The South Platte Basin Roundtable

C/O Board of County Commissioners - 915 10th Street - P. O. Box 758 - Greeley CO 80632
Telephone: 970-336-7204 Fax: 970-352-0242

JAN 09
CWCB mtg

October 23, 2008

Mr. Todd Doherty
Intrastate Water Management and Development Section
Colorado Water Conservation Board
1580 Logan Street, Suite 600
Denver, CO 80203

Subject: Lost Creek Ground Water Management District
Water Supply Reserve Account Application

Dear Mr. Doherty:

At the October 14, 2008 meeting of the South Platte Roundtable meeting, the members were given a presentation by the Lost Creek Ground Water Management District regarding their Water Supply Reserve Account (WSRA) application for an aquifer recharge and storage study. The name of the water activity/project is **Lost Creek Basin – Aquifer Recharge and Storage Study**. The applicant had submitted a completed copy of their WSRA application, scope of work, and proposed budget prior to the meeting for review by the membership in accordance with our submittal guidelines. The applicant is requesting $80,000.00 from the basin account.

Consideration of this request was addressed at this meeting. A motion for approval of the application was made and seconded, and the members voted unanimously to award the applicant (the Lost Creek Ground Water Management District) a grant in the amount of $80,000.00 for this study from the South Platte Basin Roundtable account. We understand this application will be considered at the January 2009 meeting of the Colorado Water Conservation Board. The South Platte Basin Roundtable highly recommends approval of this application by the Board.

Sincerely,

Bill Jerke
Chairman

October 23, 2008

Mr. Todd Doherty
Intrastate Water Management and Development Section
Colorado Water Conservation Board
1580 Logan Street, Suite 600
Denver, CO 80203

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Dear Mr. Doherty:

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Sincerely,

Rod Kuharich
Chairman

COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT
2007-2008 GRANT APPLICATION FORM

Lost Creek Basin – Aquifer Recharge and Storage Study	Metro & South Platte River Basin
Name of Water Activity/Project	**River Basin Location**

Amount of Funds Requested	Please Check Applicable Box		Approval Letter Signed By Roundtable Chair and Description of Results of Evaluation and Approval Process
Metro - $80,000. South Platte - $80,000.	X	Basin Account	Yes
		Statewide Account	No

*** For the Basin Account, the Application Deadline is 60 Days Prior to the Bimonthly CWCB meeting. The CWCB meetings are posted at Hwww.cwcb.state.co.usH and are generally the third week of the month.**

*** For the Statewide Account, the Application Deadline is 60 Days Prior to the March and September CWCB Board Meetings.**

* In completing the application you may attach additional sheets if the form does not provide adequate space. If additional sheets are attached please be sure to reference the section number of the application that you are addressing (i.e., A.1. etc.).

Instructions: This application form must be submitted in electronic format (Microsoft Word or Original PDF are preferred). The application can be emailed or a disc can be mailed to the address at the end of the application form. The Water Supply Reserve Account Criteria and Guidelines can be found at Hhttp://cwcb.state.co.us/IWMD/H. **The criteria and guidelines should be reviewed and followed when completing this application**. You may attach additional sheets as necessary to fully answer any question, or to provide additional information that you feel would be helpful in evaluating this application. Include with your application a cover letter summarizing your request for a grant. If you have difficulty with any part of the application, contact Todd Doherty of the Intrastate Water Management and Development (Colorado Water Conservation Board) for assistance, at (303) 866-3441 ext.3210 or email Todd at Htodd.doherty@state.co.usH.

Generally, the applicant is also the prospective owner and sponsor of the proposed water activity. If this is not the case, contact the Todd Doherty before completing this application.

