

**REQUEST FOR PROPOSALS**  
FOR PROFESSIONAL SERVICES  
**Modeling Services**



**CENTRAL UTAH WATER**  
**CONSERVANCY DISTRICT**

October 2020

1426 East 750 North, Suite 400  
Orem, UT84097

**REQUEST FOR PROPOSALS**

The Central Utah Water Conservancy District is seeking Proposals from qualified professional firms to provide expertise and professional engineering services for a multi-year, Modeling Services contract.

All questions relating to this RFP shall be directed to Bart Leeflang, Program Support Manager, (801) 226-7141 or bart@cuwcd.com

## **INTRODUCTION and BACKGROUND**

Central Utah Water Conservancy District (CUWCD, District) operates and maintains the Bonneville Unit of the Central Utah Project (CUP). The CUP is a federal water project, and a participating project under the Colorado River Storage Act of April 11, 1956 (PL 84-485, 70 Stat. 105). Constructed by the United States Bureau of Reclamation (Reclamation) and CUWCD, it is the largest water resources development project in the State of Utah. The CUP makes use of a portion of Utah's share of the Colorado River yield as set forth in the Colorado River Compact of 1922. Water developed by CUP is used for municipal, industrial, agriculture, hydroelectric power, fish and wildlife, and recreation. The CUP also improves flood-control capability and helps maintain water quality.

The Bonneville Unit collects and diverts water from the Uinta Basin, part of the Colorado River Basin, through a trans-mountain diversion to the Wasatch Front. It also supplies water to the Uinta basin. The CUP also collects, diverts, and develops water along the Wasatch Front for use along the Wasatch Front. It is located in central and northeastern Utah and provides water for Salt Lake, Utah, Wasatch, Duchesne counties, portions Summit County, and has plans for eventual deliveries to portions of Juab County. The Bonneville Unit is comprised of six systems: Starvation Collection System, Strawberry Aqueduct and Collection System, Diamond Fork System, Utah Lake Drainage Basin Water Delivery System, Wasatch County Water Efficiency Project/Daniel Replacement Project, and the Municipal and Industrial System.

In 2005, CUWCD initiated a non-federal water development project called the Central Water Project (CWP). The CWP was designed and constructed to help meet the municipal and industrial water needs of the growing communities of Vineyard, Lehi, Saratoga Springs, and Eagle Mountain in Utah County and in the Jordan Valley Water Conservancy District service area in Salt Lake and Utah Counties. Water for the CWP is supported with CUWCD's purchase of the former Geneva Steel water rights and is combined with other CUWCD surface water rights. In order to make CWP deliveries, wells at the Vineyard Well Field have been drilled<sup>1</sup> and equipped and over 23 miles of transmission pipelines have been constructed. In addition, turnouts, pump stations, chlorination facilities, and a 10-million-gallon finished water reservoir have been constructed. Ultimately, a total water supply of approximately 53,300 AF of CWP water is planned to be delivered annually to its customers.

Operation of these systems is complex and requires significant coordination with respect to natural, trans-basin, and operational inflows and outflows along with water right constraints, downstream demands, mandatory in-stream flows, and other external factors such as the Upper Basin's downstream delivery obligations to the Lower Colorado River Basin States, climate variability, etc.

As climate variability and population growth within the District boundaries and Colorado River Basin continues to stress water supply, CUWCD must optimize system operation and improve its

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<sup>1</sup> The completed CWP supply will include 17 high-head wells. A portion of these have been completed and are currently in service.

understanding of internal and external risks. Modeling performed under this contract will support CUWCD's effort to identify opportunities to improve system operations, coordination with district customers and stakeholders, evaluate operational impacts due to external influences, improve water accounting and develop risk mitigation plans related to water supply.

## **SCOPE OF WORK**

The purpose of this contract is to develop a series of computer simulation models that support the District's operational requirements in 1) water accounting and 2) forecasting. The District intends to develop a portfolio of models under this contract that are consistent and complimentary, use the same modeling platform, efficiently integrate external inputs, and can be operated by District staff after their development by the consultant.

The modeling consultant will be issued separate task orders that contain refined work scopes specific to the activity being pursued.

**Accounting Models** will be developed using the Riverware modeling system with an input of historic flow data and real time data collection from the District's SCADA system along with other sources of real time data. Accounting models may be used to improve billing, water records of delivery, and verification of water right availability.

As previously indicated, the District operates a series of interconnected systems that are hydrologically, hydraulically, and administratively (water rights) complex. Accounting models are similarly interconnected and will be developed following a logical progression.

The District is currently investigating the effectiveness of accounting modeling. The pursuit and development of subsequent accounting models will depend on the District's determination of the effectiveness of the accounting modeling currently underway.

