STATE OF COLORADO

Colorado Water Conservation Board
Department of Natural Resources
1580 Logan Street, Suite 600
Denver, Colorado 80203
Phone: (303) 866-3441
Fax: (303) 894-2578
www.cwcb.state.co.us

December 12, 2013

Mr. Brice Lee, President
La Plata Water Conservancy District
1362 County Road 126
Hesperus, CO 81326

RE: Amendment Request for Supplemental Funding - WSRA Project La Plata River Water Resources Operations Model

Dear Brice:

This letter is to inform you that the amendment contract reflecting the supplemental funding to assist in the La Plata River Water Resources Operations Model was signed on December 10, 2013.

With the executed amended contract, you are now able to continue with the project and invoice the State of Colorado for cost incurred through March 31, 2014. Please reference contract number C150477 and project name on all correspondence sent to CWCB.

Please send your invoices directly to me. Upon receipt of your invoice(s), the State of Colorado will provide payment no later than 45 days. I wish you much success in your project.

If you have any questions or concerns regarding the project, please contact Craig Godbout at (303) 866-3441 ext 3210.

Sincerely,

//s//

Dori Vigil, Program Assistant II
Colorado Water Conservation Board
Water Supply Planning Section
1580 Logan Street, Suite 200
Denver CO 80203
(303) 866-3441 x3250
dori.vigil@state.co.us

CONTRACT AMENDMENT

Amendment #3 C150477	Original Contract CMS # 30617	Amendment CMS # 63201

1) PARTIES

This Amendment to the above-referenced Original Contract (hereinafter called the Contract) is entered into by and between La Plata Water Conservancy District (hereinafter called "Contractor"), and the STATE OF COLORADO (hereinafter called the "State") acting by and through the Department of Natural Resources, Colorado Water Conservation Board, (hereinafter called the "CWCB").

2) EFFECTIVE DATE AND ENFORCEABILITY

This Amendment shall not be effective or enforceable until it is approved and signed by the Colorado State Controller or designee (hereinafter called the "Effective Date"), but shall be effective and enforceable thereafter in accordance with its provisions. The State shall not be liable to pay or reimburse Contractor for any performance hereunder, including, but not limited to costs or expenses incurred, or be bound by any provision hereof prior to the Effective Date.

3) FACTUAL RECITALS

The Parties entered into the Contract for/to the La Plata River Water Resources Operations Model in the Southwest Basin.

4) CONSIDERATION

Consideration for this Amendment consists of the payments to be made hereunder and the obligations, promises, and agreements herein set forth.

5) LIMITS OF EFFECT

This Amendment is incorporated by reference into the Contract, and the Contract and all prior amendments thereto, if any, remain in full force and effect except as specifically modified herein.

6) MODIFICATIONS.

The Contract and all prior amendments thereto, if any, are modified as follows:

a. 5. TERM and EARLY TERMINATION is amended to read as follows: "The Parties respective performance under this Grant shall terminate on March 31, 2014 unless sooner terminated or further extended as specified elsewhere herein.

b. 6.a. Completion: Grantee shall complete the Work and its other obligations as described herein and in the **Exhibit A** on or before March 31, 2014. The State shall not be liable to compensate Grantee for any Work performed prior to the Effective Date or after the termination of this Grant.

c. 7.a. Maximum Amount: The maximum amount payable under this Grant to Grantee by the State is $155,749, as determined by the State from available funds. Grantee agrees to provide any additional funds required for the successful completion of the Work. Payments to Grantee are limited to the unpaid obligated balance of the Grant as set forth in **Exhibit A**. The maximum amount payble by the State to Grantee during each State fiscal year of this Grant shall be:

$148,823 in FY2011
$148,823 in FY2012, minus any funds expended in FY2011
$148,823 in FY2013, minus any funds expended in FY2011, FY2012
$155,749 in FY2014, minus any funds expended in FY2011, FY2012 and FY2013

7) EFFECTIVE DATE OF AMENDMENT

The effective date hereof is upon approval of the State Controller or their delegate.