Water Supply Reserve Account – Grant Application Form
Form Revised May 2007

Part A. - Description of the Applicant (Project Sponsor or Owner);

1. Applicant Name(s): Lost Creek Groundwater Management District

Mailing address: 50005 E. 120th Ave
Bennett, Colorado 80102

Taxpayer ID#: Email address: sauter@esrta.com

Phone Numbers: Business:
Home: 303-644-3314
Fax:

2. Person to contact regarding this application if different from above:

Name: Thomas M. Sauter

Position/Title General Manager

3. Provide a brief description of your organization below: see "Description of Applicant" in Part 2 of Criteria and Guidance for required information.

The Lost Creek Groundwater Management District is an organization comprised of seven (7) diverse divisions located in the counties of Weld, Adams, and Arapahoe in the State of Colorado. It was formed on May 11, 1973 and is governed by seven (7) directors elected to protect the integrity of all appropriations of the alluvial aquifer and to providing reasonable and knowledgeable management of a water resource that supports agricultural as well as municipal users. It is a district that is also committed to the pursuit of reliable and considerate study of the Lost Creek alluvial aquifer system in order to safeguard the groundwater resources, found within the Lost Creek Basin, for future generations.

This water entity operates on property taxes ranging from $50,000 to $60,000 per year with a contract employee acting as general manager. Water issues that are affecting this water district are now requiring in-depth study and need to be explored for the preservation and maintenance of the alluvial aquifer.

It is with great hope that this can be accomplished with additional financial support and guidance.

4. the Contracting Entity is different then the Applicant (Project Sponsor or Owner) please describe the Contracting Entity here.

Part B. - Description of the Water Activity – Please Refer to Criteria and Guidance Document for Eligibly Requirements

1. Name of water activity/project:

Lost Creek Basin – Aquifer Recharge and Storage Study

What is the purpose of this grant application?

[X] Environmental compliance and feasibility study

[ ] Technical Assistance regarding permitting, feasibility studies, and environmental compliance

[X] Studies or analysis of structural, nonstructural, consumptive, nonconsumptive water needs, projects

Study or Analysis of:

- [ ] Structural project or activity
- [X] Nonstructural project or activity
- [X] Consumptive project or activity
- [ ] Nonconsumptive project or activity

[ ] Structural and/ or nonstructural water project or activity

2. Describe how the water activity meets these **Threshold Criteria.**

1. The water activity meets the eligibility requirements outlined in Part 2 of the Criteria and Guidelines.

   This water activity meets the eligibility requirement by executing a feasibility study to evaluate and refine our understanding of the hydrogeology of the alluvial aquifer system in the Lost Creek Designated Ground Water Basin for the purposes of assessing the potential for aquifer recharge and storage implementation. This basin is within the South Platte River basin, the largest "gap" area in the State of Colorado. This study will provide crucial information to assist water rights holders and the management district in water resource management decision making.

2. The water activity is consistent with Section 37-75-102 Colorado Revised Statutes. The requirements/language from the statute is provided in Part 3 of the Criteria and Guidelines.

   This water activity is consistent with CRS Section 37-75-102 as it fully protects existing water rights and will not impact Colorado water law. The study's focus is to evaluate the aquifer recharge and storage potential of the Lost Creek basin and identify select sites or areas for pilot project implementation.

3. The water activity underwent an evaluation and approval process and was approved by the Basin Roundtable (BRT) and the application includes a description of the results of the BRTs evaluation and approval of the activity. At a minimum, the description must include the level of agreement reached by the roundtable, including any minority opinion(s) if there was not general agreement for the activity. The description must also include reasons why general agreement was not reached (if it was not), including who opposed the activity and why they opposed it. Note- If this information is included in the letter from the roundtable chair simply reference that letter.

   The South Platte Basin Roundtable evaluated and approved this application at their October 14, 2008 meeting. The applicant had submitted a completed copy of their WSRA application, scope of work, and proposed budget prior to the meeting for review by the membership in accordance with our submittal guidelines. A motion for approval of the application was made and seconded, and the members voted unanimously to award the applicant (the Lost Creek Ground Water Management District) a grant in the amount of $80,000.00 for this study from the South Platte Basin Roundtable account. We understand this application will be considered at the January 2009 meeting of the Colorado Water Conservation Board. The South Platte Basin Roundtable highly recommends approval of this application by the Board.

