

## **Scope of Work**

**GRANTEE and FISCAL AGENT - Colorado Open Lands**

**PROJECT NAME – Tarryall Meadow Ranch Reclamation and Habitat Enhancement Project**

**GRANT AMOUNT – \$40,000**

### **INTRODUCTION AND BACKGROUND**

The 240-acre Tarryall Meadow Ranch (TMR) is located on Tarryall Creek in the Upper South Platte watershed in northern Park County. The property is situated immediately upstream of the 1640-acre Cline Ranch State Wildlife Area (SWA) near Como. Both properties are held in a perpetual conservation easement by Colorado Open Lands. Focal resources on TMR include numerous beaver ponds, extensive riparian and meadow wetlands, upland meadows, and approximately 6,000 linear feet (1.14 miles) of Tarryall Creek. Of the total stream distance at TMR, about two-thirds (4,000 feet) of the corridor manifests impaired stream and riparian habitat conditions due to historic placer mining during the late 19<sup>th</sup> century. The stream channel is currently confined by tailings comprised of boulders and cobbles in piles up to 20 feet high. As a result, the creek is effectively isolated from nearby ponds, wetlands, and meadows. Dredge tailings also comprise much of the stream bed and bank material. At the same time, long segments of the creek are now completely overtopped by a senesced willow community.

### **OBJECTIVES**

The proposed project will result in the reclamation of about 4,000 linear feet of stream and 5.7 acres of adjacent habitat that were highly modified by placer (dredge) mining in the early 20<sup>th</sup> Century. Tailings piles will be graded to a smooth undulating landscape, covered with an overburden soil cap, mulched, and re-vegetated with native grass seed. This, in turn, will establish new physical connections between existing upland (meadow) habitat, reclaimed riparian areas, and the enhanced stream channel. Non-linear riparian (floodplain) benches will be created along the channel by pulling tailings away from the banks. These benches will dissipate stream energy and provide quiescent aquatic habitat during high water. A variety of in-stream features will be constructed to enhance form and function of the channelized stream. Low profile structures known as “beaver starts” will be used at strategic cross sections of the channel to encourage beaver colonization and dam building. Senesced willows will be selectively pruned to open up the channel canopy and facilitate greater stream access. Willow or aspen cuttings will be stockpiled at “beaver start” locations to provide dam building materials. All work performed in and near the stream will be performed in a selective and judicious manner.

Extensive tailings reclamation and re-vegetation are expected to increase riparian form and function. The re-establishment of floodplain benches and beaver dams will 1) improve aquatic habitat conditions through “passive” restoration; 2) expand riparian community coverage; 3) decrease the flood hazard by increasing storage capacity and channel complexity; 4) increase groundwater exchange, and 5) increase usable habitat for fish and water birds during periods of extreme stream flow. Geo-referenced photopoints are possibly the most effective way to

document the effectiveness of this type of project. As part of the monitoring program, we will monument approximately 30 additional panoramic photopoints (in addition to the 20 photopoints already in place) to show before-after treatment changes and to track response for several years after the project.

## **TASKS**

### **Task 1 –Administration**

**(estimated \$3,200 total cost, \$0 funded by CWCB)**

#### Description of Task

Administer grant funds and coordinate completion of tasks

### **Task 2 –Permitting**

**(estimated \$1,500 total cost, \$0 funded by CWCB)**

#### Description of Task

Obtain necessary permits for in-stream construction work

### **Task 3 – Earthwork and reclamation**

**(estimated \$45,000 total cost, \$25,000 funded by CWCB)**

**3a: Construct floodplain benches**

**3b: Reshaping and grading dredge tailings**

**3c: Re-shaping and grading of overburden piles**

**3d: Revegetation**

#### Description of Task

3a: Remove dredge tailings from streamside areas to create low riparian benches and floodplain area along Tarryall Creek as designed

3b: Reshape and grade large areas of dredge tailings to create a smooth, undulating landscape as designed.

3c: Reshape and grade overburden piles as designed.

3d: Seed and mulch treated areas to establish vegetation.

#### Method/Procedure

3a: Areas along approximately 2000 ft of Tarryall Creek have been identified where floodplain benches could be constructed or enhanced. In these areas, we will employ earth-moving equipment to pull excess dredge tailings material away from the stream to cut a new lower streamside ground elevation. An initial rough cut will be followed by finish grading and adjustments as needed..

3b: Approximately 4 acres of dredge tailings have been identified for re-grading. We will employ earth-moving equipment to grade these tailings areas from their existing erratic state to a smooth, undulating landscape.

