

## **Exhibit A**

### **Scope of Work – June 22<sup>nd</sup>, 2010**

**WATER ACTIVITY NAME – 2010 Lower Blanco River Restoration Project**

**GRANT RECIPIENT – Lower Blanco Property Owners Association**

**FUNDING SOURCE – WSRA Statewide Account \$150,000.00**

### **INTRODUCTION AND BACKGROUND**

The Lower Blanco Property Owners Association (LBPOA) is a 501(c)(3) non-profit organization. The LBPOA was first formed in the 1980's, and has been actively promoting restoration of the Lower Blanco River since the early 1990's. A trans-basin water diversion was constructed in the 1960's by the Bureau of Reclamation as part of the Upper Colorado River Water Compact. This water diversion dramatically reduced water flow to the 9.0 miles of the Lower Blanco River. As a result, in-stream aquatic functions and habitat have been severely impacted. There is limited habitat for fish, elevated water temperature in the Summer and Fall, and infrequent large flows capable of re-working the gravel & cobble in the streambed. The LBPOA has sponsored 5 restoration projects on the river over the past 18 years. Together these projects total about 5 miles in length. All of this project work has been funded in part by grants from the CWCB, the NRCS, and several local conservation districts. An additional 1.0 mile of river was restored by a private landowner at his own expense. With the 2010 project, the LBPOA intends to complete another 1.9 miles of river restoration.

### **OBJECTIVES**

The project seeks to improve aquatic and terrestrial habitat in the river, to reduce water temperatures, and to enhance riparian functions. The in-stream work proposed consists of channel shaping (to deepen pools and build side bars) rock structures (to create scour pools and grade control, large woody debris (for improved diversity of in-stream habitat and to enhance recruitment of riparian vegetation. The LBPOA understands that FEMA has performed a study of this section of the Blanco River, and the LBPOA understands that State standards for flood damage reduction will apply to this project. The Lower Blanco River is home to two species of concern (the Flannelmouth Sucker Fish, and the Spotted Leopard Frog), both of which will benefit from improved habitat conditions.

## TASKS

### **Task 1A:**    Final Design and Permits for Construction:

The LBPOA will retain an engineering company to develop final designs for the project. Final designs will be based on the preliminary designs and upon the specific input from various landowners and stakeholders. The final design will be submitted to the US Army Corps of Engineers and a Section 404 Permit will be requested. A Section 401 water quality certification will be obtained from the Colorado CDPHE if required. Local approvals from Archuleta County will be obtained as needed.

Deliverables: Final design plans, 404 permit approval and other approvals as required.

Total Cost:    \$8,000

Cost Share:

CWCB Statewide Acct - \$8,000

### **Task 2A:**    In-Stream Construction Work

The LBPOA will hire an experienced heavy equipment operator(s) to furnish and utilize appropriate heavy equipment for the channel shaping work, the rock structure work, the installation of woody debris structures and other related heavy equipment work. The LBPOA will retain an engineering company to provide oversight of the construction activities, including layout staking, inspection of rock structures, and permit compliance verification and general project management. Based on the preliminary project estimates, the budget for 2010 will allow for completion of approximately 1.9 miles of river restoration work. An estimate of construction costs for 2010 is attached as "Exhibit B".

Deliverables: Completed in-stream restoration work, in conformance with the approved final construction plans and 404 permit.

Total Cost:    \$218,000

Cost Share:

CWCB Statewide Acct - \$121,000

NRCS Grant - \$97,000

**Task 2B:**    Long Term Monitoring/ Final Report

At the completion of construction the LBPOA will develop as-built construction drawings base on the approved planset, and will collect baseline data for long-term monitoring. The LBPOA will complete a summary final report for the 2010 construction work. The LBPOA will monitor the project for a period of 3 years (or longer if required by permit conditions) to document changes to the project after construction. The proposed monitoring plan will include the establishment of photo reference points and repeated photographs each year for comparison purposes, measurement of pool depths created by excavation or by scour inducing structures, a qualitative assessment of fish and macro-invertebrate populations, observations of new scour or deposition features and a visual assessment of riparian vegetation health and density. Data on specific flood events will be included, as well as an informal survey of landowner observations and feedback on the success of the project.