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accordance with our submittal guidelines. A motion for approval of the application was made and seconded, and the members voted to award the applicant (the Lost Creek Ground Water Management District) a grant in the amount of $80,000.00 for this study from the Metro Roundtable account with one dissenting vote by Mark Pifher of Aurora Water. We understand this application will be considered at the January 2009 meeting of the Colorado Water Conservation Board. The Metro Roundtable highly recommends approval of this application by the Board.

Letters from the roundtable chairmen regarding the level of agreement and opposing statements, if any, were submitted directly to Mr. Todd Doherty.

4. The water activity meets the provisions of Section 37-75-104(2), Colorado Revised Statutes. The requirements/language from the statute is provided in Part 3 of the Criteria and Guidelines.

This water activity has direct application to several of SWSI's major findings and recommendations. These include:

- A 22% gap between projected demands and projected supplies exist in the South Platte River basin equating to over 90,000 acre-feet.
- Competition for water in this basin is fierce.
- Supplies are not necessarily where demands are
- South Metro Denver's reliance on non-renewable groundwater is still an unresolved issue.
- Any M&I project bringing water to the Front Range Urban corridor will require additional storage.
- Need for a common understanding of future water supplies available for development in each basin.

The results of this study will facilitate our understanding of the available groundwater resources in the Lost Creek basin. This new or enhanced knowledge may indicate where additional water supplies exist to help address the gap and reduce competition. Proximity of this basin to the Metro area, affords an opportunity for infrastructure development and sharing to bridge areas of need with potential supplies or storage opportunities. This study will provide a greater common understanding of available groundwater supplies in this basin, and the relationship of the bedrock Denver Basin aquifers to the overlying alluvium.

This study will complement and augment information currently being collected by the CWCB for the South Platte Decision Support System. This water project also helps meet the IBCC Vision Process water supply strategy of integrating management of groundwater and surface water through aquifer storage and recovery.

3. For Applications that include a request for funds from the Statewide Account, describe how the water activity meets the **Evaluation Criteria**. See Part 3 of Criteria and Guidelines.

   This section is not applicable as no funds are being requested from the Statewide Account.

4. Please provide an overview of the water project or activity to be funded including – type of activity, statement of what the activity is intended to accomplish, the need for the activity, the problems and opportunities to be addressed, expectations of the participants, why the activity is important, the service area or geographic location, and any relevant issues etc. Please include any relevant TABOR issues that may affect the Contracting Entity. Please refer to Part 2 of Criteria and Guidance document for additional detail on information to include.

Purpose

The focus of this feasibility study is to evaluate and refine the existing knowledge of the hydrogeology of the alluvial aquifer system in the Lost Creek Designated Ground Water Basin for the purposes of assessing the potential for aquifer recharge and storage implementation. Geographic, geologic, hydrologic, water quality, and infrastructure data will be collected and analyzed to evaluate the recharge potential, storage capacity, conveyance, and water quality characteristics in the study area. The scope of work is tailored to identify select sites or sub-basin areas for potential pilot project implementation.

Objectives

The objectives of this study are to compile, collect, and analyze hydrologic, aquifer property and water quality data to characterize the ground water resources in the alluvial aquifer and evaluate geographic, infrastructure, land ownership/use information for the purposes of assessing the potential for aquifer recharge and storage implementation. To address the needs of in-basin water rights holders and assist the management district in their decision-making processes, we propose to:

1. Characterize the configuration and extent of the alluvial aquifer within the Lost Creek basin;
2. Compile and present current and historic ground-water levels and water level trends;
3. Characterize the amount of natural recharge and estimate the available storage capacity in the alluvial aquifer;
4. Determine hydraulic and storage properties of the alluvial aquifer;
5. Present the spatial relationship with the underlying Denver Basin bedrock aquifers;
6. Characterize the land use and ownership; and
7. Identify the existing water delivery infrastructure.