8) ORDER OF PRECEDENCE

Except for the Special Provisions, in the event of any conflict, inconsistency, variance, or contradiction between the provisions of this Amendment and any of the provisions of the Contract, the provisions of this Amendment shall in all respects supersede, govern, and control. The most recent version of the Special Provisions incorporated into the Contract or any amendment shall always control other provisions in the Contract or any amendments.

9) AVAILABLE FUNDS

Financial obligations of the state payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted, or otherwise made available.

CMS#63201

THE PARTIES HERETO HAVE EXECUTED THIS AMENDMENT

*** Persons signing for Contractor hereby swear and affirm that they are authorized to act on Contractor's behalf and acknowledge that the State is relying on their representations to that effect.**

CONTRACTOR	STATE OF COLORADO
La Plata Water Conservancy District	**John W. Hickenlooper, GOVERNOR**
	Mike King, Department of Natural Resources
By: Brice Lee	
Title: President	
*Signature	By: Rebecca Mitchell
	By: Rebecca Mitchell, Section Chief, Water Supply Planning Section CWCB
Date: 11/15/13	Date: 11/22/13

ALL CONTRACTS REQUIRE APPROVAL BY THE STATE CONTROLLER

CRS §24-30-202 requires the State Controller to approve all State Contracts. This Contract is not valid until signed and dated below by the State Controller or delegate. Contractor is not authorized to begin performance until such time. If Contractor begins performing prior thereto, the State of Colorado is not obligated to pay Contractor for such performance or for any goods and/or services provided hereunder.

STATE CONTROLLER
Robert Jaros, CPA, MBA, JD

By: Susan Borup

Name and Title: Susan Borup, DNR Controller

Date: 12/10/13

Exhibit A, Revised 09/03/2013

Statement of Work

WATER ACTIVITY NAME – La Plata River Water Resources Operations Model

GRANT RECIPIENT – La Plata Water Conservancy District

FUNDING SOURCE – Statewide Water Supply Reserve Account

INTRODUCTION AND BACKGROUND

The La Plata River Water Resources Operations Model will be a robust and accurate baseline model for the La Plata River. The model will integrate groundwater and surface water and provide a invaluable tool for water users and the Office of the State Engineer (SEO) to use to optimize water resources planning with the basin.

The Long Hollow Reservoir (LHR) will be built near the state line, in order to improve compliance with the La Plata River Compact and optimize beneficial use of water in Colorado (see Figure 1). By allowing Colorado's Compact delivery obligations to be met from the reservoir releases rather than suffer the transportation losses associated with delivery in the River channel, La Plata Water Conservancy District will be able to operate upstream exchange to ditches otherwise called out by the Compact. The proposed project will develop a model and methods for determining the most efficient and effective means for La Plata River operations. This study will take into account the new conditions presented by the operations of the LHR Compact Pool as well as LHR exchange water. The proposed study will benefit irrigators, the State, and SEO while meeting environmental and Compact requirements.

OBJECTIVES

It is expected that the proposed model will:

1) Allow the SEO to evaluate alternative Compact compliance delivery conduits and assess any impact on water users.

2) Allow LPWCD to assess, optimize and account for LHR operations including reservoir filling (whether directly or by groundwater recharge), account for and optimize the anticipated upstream exchange, and evaluate alternative reservoir operations regimes.

3) Quantify exchange water by ditch and develop an Allocation Plan for the exchange water in LHR that is adopted by ditch companies and LPWCD.

4) Allow water users and developers to evaluate alternative water development strategies in manner that does not injure existing water users.

TASKS

Task 1: Refine and Improve the baseline La Plata River Model in StateMod

Description:
The study will begin by refining and improving the existing Colorado Decision Support System's StateMod model for the La Plata River basin in Colorado. Additional data and nodes will be added, updated and refined. Groundwater return flows and/or depletions will be added to the model. All of the additional inputs will be used to run the model with historic diversion records in order to establish a more robust baseline condition for the La Plata River.

