

Last Updated: July 5, 2017



**COLORADO**  
Colorado Water  
Conservation Board  
Department of Natural Resources

## Colorado Water Conservation Board

### Water Plan Grant - Exhibit A Budget and Schedule

**Date: 10/1/2017**

**Name of Applicant: Colorado Springs Utilities (Contact: Ron Sanchez)**

**Name of Water Project: Homestake Arkansas River Diversion Improvements**

Task No.	Task Description	Start Date <sup>(1)</sup>	End Date	Water Project Funding Category	Grant Funding Request	Match Funding	Total
1	Preliminary Design	1/1/2014	12/31/2016			\$249,300	\$249,300
2	Final Design	1/1/2017	3/31/2018			\$628,000	\$628,000
3	Land Acquisition and Permitting	10/1/2017	3/31/3018			\$275,000	\$275,000
4	Construction	7/1/2018	4/30/2020	Environmental/Rec	\$300,000	\$5,457,700	\$5,757,700
5	Constuction Management and Project Closeout	7/1/2018	6/1/2020			\$740,000	\$740,000
							\$0
							\$0
							\$0
							\$0
							\$0
							\$0
							\$0
							\$0
							\$0
<b>Total</b>					<b>\$300,000</b>	<b>\$7,350,000</b>	<b>\$7,650,000</b>

**(1)** Start Date for funding under \$100K, minimum 45 Days from Board Approval; Start Date for funding over \$100K, minimum 90 Days from Board Approval.

·Round values up to the nearest hundred dollars.

·Reimbursement eligibility commences upon the grantee's receipt of a Notice to Proceed (NTP)

·NTP will not be accepted as a start date. Project activities may commence as soon as grantee enters contract and receives formal NTP if prior to the listed "Start Date".

·The applicant shall provide a progress repost every 6 months, beginning from the date of contract execution.

·CWCB will withhold disbursement of the last 10% of the total grant amount until a Final Report is completed to the satisfaction of CWCB staff (2017 CWP Grant Guidelines).

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Colorado Water Conservation Board	
Water Plan Grant - Exhibit A	

Statement of Work	
Date:	10/01/2017
Name of Applicant:	Colorado Springs Utilities (CSU)
Name of Water Project:	Arkansas River Diversion
Funding Source:	Environmental and Recreation Program Grant
<p><b>Water Project Overview:</b> Please provide a summary of the proposed water project (200 words or less). The same summary can be used from Page 5 of the CWP Grant Application.</p> <p>The Homestake Arkansas River Diversion (ARD) below the town of Granite, Colorado on the Upper Arkansas River was constructed in 1965 as the original point of diversion for the Homestake Project. The ARD is a rockfill diversion dam with steel sheet pile and articulated concrete mat armoring at the crest. In the 1980s, the intake pipeline was extended to Twin Lakes and the ARD was retained as a backup facility. Since the 1980s, the diversion dam and intake have deteriorated including failure of portions of the articulated concrete armoring and erosion of the rockfill. In its current condition, the ARD presents a hazard to navigation due to exposed rebar and sheet pile and powerful hydraulic conditions on the downstream face. The current condition of this structure requires that recreational whitewater users portage to continue downriver.</p> <p>The ARD Improvements Project (Project) will reconstruct the diversion and intake to provide a robust and reliable river intake, provide fish passage for Brown and Rainbow Trout, and reduce risk to recreational users by minimizing entrapment risk and reducing retentive hydraulic conditions. In its current configuration, the Project includes a reconstructed lateral intake, diversion dam, spillway, an engineered fish passage, and appurtenant structures. The project will improve approximately 600 LF of river frontage and restore approximately 1.37 acres.</p>	
<p><b>Objectives:</b> List the objectives of the project.</p> <ol style="list-style-type: none"> <li>1. Improve river user safety</li> <li>2. Improve the reliability of the diversion facility</li> <li>3. Improve structural stability of intake and diversion weir</li> <li>4. Manage Sediment and debris at the intake</li> <li>5. Provide upstream fish passage</li> <li>6. Provide recreational boat passage</li> </ol>	