3c: Approximately 1 acre of overburden piles are identified for possible treatment. Select areas will be re-shaped and graded to create a smooth transition. Where possible, finer soil from these piles will be hauled onto bench or tailings areas to provide a soil cap.

3d: Revegetation will consist of seeding and mulching of the created riparian bench areas. Salvaged willow and aspen material from on site will be chipped to create mulch.

#### Deliverables

Approximately 2000 additional feet of Tarryall Creek that has associated riparian bench or floodplain elevation. Approximately 5 acres of re-shaped, graded, and reclaimed mining disturbance (dredge tailings or overburden).

### **Task 4 – Stream Channel Improvements**

**(estimated \$21,000 total cost, \$11,000 funded by CWCB)**

**4a: Design and layout specific channel treatments**

**4b: Construct in-stream treatments**

#### Description of Task

4a: Complete design specifics and layout of channel treatments for construction

4b: Construct channel treatments

#### Method/Procedure

4a: A layout of channel treatments will be completed using design concepts from the original proposal. Completion of the design will require documentation of existing conditions including channel surveys of the pre-project condition.

4b: Heavy equipment and hand labor will be employed to construct channel treatments as designed. Proposed features include enhanced bend, constriction, and impound pools, step features, and "beaver start" structures.

#### Deliverables

4a: Specific design drawings for channel treatments including a plan-form diagram showing the specific location of treatments.

4b: Improved in-stream habitat along approximately 4000 ft of channel, including about 12 enhanced pools, 6 step features, and 8 "beaver start" features.

### **Task 5 - Selective Vegetation Thinning**

**(estimated \$6,610 total cost, \$0 funded by CWCB)**

#### Description of Task

Clear overgrown vegetation from areas along the stream channel.

#### Method/Procedure

Supervised and trained sawyers and labor crews will selectively cut willows and other overgrown vegetation along the stream corridor. Material will be salvaged and stockpiled so that it can be chipped into mulch.

#### Deliverable

Approximately 4000 ft of stream length along Tarryall Creek cleared of overgrown vegetation, improved access and aesthetics.

**Task 6 - Trail Building and Access Improvements**  
**(estimated \$1,200 total cost, \$0 funded CWCB)**

Description of Task

Construct paths through the reclaimed tailings, from the tailings down to the stream, and from the tailings south to the grassy meadow

**Task 7 - Monitoring and Reporting**  
**(estimated \$5,640 total cost, \$4,000 funded by CWCB)**

Description of Task

Monitoring and reporting to document pre-project, as-built, and one-year-post construction conditions.

Method/Procedure

Field surveys to complete channel surveys, to quantify specific in-stream habitat parameters, and to take repeated georeferenced photopoints. Compilation of two reports.

Deliverable

One progress report to CWCB and other funding partners documenting pre-project condition and as-built condition following construction, and one final report documenting conditions one season after construction. Reports will be formatted to meet CWCB reporting guidelines (see below).

**REPORTING AND FINAL DELIVERABLE**

Reporting: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of the executed contract. The progress report shall describe the completion or partial completion of the tasks identified in the statement of work including a description of any major issues that have occurred and any corrective action taken to address these issues.

Final Deliverable: At completion of the project, the applicant shall provide the CWCB a final report that summarizes the project and documents how the project was completed. This report will contain photographs, design drawings, data summaries, and narrative descriptions.

WATER CONSERVATION BOARD  
1313 SHERMAN STREET, ROOM 721  
DENVER, CO 80203

DATE: 06-01-12

**IMPORTANT**

The PO# and Line # must  
appear on all invoices,  
packing slips, cartons  
and correspondence



**PURCHASE  
ORDER**  
STATE OF COLORADO

Buyer: ALLAN SMITH  
Phone Number: 303-866-3292  
Agency Contact: STEVEN SHULL  
Phone Number: 303 866 3441

ACC: 05-31-12

P.O. # OE PDA 12000000086 Page# 01

State Award #

FEIN 840866211 Phone: 303-988-2373

Vendor Contact:

Purchase Requisition #:

V  
E  
N  
D  
O  
R  
COLORADO OPEN LANDS  
274 UNION BLVD SUITE 320  
LAKEWOOD CO 80228

BID #

**Invoice in Triplicate**

To: DIVISION OF WATER CONSERVATION  
1313 SHERMAN STREET, ROOM 721  
DENVER, CO 80203

**Payment will be made by this agency**

Ship To: DIVISION OF WATER CONSERVATION  
1313 SHERMAN STREET, ROOM 721  
DENVER, CO 80203

Delivery/Installation Date: 09-30-13

F.O.B. DESTINATION STATE PAYS NO FREIGHT

**INSTRUCTIONS TO VENDOR:**

1. If for any reason, delivery of this order is delayed beyond the delivery/installation date shown, please notify the agency contact named at the top left. (Right of cancellation is reserved in instances in which timely delivery is not made.)
2. All chemicals, equipment and materials must conform to the standards required by OSHA.
3. NOTE: Additional terms and conditions on reverse side.

