (NRCS best estimate for steel)	\$ 12,550
Site clean-up, based on similar jobs by NRCS	\$ 2,250
Ditch company supervision & consultation, 6 mox. ¼ time @\$614	<u>\$ 2,500</u>
TOTAL COSTS	\$172,300

Revenue for Project:

NRCS (Romero \$30,750, Guadalupe, \$40,850) (includes \$2,600 contingency)	\$ 71,600
Conejos Water Conservation District	\$ 15,000
Romero Irrigation Company (plus continued maintenance)	\$ 1,000
Guadalupe Ditch Company (plus continued maintenance)	\$ 1,000 <u>\$88,600</u>
<u>match</u>	
Roundtable Funds	<u>\$ 83,700</u>
TOTAL REVENUE	\$172,300

Water Supply Reserve Account funding (Roundtable Funds) will cover 48.6% of each task not to exceed \$83,700.

SCHEDULE

Month	Nov 2007		Dec 2007		Jan 2008		Feb 2008		Mar 2008		Apr 2008	
Ground Condition	Frozen Ground		Frozen Ground		Frozen Ground		Frozen Ground		Thawing Ground		Thawed Ground	
Task	Channel reshaping; moving gravel						Construction of Weirs & J-Hooks					
Task		Haul in rock							Install Steel Structures			Site Clean up

PAYMENT

Payment will be made based on actual expenditures and invoicing by the water activity sponsor. The request for payment must include a description of the work accomplished by major task, and estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent, identification of any major issues and proposed or implemented corrective actions. The last 5 percent of the entire water activity budget will be withheld until final project/water activity documentation is completed.

All products, data and information developed as a result of this grant must be provided to CWCB in hard copy and electronic format as part of the project documentation.