Deliverables: A final report for the project. Monitoring Reports as required by the USACE.

Total Cost:    \$8000

Cost Share:

CWCB Statewide Acct - \$8000

Other grant sources - \$0

**Task 2C:**    Project Maintenance

Based on periodic site visits, landowner feedback and annual monitoring data, the LBPOA will perform maintenance work with heavy equipment to maintain the project. Maintenance work will be prioritized based on potential adverse impacts of a particular damaged area. Maintenance work will be performed in the Fall or early Spring of each year, in one equipment mobilization event. The LBPOA is committed to maintain the 2010 project and other phases if funding is available.

Deliverables: Repairs & adjustments to in-stream project features as required.

Total Cost:    \$13,000

Cost Share:

CWCB Statewide Acct - \$13,000

## REPORTING

The LBPOA will provide the CWCB a final report following completion of construction as described in Task 2B. With each request for reimbursement, the LBPOA will include a brief description of the work completed, along with invoices and other documentation of expenditures.

## PROJECT SCHEDULE

The LBPOA intends to complete the design and construction of this project in calendar year 2010. Maintenance and monitoring work will continue for an additional 3 years.

## BUDGET BY FUNDING SOURCES

| Funding Source         | Funding Amount |
|------------------------|----------------|
|                        |                |
| CWCB Statewide Account | \$150,000      |
| NRCS Grant Funding     | \$97,000       |
| Project Total:         | \$247,000      |
|                        |                |

## PAYMENT

Payment from CWCB to the LBPOA will be made based on actual expenditures and invoicing by the LBPOA. The request for payment will include a description of the work accomplished by major task, and an estimate of the percent completion for individual tasks. If major issues arise, the LBPOA will identify and describe those issues, and will propose corrective actions. It is understood that 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.

## BUDGET OF ESTIMATED PROJECT COSTS

|                                      |              |
|--------------------------------------|--------------|
| Large rocks for in-stream structures | \$100,000.00 |
| River Construction work              | \$105,000.00 |
| Engineering design, permitting       | \$8,000.00   |
| Project management                   | \$5,000.00   |
| Construction oversight               | \$8,000.00   |
| Project maintenance                  | \$13,000.00  |
| Project monitoring                   | \$8,000.00   |
|                                      | -----        |
| Total estimated project cost:        | \$247,000.00 |
|                                      |              |
|                                      |              |

Note: Please see Exhibit "B" for a detailed breakdown of estimated construction costs.