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Tasks	
Provide a detailed description of each project task using the following format:	
<b>Task 1 – Preliminary Design</b>	
Description of Task:	
Complete Basis of Design Report (30% Design) Report to refine design criteria for the Arkansas River Diversion structure that includes an intake, diversion weir, spillway, fish passage, and boat chute.	
Method/Procedure:	
<p>Grantees Engineering Consultant will conduct the following analysis and design elements to refine requirements for final design.</p> <ul style="list-style-type: none"> <li>• Hydraulic and Hydrology Analysis</li> <li>• Geomorphology and Sediment Transport Analysis</li> <li>• Fish Passage Criteria Refinement and Design</li> <li>• Boat Passage Criteria Refinement and Design</li> <li>• Numerical Analysis</li> <li>• Scaled Physical Modeling</li> <li>• 30% Design and Cost Estimating</li> </ul> <p>One and two-dimensional analysis will be developed utilizing preliminary design criteria to refine design parameters to be developed for scaled physical modeling. Physical modeling will be conducted to analyze flow characteristics to validate design criteria to ensure technical feasibility of all design elements. Modifications to the scaled physical model to refine desirable flow characteristics during flow testing will be the basis for revising 30% Design drawings and Basis of Design Report.</p>	
Grantee Deliverable: Describe the deliverable the grantee expects from this task	
Basis of Design Report and 30% Design Drawings.	
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task	
Grantee will provide an electronic copy of 30% Design and Basis of Design Report.	

Tasks	
Provide a detailed description of each project task using the following format:	
<b>Task 2 – Final Design</b>	

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Tasks	
Description of Task:	
<p><b>CSU</b> Engineering Consultant will prepare contract documents that include final design drawings and specifications for the construction of the proposed project. The contract documents specify the requirements of the facility. Key components of the project include the following:</p> <ul style="list-style-type: none"> <li>- Concrete intake structure with steel debris screen</li> <li>- Grouted boulder spillway, diversion weir, divider wall</li> <li>- Grouted boulder Fish passage</li> <li>- Concrete and grouted boulder boat chute passage</li> <li>- Short segments of steel pipeline</li> <li>- Isolation valve</li> <li>- Portage trails</li> <li>- Site Restoration</li> </ul>	
Method/Procedure:	
<p>This task will develop the basis of design from task 1 into construction contract documents. The design criteria developed in Task 1 define the requirements for fish passage, spillway, intake, and boat chute hydraulic characteristics under various flow conditions to ensure project objectives such as structure stability and fish passage are met. Grantee's Engineering Consultant will use BODR to develop 60%,90% and 100% progress design drawings with an anticipated completion date of March 2018. Refinement of design from conceptual to final will include one and two-dimensional numerical modeling, scaled physical modeling, and various engineering analyses and calculations to ensure project objectives are met.</p>	
Grantee Deliverable: Describe the deliverable the grantee expects from this task	
Construction drawings and specifications suitable for bidding and construction that meet criteria defined in the Basis of Design Report.	
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task	
Grantee will provide an electronic copy of Final Design Report, Final Design Drawings and Specifications, and Contract Documents.	

## Tasks

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Tasks	
Provide a detailed description of each task using the following format:	
<b>Task 3 – Easements and Permitting</b>	
Description of Task:	
<p>Grantee will prepare supporting documents and applications in support of land acquisition and permitting applications for the project. Easement acquisition documents will be prepared that will encompass the foot print of the proposed structure and any ingress and egress requirements for portage around the proposed facility by river users. Permits to be acquired are those necessary to authorize the project to proceed and not those required by the contractor to complete the work which are included in Task 4.</p>	
Method/Procedure:	
<p>Grantee will assemble and submit required application and documentation to appropriate agencies in support of the following permits to be acquired:</p> <p>Temporary Construction Easements Permanent Easements Chafee County 1041 Permit Chafee County Floodplain Development Permit USACE Section 404 Permit</p> <p>Supporting studies and environmental surveys will be completed in support of the permitting requirements. Land surveying and legal descriptions will be prepared for easement acquisitions.</p>	
Grantee Deliverable: Describe the deliverable the grantee expects from this task	
<p>Grantee will provide executed copies of all permits required to authorize construction of the project. Grantee will provide copies of easement documents required for the project.</p>	
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task	
<p>Grantee will provide a summary map and letter describing all permits and easements necessary to authorize construction. Copies of easements and authorization letters will be prepared for CWCB records.</p>	