Need

The drought of 2002 clearly emphasized the importance of groundwater in Colorado's water supply strategy and the need for additional storage. Storage of water underground has many benefits over surface water storage such as no evaporative losses, less security threat, lower vulnerability of contamination, less permitting hurdles, and significantly lower implementation costs, among other. Any of the various strategies to bring water to the Front Range Urban corridor will need temporary storage capacity. Aquifer storage can meet that need.

Importance

Given the paucity of flowing surface water streams, groundwater is the primary source of water supply within the Lost Creek Designated Basin. The alluvial aquifer meets the water supply demands for domestic, stock, irrigation, commercial and municipal uses. Declining water tables from increased

demands and loss of water in storage due to export out of the basin will diminish current productivity and hamper future development. Recharge of the aquifer and storage of water provides for sustainable development of ground water resources in this basin, and opportunities to extract stored water in times of need.

Geographic location

The Lost Creek basin is on the eastern plains with its headwaters just east of Denver International Airport. Lost Creek is between Box Elder and Kiowa Creek and is contained within Arapahoe, Adams, and Weld County. A map of the study area is attached.

5. Please summarize the proposed scope of work. Please refer to Part 2 of the Criteria and Guidance document for detailed requirements. On the following page there is an example format for the Scope of Work. You can use the example format or your own format, provided that comparable information is included.

The scope of work should outline by task how the water activity will be accomplished. It is important that the scope of work detail the specific steps, activities/procedures that will be followed to accomplish the water activity and the specific products/deliverables that will be accomplished. The scope of work should include but not be limited to: task description, key personnel, budget, schedule and deliverables and the final report/project documentation upon completion of the water activity.

See attached scope of work and budget.

Suggested Format for Scope of Work

The scope of work will form the basis for the contract between the Applicant and the State of Colorado. In short, the Applicant is agreeing to undertake the work for the compensation outlined in the scope of work and budget, and in return, the State of Colorado is receiving the deliverables/products specified. Summarized below is a suggested format for the Scope of Work.

I. Task 1

- Description of task:
- Method or procedure that will be used or followed to accomplish the task and identify who will undertake the task:
- Description of the major deliverables/products that will be produced upon successful completion of the task:

Task 2 (Repeat the above format for each task)

II. Personnel

Provide a list of key water activity/project participants and their qualifications to accomplish the water activity/project. If specific individuals or firms have not yet been identified indicate the types of expertise that will be sought (i.e. professional engineering firm, registered land surveyor, aquatic biologist etc.).

III. Budget

A detailed budget by task, which includes the level of effort (hours) and rates. Any unit costs or other direct costs must be specified (i.e. mileage, number of miles, dollars per mile). For an example budget format – See Attachment 1 at the end of this application.

If applicable, the budget should also detail the source and amount of matching funds and/or in-kind contributions, if any. If applicable, the budget should also include any other outstanding or previously applied for funding that also supports the water activity:

IV. Schedule

A detailed project schedule including key milestones and the dates these are expected to be completed.

NOTE: Costs incurred prior to execution of a contract or purchase order are not subject to reimbursement.

6. Water Availability and Sustainability – this information is needed to assess the viability and effectiveness of the water project or activity. Please provide a description of each water supply source to be utilized for, or the water body to be affected by, the water activity. For water supply sources being utilized, describe its location, yield, extent of development, and water right status. For water bodies being affected, describe its location, extent of development, and the expected effect of the water activity on the water body, in either case, the analysis should take into consideration a reasonable range of hydrologic variation.

   Water rights holders within the Lost Creek Designated Basin rely on groundwater supplies from the alluvial aquifer within the basin. Water level monitoring by the Colorado Division of Water Resources indicates that the water table is declining in some areas of the basin. Declining water levels result in reduced pumping capacity. Recharge of the aquifer will result in mitigating the water that was lost from storage, producing a sustainable development environment.