# Lower Blanco Property Owners Association

## 2010 River Restoration and Habitat Enhancement Project

### EXHIBIT B

#### Quantity & Cost Estimate

|   | Estimated Quantity           |                          |                          |                          |                          | Estimated Total<br>Installation<br>Quantity | Units | Estimated Total<br>Installation Cost | Estimated Quantity<br>Of Material<br>per Unit | Total Estimated<br>Quantity<br>Of Material | Estimated Cost<br>Of Material |
|---|------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|-------|--------------------------------------|---|--|-------------------------------|
|   | Sheet 3<br>STA 123+00-138+50 | Sheet 4<br>138+50-164+00 | Sheet 5<br>164+00-187+50 | Sheet 6<br>187+50-204+50 | Sheet 7<br>204+50-225+50 |   |       |                                      |   |  |                               |
| Large Rock Work                               |                              |                          |                          |                          |                          |   |       |                                      |   |  |                               |
| Build Rock J-Hook structure                   | 1                            | 4                        | 0                        | 0                        | 1                        | 6   | EA    | \$ 6,000.00                          | 15  | 90   | \$ 12,600.00                  |
| Build Modified Rock Cross Vane structure      | 5                            | 7                        | 3                        | 3                        | 3                        | 21  | EA    | \$ 31,500.00                         | 25  | 525  | \$ 73,500.00                  |
| Build Rock pile bank deflector                | 4                            | 9                        | 14                       | 3                        | 12                       | 42  | EA    | \$ 18,900.00                         | 6   | 252  | \$ 35,280.00                  |
| Build Rock "short vane"                       | 5                            | 4                        | 2                        | 0                        | 0                        | 11  | EA    | \$ 11,000.00                         | 9   | 99   | \$ 13,860.00                  |
| Rock sill across floodplain (1 rock per 3 LF) | 0                            | 0                        | 60                       | 75                       | 50                       | 185   | LF    | \$ 2,220.00                          | 0.41  | 76   | \$ 10,680.00                  |
| Install habitat & bank stabilization rock     | 20                           | 20                       | 20                       | 30                       | 30                       | 120   | EA    | \$ 4,800.00                          | 1   | 120  | \$ 16,800.00                  |
| Division channel structures                   | 1                            | 0                        | 0                        | 2                        | 0                        | 3   | EA    | \$ 6,000.00                          | 30  | 90   | \$ 12,600.00                  |
| Maintenance rocks                             | 12                           | 12                       | 12                       | 12                       | 14                       | 62  | EA    | \$ -                                 | 1   | 62   | \$ 8,680.00                   |
|   |                              |                          |                          |                          |                          |   |       |                                      |   | -600                                       |                               |
|   |                              |                          |                          |                          |                          |   |       |                                      |   | 714  |                               |
| Channel Shaping                               |                              |                          |                          |                          |                          |   |       |                                      |   |  | \$ 100,000.00                 |
| Channel & bank shaping                        | 600                          | 700                      | 800                      | 400                      | 800                      | 3,300                                       | LF    | \$ 13,200.00                         |   |  |                               |
| Floodplain fill with loader                   | 250                          | 300                      | 350                      | 150                      | 350                      | 1,400                                       | CY    | \$ 7,000.00                          |   |  |                               |
|   |                              |                          |                          |                          |                          |   |       |                                      |   |  |                               |
| Revegetation & Log Work                       |                              |                          |                          |                          |                          |   |       |                                      |   |  |                               |
| Seed and Mulch                                | 0.40                         | 0.30                     | 0.21                     | 0.12                     | 0.12                     | 1.15  | AC    | \$ 2,880.00                          |   |  |                               |
| Transplant woody riparian vegetation          | 20                           | 20                       | 20                       | 20                       | 20                       | 60  | EA    | \$ 1,500.00                          | 7   | 0  | \$ -                          |

Total Estimated Installation Cost: \$ 105,000.00      Total Estimated Materials Cost: \$ 100,000.00

Total Estimated Construction Cost: \$ 205,000.00

| Estimated Unit Prices                               | Unit price     |
|---|----------------|
| Large rock, 1.5 CY min. size                        | \$ 140.00 EA   |
| Medium rock, 0.8 to 1.5 CY size                     | \$ 75.00 EA    |
| Build Rock J-Hook structure                         | \$ 1,000.00 EA |
| Build Modified Rock Cross Vane structure            | \$ 1,500.00 EA |
| Build Rock pile bank deflector                      | \$ 450.00 EA   |
| Build Rock "short vane"                             | \$ 1,000.00 EA |
| Build rock sill across floodplain (1 rock per 3 LF) | \$ 12.00 LF    |
| Install habitat & bank stabilization rock           | \$ 40.00 EA    |
| Division channel structures                         | \$ 2,000.00 EA |
| Rock sill in channel for grade control              | \$ 1,000.00 EA |
| Build rifle hardening                               | \$ 2,600.00 EA |
| Build side channel rock structures                  | \$ 1,350.00 EA |
| Install logs for bank stabilization & habitat       | \$ 150.00 EA   |
| Channel & bank shaping                              | \$ 4.00 LF     |
| Floodplain fill with loader                         | \$ 5.00 CY     |
| Seed and Mulch                                      | \$ 2,500.00 AC |
| Transplant woody riparian vegetation                | \$ 25.00 EA    |
| Logs for bank stabilization & habitat               | \$ 150.00 EA   |
| Install log jamb structures                         | \$ 1,000.00 EA |