**Forecasting Models** will also be developed using the Riverware modeling system and will aid decision-makers in operating decisions in response to short-term hydrologic or emergency conditions, long-term strategic decisions related to climate variability, curtailment, other political and environmental factors, and administrative engagement related to water right change applications, exchanges, or similar actions.

***Operational Forecasting Models*** will be developed to assist District system operation managers in optimized operation of dams and water conveyance features in response to real-time hydrologic conditions. The models will allow the District to minimize losses from spilling and maximize storage, react to emergency situations, as well as meet current contract and environmental obligations.

***Risk and Yield Forecasting Models*** will be developed to determine the District's water supply sensitivity to climate variability, curtailment, and other factors in meeting contractual deliveries with a reduced project yield. The models will help to inform decision-makers of a range of risks and related shortages and provide a foundation for drought mitigation planning. While these models may be used for evaluating shortages, they may also be developed to evaluate the potential for additional yield, and opportunities for operational modification to optimize use of District facilities, and assets.

*Colorado River Forecasting Models* are a subset of the risk and yield forecasting models; however, they will be based on the US Bureau of Reclamation's CRSS model, and will be

developed to aid the District in its understanding of potential changes that may be proposed by interested parties, and how those changes may impact the District. A major portion of Bonneville Unit water supply is tributary to the Colorado River and subject to compact obligations. The District has interests in further evaluation of Demand Management water storage options in Colorado River Storage Project (CRSP) reservoirs, operation of the 2007 Interim Operating Guidelines versus other operating scenarios, and risks and opportunities associated with adjustments to the balancing and equalization tiers, or other variations to the current operation. As the 2007 Interim Operating Guidelines are set to expire in 2026, the District is interested in having an independent evaluation of proposed operational scenarios for CRSP facilities that may replace the interim guidelines. The District has an immediate need for development of Colorado River modeling scenarios.

*Administrative Change Forecasting Models* are another subset of the risk and yield forecasting models in that the models will forecast impacts of individual water right change applications that could result if the change applications are approved. Development of these models will allow the district to evaluate the impacts of the proposed changes, and in the case of an impact to District or CUP water rights this information will help to substantiate its position and protect these water rights. It may also be used by the District in its own change applications to demonstrate non-impacts or mitigation measures proposed to make water right holders whole.

Similarly, these types of models may be developed in support of National Environmental Protection Act (NEPA) efforts and process to demonstrate and evaluate the impacts of proposed projects related to Federal water and Federal facilities.

#### **Other General Requirements**

1. CUWCD will provide operational and District owned information and institutional procedures to aid in development of the models. However, the consultant will be responsible for researching, collecting, and incorporating additional necessary data and information for developing a functional model with the desired output. This includes but is not limited to hydrologic data and water rights and related administrative rules.
2. When development of a model is completed it will be delivered to the District in a form that can be operated and manipulated by trained District staff for use in operations and planning without proprietary software (other than Riverware or other tools developed at the direction of the District). The Consultant will be tasked with training District personnel to run the models. The District shall own exclusive rights to all models developed, including future use and manipulations of such.
3. The consultant will be required to perform effective project management for effective administration of time, cost, and scope, as directed in specific task orders. Tasks will require substantive coordination with the District, consultant, and other stakeholders.
4. The consultant will be tasked with documenting work completed, and compilation of work and results in reports as directed by task order.

**Contract Period:** Under this Contract, CUWCD envisions issuing multiple task orders under this contract, as needed, over the course of up to 5 years. Utah Code Ann. §63G-6a-1204 allows for extension of a multi-year contract when it is determined be in the best interest of the procurement unit and CUWCD will consider extensions under this authority.

## **TECHNICAL PROPOSAL REQUIREMENTS**

The selected consultant and their subconsultants shall be capable of providing all professional services as described under the Scope of Work outlined above and maintain those capabilities until notification that the Consultant's proposal was unsuccessful or, if the proposal is successful, until the contract is closed. Exclusion of any service needed for the contract may serve as cause for rejection of the Proposal. Proposers must provide written responses corresponding to each item listed below:

1. **KEY PERSONNEL** - Specifically identify Key Personnel who would be assigned to the contract work. Include qualifications, related experience, and background. Identify any previous experience on projects completed for the District, if any. **Note that Key Personnel identified in the responding proposal may not be changed without the advance, written approval of the District.** Complete and return with proposal, **Table 1 – Key Personnel**. Indicate the availability of Key Personnel for Colorado River modeling<sup>2</sup>.

2. **MODELING APPROACH AND QUALITY CONTROL** - Considering the scope of work, provide a written description of the proposer's typical approach to modeling, common issues faced on similar modeling projects, and how these issues are typically addressed. With this description, include a discussion of the proposer's approach to quality control.