   The current canal and ditch system can bring water into the basin from the South Platte River, and recharge the aquifer when there is excess flow available. Treated wastewater is another option for source water for aquifer recharge.

   No surface water bodies will be affected by this water activity.

7. Please provide a brief narrative of any related or relevant previous studies.

In 2003, the Director of the Colorado Department of Natural Resources requested that the Colorado Geological Survey conduct a statewide assessment study of artificial recharge potential. In addition to reviewing recharge technologies and existing projects, that study ranked the best aquifers in Colorado for the artificial recharge potential of ground water based primarily on their hydrogeological suitability. The South Platte River alluvium received the highest ranking of the unconsolidated alluvial aquifers. The study was published as Environmental Geology Series No. 13 with the following reference:

Topper, Ralf, Barkmann, P.E. Bird, D.R., and Sares, M.A., 2004, Artificial recharge of ground water in Colorado – A Statewide Assessment: Colorado Geological Survey, Environmental Geology 13, 94 p.

In 2006, the Colorado legislature passed Senate Bill 06-193 which directed the Colorado Water Conservation Board to conduct a study of potential underground water storage areas in the South Platte and Arkansas River Basins. Aquifers within those basins were evaluated for 10 criteria representing hydrogeologic, environmental, and implementation considerations. The two highest scoring subregions in the South Platte River basin were Lower Lost Creek and Upper Lost Creek. The estimated storage capacity in the Lost Creek basin was over 1.4 million acre-feet. The citation for this report is:

Colorado Water Conservation Board, 2007, SB06-193 Underground water storage study: Colorado Water Conservation Board, prepared by CDM.

8. Additional Information – If you feel you would like to add any additional pertinent information please feel free to do so here.

The above statements are true to the best of my knowledge:

Signature of Applicant: Tom Sauter

Print Applicant's Name: Tom Sauter, General Manager, Lost Creek Management District

Project Title: Lost Creek Basin – Aquifer Recharge and Storage Study

Return this application to:

Mr. Todd Doherty
Intrastate Water Management and Development Section
COLORADO WATER CONSERVATION BOARD
1580 Logan Street, Suite 600
Denver, CO 80203

To submit applications by Email, send to: todd.doherty@state.co.us

Reference Information

The following information is available via the internet. The reference information provides additional detail and background information regarding these criteria and guidelines and water policy issues affecting our state.

Sample Contract and Purchase Order – http://cwcb.state.co.us/IWMD/RelatedInformation/ToolsResources/

Colorado Water Conservation Board Policies

Loan and Grant policies and information are available at – http://cwcb.state.co.us/Finance/

Water Supply Reserve Account Criteria and Guidelines –

Water Supply Reserve Account Criteria and Guidelines –
http://cwcb.state.co.us/IWMD/RelatedInformation/ToolsResources/

Interbasin Compact Committee and Basin Roundtables

Interbasin Compact Committee By-laws and Charter (under Helpful Links section) –
http://ibcc.state.co.us/Basins/IBCC/

Legislation

House Bill 05-1177 - Also known as the Water for the 21st Century Act –
http://cwcbweblink.state.co.us/DocView.aspx?id=105662&searchhandle=28318

House Bill 06-1400 – Adopted the Interbasin Compact Committee Charter –
http://cwcbweblink.state.co.us/DocView.aspx?id=21291&searchhandle=12911

Senate Bill 06-179 – Created the Water Supply Reserve Account –
http://cwcbweblink.state.co.us/DocView.aspx?id=21379&searchhandle=12911

Statewide Water Supply Initiative

General Information – http://cwcb.state.co.us/IWMD/

Phase 1 Report – http://cwcb.state.co.us/IWMD/SWSITechnicalResources/SWSIPhaseIReport/

Attachment 1

Sample Budget Table: Please note that this budget table is an example and will need to be adapted to fit each individual application. In the tables below please list the personnel by specialty/ expertise i.e. project manager, project engineer, etc. Also, tasks should correspond to the scope of work of your project and the number of tasks listed will vary accordingly.

