Statement of Work

WATER ACTIVITY NAME - Rural Douglas County groundwater-level monitoring network

GRANT RECIPIENT – Rural Water Authority of Douglas County

FUNDING SOURCE – USGS matching funds, CWCB state account and basin account

INTRODUCTION AND BACKGROUND
Provide a brief description of the project. (Please limit to no more than 200 words; this will be used to inform reviewers and the public about your proposal)

This project establishes a county-wide groundwater-level monitoring network for the long-term monitoring of the water resources of rural areas of unincorporated Douglas County, Colorado. A scientific evaluation of groundwater resources in the Authority's service area has never been accomplished. In 2010, Douglas County estimated the population would grow from 293,521 residents to more than 444,784 by 2030. Some water providers in the county have surface-water rights, but their allocations do not provide enough water to satisfy the renewable supplies necessary to fulfill the existing water demands of the county. Development of the groundwater resources will continue to be necessary to meet the growing needs of the county.

OBJECTIVES
The primary objective of this study is to establish a county wide groundwater-level monitoring network for the long-term monitoring of the water resources of Douglas County, Colorado. The network will consist of approximately 30 existing wells throughout the county. Water levels will be measured monthly in all wells and five sites will be equipped with pressure transducers for continuous monitoring. Water levels measured from wells in the network will provide an assessment of the current water resource and provide the basis from which to monitor long-term changes of the hydrologic system.

TASKS
Provide a detailed description of each task using the following format

TASK – 1 Identifying Target Monitoring Areas and Selecting Water–level Monitoring Sites.

Description of Task   Overlying existing aquifer maps with well location maps and simulated drawdown maps within each service district will assist in identifying areas of interest for future water-level monitoring. This task will be completed by utilizing the CDWR well-permit web site and retrieving any county resources currently available

Method/Procedure This task will utilize existing State, county, and USGS maps. Potential sites will be identified based on the location, perforated interval, full completion within individual formations, and completeness of the available record.

Deliverable
Identity of possible well sites

TASK – 2 Field Visit and Site Survey.

Description of Task
This task will involve site visits for identifying wells suitable for water-level monitoring. Final selection will be based on well screened interval, well access, primary use, frequency of use, and well owner cooperation. Wells are considered suitable for water-level monitoring if the screened-interval depth and well-construction materials are known from well-drilling records and if the well can be accessed.

Method/Procedure
Once sites are selected for monitoring, the wells will be fully inventoried. The surrounding area, well head, access port, and measuring point will be photographed for the well record. The well location and elevation of the well head will be measured to within 1 foot using a high precision GPS unit. Field work for this task is estimated to require 164 hours of labor.

Deliverable
Well site selection

TASK – 3 Monthly Water- Level Measurements and data Management

Description of Task   Water levels in selected wells will be measured on a monthly basis and recorded. This task includes reviewing the field data forms for accuracy, establishing the sites in NWIS, preparing site files, and entering the water level data into the NWIS database.

Method/Procedure
One well within each district will be equipped with a pressure transducer and data recorder for recording daily readings for comparison. Completion of this task is estimated to require 40 hours each month for a total of 632 hours. Data loggers are estimated to cost just under $6,000 over the 15 month monitoring period. After each round of water-level measurements, hydrographs will be produced and reviewed to ensure that the selected wells are providing reliable data. This task is estimated to require 212 hours.

Deliverable
Data log of water levels in selected wells

TASK – 4 Report Preparation

Description of Task
A standard USGS Scientific Investigation Report (SIR) will be prepared to summarize the year of water-level monitoring results, including comparison of the results to other existing data (for example, the CDWR water-level monitoring data). Any GIS data sets generated during the project will be provided to the RWADC as a deliverable

Method/Procedure
Preparation of report. This task is estimated to require 384 hours of labor.

Deliverable
SIR Report and any GIS data sets generated.

A semi-annual report will be provided to the CWCB by the RWADC.

(**NOTE:** the full USGS proposal is included as Attachment 6.)

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 may contain photographs, summaries of meetings and engineering reports/designs.

BUDGET

Provide a detailed budget by task including number of hours and rates for labor and unit costs for other direct costs (i.e. mileage, $/unit of material for construction, etc.). A detailed and perfectly balanced budget that shows all costs is required for the State's contracting and purchase order processes. Sample budget tables are provided below. Please note that these budget tables are examples and will need to be adapted to fit each individual application. Tasks should correspond to the tasks described above.

Total Costs					
	Labor	Other Direct Costs	USGS Matching Funds	CWCB Grant to RWADC	Total Project Costs
Task 1 – Identify target monitoring areas and select sites	$16,785		$5875	$10,910	$16,785
Task 2 –Field visit and site survey	$20,250	$2440	$7940	$14,750	$22,690
Task 3 – FY10 Monthly water-level measurements and data management	$22,475	$3765	$9185	$17,055	$26,240
Task 3 – FY11 Monthly water-level monitoring and data management	$53,870	$11,645	$22,930	$42,580	$65,515
Task 4 – FY12 Report preparation	$42,710		$14,950	$27,760	$42,710
In-Kind Contributions					
Total Costs:	$156,090	$17,850	$60,880	$113,055	$173,935

Labor costs

Project Personnel: Hourly Rate:	Project Manager ($126/hr	GIS Specialist ($101.65/hr)	Hydrologist ($91.50/hr)	Database Manager ($77.25/hr)	Hydrologist ($77.25/hr)		Total Costs
Task 1 - Identify target monitoring areas and select water-level monitoring sites	$1,010	$4,066	$11,709				$16,785
Task 2 – Field visit and site survey			$10,980		$9,270		$20,250
Task 3 – FY10 - Monthly water-level measurements and data management			$15,368	$7,107			$22,475
Task 3 – FY11 - Monthly water-level measurements and data management	$1,070		$48,870	$3,930			$53,870
Task 4 – FY12 Report preparation	$5,650		$33,600	$3,460			$42,710
Total Hours:	56	40	1,248	180	120		
Cost:	$7,730	$4,066	$120,527	$14,497	$9,270		$156,090

Direct costs

Item:	Copies	Materials	Equipment/ Supplies	Mileage		Total
Units: Unit Cost:	No.			Miles		
Task 2 – Field visit and site survey			$1,425	$1,015		$2,440
Task 3 – FY10 - Monthly water-level measurements and data management			$1,735	$2,030		$3,765
Task 3 – FY11 - Monthly water-level measurements and data management			$5,545	$6,100		$11,645
Total Units:						
Total Cost:			$8,705	$9,145		$17,850

SCHEDULE "

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