3. **PROJECT EXPERIENCE AND PAST PERFORMANCE** – Provide experience and work history of the Consultant and Key Personnel with similar projects as described in "Scope of Work" as follows:

- a. **Accounting Models** – Identify a minimum of 2 similar projects successfully completed in the past 10 years, or currently in-process, and include a description of each project that addresses the items listed hereafter.
  - i. Purpose of the model – qualifying projects will incorporate historic data and/or real time data from SCADA systems used to improve billing and/or produce water records of delivery and/or verification of water right availability.
  - ii. Describe the approach used, outcomes, and the specific engineering and professional services provided.
  - iii. Describe challenges, if any, associated with this project and how those challenges were resolved.
  - iv. Provide the point of contact and contact information including email and telephone number of the client for whom the project was completed.
- b. **Forecasting Models** - Identify a minimum of 2 similar projects successfully completed in the past 10 years and include a description of each project that addresses the items listed hereafter.
  - i. Purpose of the model – qualifying projects 1) use real time conditions to model operating scenarios to be used for reservoir operation and system optimization; or 2) model the impacts of increasing demand and/or climate and hydrologic variability and/or administrative changes on supply shortages or surplus.
  - ii. Describe the approach used, outcomes, and the specific engineering and professional services provided.

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<sup>2</sup> Near-term availability of key personnel for modeling Colorado River operating scenarios is an evaluation factor in the Selection Criteria.



- iii. Describe challenges, if any, associated with this project and how those challenges were resolved.
- iv. Provide the point of contact and contact information including email and telephone number of the client for whom the project was completed.

Do not include any projects in the work history that were completed by the Consultant but did not involve the proposed Key Personnel. If Key Personnel were involved with similar projects but were employed by another firm that performed the work, please note their employer at that time and provide the requested project data. Fill out and return with the proposal, **Table 2 – Project Experience Summary**. Team members from different firms who are jointly submitted as a team should identify the companies involved, the relationships, and roles of each of the personnel and companies.

4. ORAL INTERVIEW – The CUWCD selection committee may invite your firm to attend an oral interview after review of your technical proposal if, based on this review, the selection committee is unable select the most qualified firm.

**TENTATIVE SCHEDULE**

The schedule for this project is shown below and the dates of the notification or short-listing and oral presentations are tentative and may vary slightly.

|   |                                       |
|---|---------------------------------------|
| Advertise on the District Website.....                          | Tuesday, October 13th, 2020           |
| RFP Available .....   | Tuesday, October 13th, 2020           |
| Mandatory Information Meeting by CUWCD.....                     | 1:00 pm, Thursday, October 22nd, 2020 |
| Technical Proposals Due .....                                   | 1:00 pm, Thursday, October 29th, 2020 |
| Notification of Selection or Short-Listing for Interviews ..... | Thursday, November 5th, 2020          |
| Possible Oral Presentation .....                                | Thursday AM, November 12th, 2020      |
| Approval to Award Contract CUWCD Board Meeting.....             | Wednesday, November 18th, 2020        |

**SELECTION PROCESS**

The following paragraphs describe the selection process that will be followed in selecting a firm to provide the services described above:

**Selection and Notification of Firms**

To be responsive to this request for professional services, the interested consultant must be represented at the **mandatory** information meeting at 1:00 pm, Thursday, October 22nd, 2020. This meeting will be held virtually due to COVID-19 restrictions. Firms interested in participating in the mandatory information meeting must notify Bart Leeflang by email at [bart@cuwcd.com](mailto:bart@cuwcd.com). One week prior to the information meeting an invitation with a link to a Microsoft Teams meeting will be sent to those firms requesting to participate.

In addition to attendance at the information meeting, the responsive proposer must submit five (5) hardcopies and one (1) electronic copy of the Technical Proposal, to Bart Leeflang, P.E., Program Support Manager ([bart@cuwcd.com](mailto:bart@cuwcd.com)), no later than **1:00 pm, Thursday, October 29th, 2020 at 1426 E 750 N Ste 400, Orem, Utah 84097-5474**. The technical proposal shall not exceed fourteen (14) single sided pages in length, not including resumes or Tables 1 and 2. The electronic version of the proposal should be in \*.pdf format. In addition, Table 1 and Table 2 must be submitted in native Word or Excel formats. The RFP and related tables are available for download from the Central Utah Water Conservancy District Website under “Business Opportunities” found by selecting “Doing Business” from the menu

(<https://cuwcd.com/business.htm#business>). The information contained in the proposal, and past performance, will be the sole determination of selecting the consultant for oral interviews or for selecting the consultant for negotiating the contract.