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Tasks
Provide a detailed description of each task using the following format:
<b>Task 4 – Construction</b>
<p>Description of Task:</p> <p>Construction of the proposed facility is expected to span 2018 through 2020. A notice to proceed date is anticipated for July 2018 with in river construction occurring over two seasons: September 2018 through April 2019, and September 2019 through March 2020. Commissioning of the facility is scheduled for April 2020. Major work items are delineated as follows:</p> <p>Mobilization Demobilization Dewatering and Temporary Structures Construction Diversion Intake Facility and Pipeline Fish Passage Spillway and Divider Wall Boat Chute</p>
<p>Method/Procedure:</p> <p>Means and Methods of construction will be determined by the selected contractor and construct the proposed facility per the contract documents. The work is anticipated to occur over two fall - winter construction seasons to facilitate in-river construction of half the structure per season. The use of temporary cofferdams is anticipated to facilitate phased construction. The first season of construction will construct the main spillway, diversion weir and fish passage. The second year of construction will consist of the intake structure, pipeline and boat chute.</p> <p>Work will be monitored for the duration of the project by the design engineer. Quality assurance and quality control will be ensured by the Owner's staff and oversight by an independent expert in recreational hydraulics. Work will be invoiced to <b>CSU</b> as a percentage of work completed for the duration of the project. Each category of work described above will be further broken down by a schedule of values to track progress for major components of work associated with major categories of work above. Completion of work described in the schedule of values will be summarized as a percentage of work completed and invoiced to <b>CSU</b>.</p>
<p>Grantee Deliverable: Describe the deliverable the grantee expects from this task</p> <p>Grantee expects monthly payment application from the selected contractor to reflect percent complete progress of the project.</p>
<p>CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task</p> <p>Monthly construction progress updates will be provided to CWCB documenting construction progress and associated portion of the grant funding will be highlighted as part of the update and pay request.</p>

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Tasks
Provide a detailed description of each task using the following format:
<b>Task 5 – Construction Management and Closeout</b>
Description of Task:
Engineer will provide Engineering Services During Construction to ensure constructed work is in conformance to design plans and specifications and of good quality.
Method/Procedure:
<p>Engineer will provide project management services in support of the constructed project. Services include:</p> <ul style="list-style-type: none"> <li>• Bidding assistance,</li> <li>• Construction Contract Administration,</li> <li>• Contract Change Management including: Change Orders, Work Change Directives, Claims, etc.</li> <li>• Site and Construction Progress Meetings,</li> <li>• Reviews of Submittals and Requests for Information (RFIs),</li> <li>• Processing applications for payment</li> <li>• Resident Project Representatives Services: <ul style="list-style-type: none"> <li>○ Daily observation of construction activity,</li> <li>○ review and monitoring of work schedules,</li> <li>○ monitoring of contractor performance,</li> <li>○ preparation of daily inspection reports,</li> <li>○ review of materials, and</li> <li>○ preparation of as-built documentation</li> </ul> </li> <li>• Participation in substantial and final inspections and preparation of close out documentation.</li> </ul>
Grantee Deliverable: Describe the deliverable the grantee expects from this task
<p>Deliverables will include:</p> <p>Monthly Progress report  Review of monthly pay application  Construction completion report  Electronic project record utilizing cloud based PM software.</p>
CWCB Deliverable: Describe the deliverable the grantee will provide CWCB documenting the completion of this task
Grantee will provide construction completion report document, as-built drawing, and final pay application.

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### Budget and Schedule

This Statement of Work shall be accompanied by a combined Budget and Schedule that reflects the Tasks identified in the Statement of Work and shall be submitted to CWCB in excel format.

### Reporting Requirements

**Progress Reports:** The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status 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. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.

**Final Report:** At completion of the project, the applicant shall provide the CWCB a Final Report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will withhold disbursement the last 10% of the budget until the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.



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