Method:

- Review and enhance irrigated acreage assessment by ditch and/or by water rights
- Refine inputs for irrigation and reservoir operations using input from irrigators, reservoir operators, commissioners and records
- Update datasets with current records from HydroBase, CDSS, USGS gages, WRCC, groundwater field measurements and other sources
- Obtain parameters for modeling groundwater return flows from irrigation and recharge; Hydrographs of wells and groundwater studies will be a source of inputs for model
- Develop more nodes to include input for tributaries and groundwater return flows
- Refine assumptions on Compact calls
- Develop historical model data set and documentation
- Run and calibrate the baseline model, including simulating split river conditions

Deliverables:

- Documentation of all input parameters and assumptions
  - All files for the DMIs TSTool and State DMI used to create the historical model data set.
  - Narrative, geographic and other documentation of input parameters
- StateMod model for La Plata River including LHR
  - Includes groundwater return flows modeling
  - Includes simulation of split river conditions
  - Tabulation of monthly diversions, broken down by ditch and by direct vs. exchange diversions, for all basin diversions included in the model
- All information will be made available to SEO, CWCB and others for future use and updates

2013 UPDATE:
Task 1a: Correction of StateMod Program

Two code errors were discovered in the StateMod Model, which were associated with the type 4 operating rule. These errors were corrected but accrued additional costs unforeseen in the original budget.

Task 2: Analyze means of administering the La Plata River and LHR

Description:
Several aspects of river operations and accounting will be analyzed using the improved model, and recommendations for accounting and administration will be made based on results.

Method:
LHR predictive model

- Using the historical data set, revise demands, water rights, return flows and operations to reflect current conditions for the model period (aka calibrate model)
- Model futile calls and operations of Compact Pool
- Quantification of exchange water associated with LHR District Pool releases
- Appropriate allocation of exchange water to ditches based on historical data
- Means of accounting for direct flow diversions and exchange water diversions

Alternate conveyance feasibility and associated impacts

- Develop a baseline of operations and streamflow during late-season call periods when Compact Pool is empty
- Model alternate conveyance of Compact water via up to three irrigation ditches
- Assess the potential groundwater recharge and/or depletions related to baseline and alternative conveyance methods

Deliverables:

- StateMod model for operations of LHR and quantification of exchange water
  - All associated documentation
- Findings and recommendations for operations of Compact Pool
- Findings and recommendations for quantification and allocation of exchange water
- Findings and recommendations for potential means of alternative conveyance of late-season Compact water

<u>Task 3: Collaboration amongst LPWCD, SEO and water users</u>

Description:
Personnel working on the model will meet with LPWCD, water users and SEO staff to obtain information and buy-in on the operating parameters used in the model. This will include criteria for administration of the Compact Pool, groundwater administration based on recharge, and strategies for exchange water accounting. Meetings throughout the study period will help to support that the findings of the model being adopted and implemented by the SEO.

Method:
Meetings may occur in Denver, Durango and/or on-site, as necessary, and will be coordinated by the project manager.

Deliverables:

- Documented meetings between modelers, LPWCD, SEO and/or water users
- Guidance from SEO on development of model

<u>Task 4: Develop Allocation Plan</u>

Description:
The exchange water quantified in Task 2 will be used to develop an Allocation Plan for the District Pool. The plan will be used to reach agreements with all participating ditches anticipated to receive exchange water. The agreements with ditches and associated payments for exchange water will provide the capital for operations and maintenance of LHR.

Method:

An Allocation Plan will be developed based on:

- Quantification of exchange water by the model using historical data (see Task 2)
- Negotiations with Ditches
- Discussions on model parameters and/or accuracy with modelers
- Maintaining compliance with environmental requirements, Compact Pool requirements and La Plata River Compact

Deliverables:

- A summary of the Allocation Plan will be provided to the CWCB describing the overall agreements and value of exchange water
- A detailed Allocation Plan will be prepared for LPWCD for use in operations of LHR

Task 5: Documentation, Reporting and Recommendations

Description:
Bi-annual reporting will be completed per CWCB requirements. A summary report will be prepared and made available to the CWCB, SEO and public.