Total Costs				
	Labor	Other Direct Costs	Matching Funds (If Applicable)	Total Project Costs
Task 1 - (Specify name of task)				
Task 2 -				
In-Kind Contributions				
Total Costs:				

1) Identify specific source and amount by task.

Example Titles

Example Project Personnel: Hourly Rate:	Project Manager	Project Engineer	Geologist	Scientist	Graphics/ Designer	Clerical		Total Costs
Task 1 -								
Task 2 -								
Total Hours:								
Cost:								

Other Direct Costs						
Item: Units: Unit Cost:	Copies No.	Materials	Equipment/ Supplies	Mileage Miles		Total
Task 1 -						
Task 2 -						
Total Units:						
Total Cost:						

In-Kind Contributions (If Applicable)				
Project Personnel: Hourly Rate:				Total
Task 1 -				
Task 2 -				
Total Hours:				
Total Cost:				

Lost Creek Basin Ground Water Study

3/7/08

R65W R64W R63W R62W R61W R60W

T5N T4N T3N T2N T1N T1S T2S T3S T4S T5S

Greeley

Riverside Reservoir

Jackson Lake Inlet

Monahan Lakes

Lord Reservoir

Prospect Reservoir

Horse Creek Reservoir

Milton Reservoir

Latham Reservoir

Weld County

Morgan County

Adams County

Arapahoe County

Denver County

DEN

Legend

- Lost Creek Management District
- Lost Creek Designated Basin
- Department of Water Resources monitoring well
- Mapped Quaternary alluvial aquifers (SPDSS)

1:250,000

0 2.5 5 10 15 Miles

A. Purpose

The focus of this feasibility study is to evaluate and refine the existing knowledge of the hydrogeology of the alluvial aquifer system in the Lost Creek Designated Ground Water Basin for the purposes of assessing the potential for aquifer recharge and storage implementation. Geographic, geologic, hydrologic, water quality, and infrastructure data will be collected and analyzed to evaluate the recharge potential, storage capacity, conveyance, and water quality characteristics in the study area. The scope of work is tailored to identify select sites or sub-basin areas for potential pilot project implementation.

B. Objectives

The objectives of this study are to compile, collect, and analyze hydrologic, aquifer property and water quality data to characterize the ground water resources in the alluvial aquifer and evaluate geographic, infrastructure, land ownership/use information for the purposes of assessing the potential for aquifer recharge and storage implementation. To address the needs of in-basin water rights holders and assist the management district in their decision-making processes, we propose to:

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4. Determine hydraulic and storage properties of the alluvial aquifer;
5. Present the spatial relationship with the underlying Denver Basin bedrock aquifers;
6. Characterize the land use and ownership; and
7. Identify the existing water delivery infrastructure.

C. Approach

Anticipated activities are described below and consist of historical data collection, field work to acquire new data, technical analyses, mapping, and reporting. This information and data will be formatted and entered into a geodatabase to accommodate analysis and display in Geographic Information System (GIS) compatible software.

Task 1 - Historical Data Compilation and Site Characterization ($38,500)

- Conduct literature review
- Involve local experts
- Obtain water well permit records from the office of the state engineer
- Obtain water-level and well data from the USGS database
- Obtain oil & gas production data collected by the Oil & Gas Conservation Commission
- Obtain water resource data compiled for the South Platte Decision Support System
- Obtain climatological data
- Characterize the alluvial aquifer
- Obtain land use/ownership data from relevant county agencies

- Identify the existing water delivery infrastructure

Task 2 – Field Data Collection ($69,100)
A field study workplan will be developed to fill some of the data gaps identified in Task 1. The fieldwork will consist of drilling and constructing observation wells, geological and geophysical logging, sediment sample collection, conducting aquifer pump tests, and monitoring seasonal water levels. It is anticipated that existing wells would be accessible for conducting aquifer pump tests and monitoring water levels.