**SPECIAL INSTRUCTIONS:**

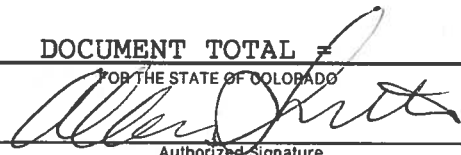
LINE ITEM	COMMODITY/ITEM CODE	UNIT OF MEASUREMENT	QUANTITY	UNIT COST	TOTAL ITEM COST
001	91843000000				\$40,000.00
	WATERSHED GRANT-TARRYALL MEADOW RANCH WATERSHED RECLAMATION & HABITAT ENHANCEMENT PROJ. PER SOW. CMS#45304.				

DOCUMENT TOTAL = \$40,000.00

THIS PO IS ISSUED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS  
This PO is effective on the date signed by the authorized individual.

EPSPO PAA

FOR THE STATE OF COLORADO



Authorized Signature

6/1/12  
Date

Chris Sturm  
Colorado Water Conservation Board  
1580 Logan Street, Suite 200  
Denver, CO 80203

September 24, 2012  
INVOICE #1

TARRYALL MEADOW RANCH WATERSHED RECLAMATION AND HABITAT  
ENHANCEMENT PROJECT  
P.O. # OE PDA 12000000086

Work Product	Percent Complete	Total Requested
<i>Task 1: Project Administration</i>	90%	\$0
<i>Task 2: Permitting</i>	100%	\$0
<i>Task 3: Earthwork and Reclamation</i>	100%	\$25,000
<i>Task 4: Stream Channel Improvements</i>	100%	\$11,000
<i>Task 5: Selective Vegetation Trimming</i>	100%	\$0
<i>Task 6: Trail Building/Access Improvements</i>	100%	\$0
<i>Task 7: Monitoring and Reporting</i>	0%	\$0
	Totals	<b>\$36,000</b>

Service rendered for the period June 1, 2012 to September 15, 2012

Total Purchase Order: \$40,000  
Billed to Date: \$36,000  
Total Remaining: \$4,000

OK to pay 10/15/12  
Chris (Chris Sturm)

Questions regarding the invoice should be addressed to Dieter Erdmann (303-988-2373 x217)

Please remit to:  
Colorado Open Lands  
Attn: Dieter Erdmann  
274 Union Blvd. Suite 320  
Lakewood, CO 80228

OK  
Kevin J. Hume  
10/16/12

**FINAL**

Chris Sturm  
Colorado Water Conservation Board  
1580 Logan Street, Suite 200  
Denver, CO 80203

January 15, 2015  
INVOICE #2

TARRYALL MEADOW RANCH WATERSHED RECLAMATION AND HABITAT  
ENHANCEMENT PROJECT  
P.O. # OE PDA 12000000086

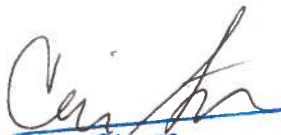

Work Product	Percent Complete	Total Requested
<i>Task 1: Project Administration</i>	100%	\$3,200
<i>Task 2: Permitting</i>	100%	\$0
<i>Task 3: Earthwork and Reclamation</i>	100%	\$0
<i>Task 4: Stream Channel Improvements</i>	100%	\$0
<i>Task 5: Selective Vegetation Trimming</i>	100%	\$0
<i>Task 6: Trail Building/Access Improvements</i>	100%	\$0
<i>Task 7: Monitoring and Reporting</i>	100%	\$800
	Totals	<b>\$4,000</b>

Service rendered for the period September 15, 2012- December 31<sup>st</sup>, 2014

Total Purchase Order:       \$4,000  
Billed to Date:               \$40,000  
Total Remaining:               \$0

Questions regarding the invoice should be addressed to Cheryl Cufre (303-988-2373 x219)

Please remit to:  
Colorado Open Lands  
Attn: Cheryl Cufre  
355 S. Teller St. Suite 210  
Lakewood, CO 80226

  
**Chris Sturm**  
**OK to Pay**  
  
1/20/15  
Date