Method:
A summary report will be prepared, including the following:

- Documentation of assumptions and data used in the model to facilitate future use and updates of the model
- Results and discussion of the analyses on administration and accounting
- Summary of Allocation Plan
- Recommendations and tools for administration (such as spreadsheets and models)
- Preliminary recommendations on alternative conveyance methods

Deliverables:

- Status reports to the CWCB on the progress of the project, obstacles and budget will be provided bi-annually
- Final report for the project
  - Report will include spreadsheets, graphs, mapping, model inputs and/or other formats to best represent the study methods and results
  - A draft report will be prepared; LPWCD and the SEO will have the opportunity to make comments and revisions
  - A final report will be provided in hard copy and electronic format
  - Report will be made available to LPWCD, CWCB, SEO and other entities as appropriate

REPORTING AND FINAL DELIVERABLE

See Task 4 above.

BUDGET, Revised September 3, 2013

Table 1. Total Costs				
Task	Labor Cost	Direct Cost	Total Costs	In-Kind
	(1)	(2)	(3)	(4)
1. Refine and Improve the baseline La Plata River Model in StateMod	$34,950	$3,275	**$38,225**	LPWCD and water users
2. Model scenarios for La Plata River Operations and Exchange Water Allocation	$20,098	$1,860	**$21,957**	LPWCD and water users
3. Collaboration with stakeholders and model refinement	$27,625	$2,013	**$29,638**	LPWCD, SEO, water users
4. Allocation Plan	$45,293	$3,099	**$48,392**	LPWCD and water users
5. Documentation, Reporting and Recommendations	$37,114	$3,261	**$40,375**	LPWCD
Total Costs	**$165,080**	**$13,508**	$178,588	-
Statewide Grant		**$148,823**		-
Correction of StateMod Code (Additional Statewide Grant Funds)		**$6,926**	$155,749	
LPWCD Matching Funds (20% of Statewide)			**$22,838**	-

Notes:

1) Labor costs shown in Table 1a (below).

2) Direct Costs equal 10% of labor costs (excluding Legal). Direct costs include mileage, copies, software, travel time, etc.

3) Total Project Cost equals sum of columns 1 and 2.

4) In-kind contributions consist of time from LPWCD Board, Ditch Companies, SEO and other stakeholders. These contributions are not quantified or counted as matching funds.

Table 1a. Budget per Personnel				
Task	Prof Staff	Tech & Admin	Legal	Total
	(1)	(2)	(3)	(4)
1. Baseline Modeling	$30,750	$2,000	$2,200	**$34,950**
2. Modeling Scenarios	$15,598	$3,000	$1,500	**$20,098**
3. Collaboration & Model Refinement	$18,125	$2,000	$7,500	**$27,625**
4. Allocation Plan	$27,993	$3,000	$14,300	**$45,293**
5. Reporting	$26,614	$6,000	$4,500	**$37,114**
Total Costs	**$119,080**	**$16,000**	**$30,000**	**$165,080**

Notes:

1) Professional staff includes project manager, modeling experts and support staff. Rates range from $65/hr to $175/hr.

2) Technicians and Adminstrative Assistant rates range from $44/hr to $60/hr.

3) Legal fees are a lump sum of $30,000 for the project and have been approximately allocated per task.

4) Equals sum of columns 1 through 3.

SCHEDULE
Revised September 3, 2013

WATER ACTIVITY NAME – La Plata River Water Resources Operations Model

GRANT RECIPIENT – La Plata Water Conservancy District

Task	Start Date	Finish Date
1. Refine and improve the baseline La Plata River Model in StateMod Program.	July 22, 2011	February 29, 2012
1a. Correction of StateMod Program.		
2. Analyze means of administering the La Plata River and LHR.	Upon completion of Task 1	October 1, 2013
3. Collaboration with stakeholders and model refinement.		
4. Allocation Plan.	Upon completion of Tasks 2 and 3	November 1, 2013
5. Documentation, reporting, and recommendations.	Upon completion of Tasks 2 and 3	March 1, 2014
Total Project	**July 22, 2011**	**March 1, 2014**