The CUWCD selection team will evaluate each proposal and anticipate notification of the selected consultant(s) by **Thursday, November 5th, 2020** if the selection team determines to have oral interviews of short-listed consultants. Oral interviews, if needed, are anticipated to be scheduled for the morning of **Thursday, November 12th, 2020**. In the event of being invited for oral interviews and in anticipation of the short period of time for contract negotiations, each short-listed firm will bring a detailed draft cost proposal in a sealed envelope that includes the following:

1. A tabulation of billing rates to be used for personnel anticipated to be involved in the Contract.
2. A tabulation of rates for direct reimbursable expenses.
3. An explanation of multipliers for personnel billing rates and direct reimbursable expenses.

Cost proposals will not be opened by the selection team or considered in the selection process. The selection team may determine to select a consultant without oral interviews, in which case CUWCD would request the selected consultant to submit a draft detailed cost proposal by **Thursday, November 12th, 2020**. The detailed cost proposal will be used to negotiate the scope of work with the selected consultant before CUWCD board of trustees meeting on Wednesday, November 18th, 2020.

#### Proposal Evaluation

CUWCD will evaluate each Technical Proposal using the selection criteria set forth in the following section. **Qualifying experience and skills must be attributable to Key Personnel identified in the responding Proposal to be considered.**

Each Proposal will be evaluated by the CUWCD selection committee representatives in accordance with the Central Utah Water Conservancy District's Procurement Policy. The Proposals will be evaluated based on the selection criteria outlined below. Non-responsive Proposals may be eliminated. The Consultant bears sole responsibility for the items and information included, or not included in the Proposal submitted by that Consultant. The District reserves the right to disqualify any proposal that includes significant deviations or exceptions to the terms, conditions and/or specifications in this RFP. Upon completion of the initial evaluation, the District may elect to have further discussions with responsible offerors for assuring a full understanding of, and responsiveness to the requirements of this RFP.

**SELECTION CRITERIA**

The criteria for Section will be based on the following:

Percent

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|--|------|
| <p><b>(1) Key Personnel</b></p> <ul style="list-style-type: none"> <li>• Experience on similar modeling projects</li> <li>• Availability of pertinent modeling professionals for development of Colorado River modeling scenarios</li> </ul>   | 30   |
| <p><b>(2) Modeling Approach and Quality Control</b></p> <ul style="list-style-type: none"> <li>• Description and adequacy of methods and approach to completing the modeling and other supporting model documentations.</li> <li>• Adequacy of Quality Control processes</li> </ul>  | 15   |
| <p><b>(3) Project Experience and Past Performance</b></p>  | 55   |
| <p><b>a. Accounting Modeling Qualifications and Experience</b></p> <ul style="list-style-type: none"> <li>• Firm demonstrates in the proposal the required qualifications and has experience with developing water accounting models.</li> <li>• Qualifications and experience in dealing with water right laws and policy.</li> <li>• An understanding of complex water right exchanges and/or distribution systems.</li> <li>• Riverware Modeling experience related to water accounting.</li> </ul> | (20) |
| <p><b>b. Forecasting Modeling Qualifications and Experience</b></p> <ul style="list-style-type: none"> <li>• Firm demonstrates in the proposal the required qualifications and experience with developing forecasting models.</li> <li>• Qualifications and experience in dealing hydrologic and administrative variability.</li> <li>• Experience related to the NEPA process.</li> <li>• Riverware modeling experience related to water forecasting.</li> </ul>                                      | (20) |
| <p><b>c. Past Performance</b></p> <ul style="list-style-type: none"> <li>• Customer representation of Firm’s performance on reference projects in meeting customer expectations.</li> <li>• CUWCD will consider its experience with the Firm’s performance on CUWCD projects.</li> </ul>   | (15) |

CUWCD is committed to protecting the integrity of the competitive selection process and is respectful of and grateful for the resources of firms submitting proposals. To that end, prospective firms are not to attempt to identify potential selection committee members and have any direct or indirect communications relating to this contract with any of the selection committee members during the selection process. Furthermore, if during the RFP preparation and selection time period a proposer is contacted by a member of the selection committee directly or indirectly regarding the project or selection process, or if any type of conflict of interest is identified, the proposer shall notify Bart Leeflang, P.E., Program Support Manager, of the contact or conflict. This will allow for modifications to the selection committee or other action necessary to preserve the professional integrity of the selection process.



**BUSINESS CONFIDENTIALITY**

In accordance with Utah State Law, proposals are a public record and are subject to public review upon request. However, you may request any part of your proposal be a protected record and not available for public release by complying with Utah Code 63G-2-309(1). To do this, you must provide CUWCD with a written claim of business confidentiality, identify specific applicable portions of the proposal, and a concise statement of reasons supporting the claim of business confidentiality. This information must be submitted together with your proposal. All proposals will become and remain the property of CUWCD. This statement can be in addition to the specified page length of the proposal.