- Collect water quality samples
- Install new monitoring wells
- Conduct additional aquifer tests
- Water level monitoring

Task 3 – Data Analysis, Evaluation, and Mapping ($28,500)
The objective of this task is to:

- Characterize the hydrogeology of the alluvial aquifer
- Characterize the quality of the ground water
- Investigate ground-water level changes with time
- Compute aquifer hydraulic and storage properties
- Present the spatial relationship with the underlying Denver Basin bedrock aquifers
- Present land ownership, land use, and infrastructure information
- Determine ground water flow directions
- Present ground water recharge and discharge areas
- Identify priority areas for potential aquifer recharge pilot studies.

Task 4 – Reporting ($29,900)

- Stakeholder Meetings
- Project Report

Task 5 - Project Management ($7,000)
This task includes coordination of staff responsibilities and duties, coordination of stakeholder meetings, tracking work accomplished, budget and schedule management, accounting support, and reporting the status of work activities.

D. Budget

The following table summarizes the estimated costs to complete the proposed approach.

Task	Description	Budget Amount
1	Historic data/site characterization	$ 38,500
2	Field Data Collection	$ 69,100
3	Data Analysis, Evaluation, and Mapping	$ 28,500
4	Reporting	$ 29,900
5	Project Management	$ 7,000
	Project Total	**$ 173,000**
	Colorado Geological Survey in-kind match	$ 10,000
	Lost Creek Management District match	$ 3,000
	Total Matching Contributions	**$ 13,000**
	Water Supply Reserve Account Request	**$ 160,000**

E. Contacts

Tom Sauter, General Manager, Lost Creek Management District, phone 303-886-4475, sauter@esrta.com

Ralf Topper, Senior Hydrogeologist, Colorado Geological Survey, phone 303-866-2029, ralf.topper@state.co.us

Lost Creek Basin

- Aquifer Recharge and Storage Study

PHASE 1 BUDGET WORKSHEET

Task 1 Historical Data Compilation and Site Characterization

Total Budget = $38,500.

	Literature Review	Interview Local Experts (2 trips)	Water Well Records	Characterize Aquifer (GIS project, field check - 2 people)	Characterize Land	ID Water/wastewat Infrastructure
Expenses (budget)	$543	$732		$1,077	$366	$732
Labor (budget)	$7,200	$3,500	$3,500	$14,150	$3,200	$3,500
Total (budget)	$7,743	$4,232	$3,500	$15,227	$3,566	$4,232

Timeline 6 months (concurrant activities)

Task 2 Field Data Collection

Total Budget = $69,100.

	Install New Wells- 8 (geologging, samples)	Aquifer Testing (3 wells)	Water Quality (8 wells)	Water Level Monitoring
Expenses (budget)	$2,882	$1,044	$550	$4,567
Labor (budget)	$8,450	$2,530	$1,657	$10,500
Analytical/intrument costs	$390	$1,720	$2,560	$450
Drilling costs (budget)	$22,800			
Geophysical logging (bud	$3,500			
Aquifer testing (budget)		$5,500		
Total (budget)	$38,022	$10,794	$4,767	$15,517

Timeline 3 months 3 months 1 month 8 months

Task 3 — Data analysis, Evaluation, and Mapping
Total Budget = $28,500.

	Data analysis, evaluation, & mapping
Expenses (budget)	$1,000
Labor (budget)	$27,500
Total (budget)	$28,500
Timeline	9 months

Task 4 — Reporting
Total Budget = $29,900.

	Stakeholder meetings (12)	Project Report
Expenses (budget)	$2,262	
Labor (budget)	$7,500	$20,138
Total (budget)	$9,762	$20,138
Timeline	18 months	3 months

Task 5 — Project Management
Total Budget = $7,000.

	Project management
Expenses (budget)	$600
Labor (budget)	$6,400
Total (budget)	$7,000
Timeline	18 months