

# Exhibit A – Statement of Work

[Template updated November 2023]

Statement Of Work	
<b>Prepared Date:</b>	8/19/2024
<b>Name of Grantee:</b>	Dolores Water Conservancy District
<b>Name of Water Project:</b>	Dolores Operations Model Modernization
<b>Water Project Overview:</b> Please provide a brief description of the proposed water activity (no more than 200 words). Please define all acronyms.	
<p>The Dolores Water Conservancy District (DWCD) manages McPhee Reservoir, which is operated to meet multiple objectives including irrigation contracts, environmental flows, boating on the Dolores River, municipal water supply, and flood control. In this project, DWCD will oversee a contractor to conduct various software development activities to upgrade the existing DWCD Excel-based operations planning tool to a modern water resources model using the GoldSim software package. This upgraded model will integrate ensemble streamflow forecasts from the Colorado Basin River Forecast Center, and Colorado Airborne Snow Measurement programs to allow for more efficient decision-making during runoff season and maximize the beneficial use of McPhee Reservoir. DWCD will engage with local stakeholder agencies representing a broad range of water sector interests to ensure that the final operational tool will allow DWCD to develop and disseminate operating plans quickly and efficiently.</p> <p>Historically, the DWCD has relied on a complicated and inefficient process to develop its seasonal operating plans. This process involves many spreadsheets and requires deep institutional knowledge on the part of staff to execute it properly. The existing process has limited the DWCD's ability to assess multiple operating scenarios and optimize its planned releases. A modernized operations planning tool will directly address these issues.</p>	
<b>Project Objectives:</b>	
<p>The primary objective of this project is to develop a streamlined process to deliver operating plans to the various stakeholders of the Dolores project including irrigators, municipal users, environmental regulators, and the local boating community.</p> <p>To achieve this objective, DWCD will contract with LRE water to migrate DWCD's existing excel-based operations planning process to a modern water resources model using the GoldSim software package. At its core, GoldSim is a Monte-Carlo simulation platform that will allow the DWCD to quantify uncertainty and optimize water resources decision-making during spring runoff.</p> <p>GoldSim is a highly flexible and visual modeling platform that makes the model structure transparent and intuitive to users through its graphical interface. GoldSim provides tools for development of a custom user-interface through which to alter inputs and review results in various presentations. The completed GoldSim model will support the DWCD in:</p> <ul style="list-style-type: none"> <li>● Incorporating into operational decision making the official streamflow forecast products from the Colorado Basin River Forecast Center, as well as experimental streamflow forecast products like those from the Colorado Airborne Snow Measurement Program and Airborne Snow Observatories Inc.</li> <li>● Assessing available yield and delivery timing of irrigation contract water</li> </ul>	

- Meeting downstream non-consumptive demands including downstream environmental and recreational releases
- Master planning efforts, including climate change impacted hydrology, infrastructure upgrades and alternative operating scenarios
- Quickly testing alternatives and generating operating plans during runoff season

In addition to upgrading the operations model, DWCD will also engage with local stakeholders on needs and tradeoffs for the Dolores operating plans. Optimizing McPhee dam operations and delivery of plans will directly benefit all stakeholders and allow for more seamless and transparent runoff season operations.

## Tasks

### **Task 1: Data Collection, Project Discovery, Stakeholder Engagement**

**Description of Task:**

In this task, DWCD staff and LRE Water will work closely to understand all details of the DWCD's annual operations planning and usage goals for the model.

Management of McPhee reservoir and the Dolores river for fish health, recreation, and water supply has been the subject of several ongoing planning processes including:

- The Dolores River Dialogue
- Dolores Project Drought Contingency Plan
- Ongoing work of Dolores River Native Fish Monitoring & Recommendation Team
- Southwest Roundtable Basin Implementation Plan
- Protect the Dolores by Dolores River Boating Advocates

These planning processes are ongoing and provide regular input on fish health, flow requirements, water development, and recreational uses of Dolores project water. The model and resulting output from this project will allow Dolores Water Conservancy District to conduct more scenario analysis and more carefully balance the needs of all local interests.

**Method/Procedure:**

- The contractor will conduct multiple discovery meetings to understand the DWCD's operations, prioritization of demands, annual planning process and development of operating plans.
- Develop specifications for all required model components and inputs, including demands, diversions, streamflows, water rights, reservoir characteristics and operating priorities.
- Based on planned usage and DWCD staff input, develop a detailed wireframe of the GoldSim model interface allowing for all aspects of operational planning.
- Engage with local stakeholders who rely on the DWCD's annual operating plans to understand their needs and how they would benefit from optimized supplies. This will take the form of several fact-finding sessions and presentations to inform the format and content of the final operating plans generated through this effort. Specifically, LRE Water and DWCD will solicit project feedback from the different groups that have interests in McPhee Dam operations:
  - Montezuma Valley Irrigation Company
  - Ute Mountain Ute Tribe

<ul style="list-style-type: none"> <li>• Dolores River Native Fish Monitoring &amp; Recommendation Team.</li> <li>• Dolores River Boating Advocates</li> <li>• Others, as appropriate</li> </ul>
<b>Deliverables:</b>
Model specifications, memo summarizing stakeholder input

Tasks
<b>Task 2: Model Development and Calibration</b>
Description of Task:
In this task, DWCD will oversee the contractor in development and calibration of the GoldSim model to historical operations, testing data integration, and finalizing model interface.
Method/Procedure:
<ul style="list-style-type: none"> <li>• Utilize GoldSim modeling software to create a dynamic water resources simulation model of the DWCD's system, based on the existing excel accounting spreadsheet and the approved model design from the previous Task. The GoldSim model will have a daily timestep.</li> <li>• Finalize the working model interface with all necessary options and flexibility for DWCD use in their operations and long-range planning</li> <li>• Develop automated processes to bring in live data from various streamflow forecast products, and observed data like streamflows, diversions and reservoir contents.</li> <li>• This model will be delivered in a draft and a final phase, with room for feedback after the draft delivery. DWCD expects to make tweaks to the model interface to ensure maximum usability before final delivery</li> <li>• DWCD will acquire a GoldSim software license during this development phase</li> <li>• Conduct several historical "as-if" model runs to show Dolores project reliability assuming historical and climate-impacted hydrology, as well as realistic current and future growth scenarios</li> <li>• Conduct a workshop with a forecast retrospective analysis, showing how the GoldSim model would have performed during a recent year.</li> </ul>
Deliverable:
Draft and final GoldSim Model Packages, memo summarizing Dolores project reliability, and forecast retrospective.

Tasks
<b>Task 3: Model Documentation and Training</b>
Description of Task:
The final model will be handed off, and documentation will be developed by the contractor for DWCD staff. Once this task is completed, DWCD staff will be able to run the model, deliver results, and make model logic modifications as needed. The end product for the broader stakeholder group

will be the operating plans that Dolores staff develop and share prior to, and during, runoff season every year.

Method/Procedure:

- Multiple DWCD staff will take a GoldSim software training to understand the basic and advanced functions of GoldSim.
- The contractor will develop model documentation reflecting all logic and usage details specific to the model developed for DWCD.
- The contractor will conduct a series of technical trainings with DWCD staff on model usage, logic, and how to update and introduce model logic.
- LRE Water will present to the Stakeholder group via webinar or other available distribution channels results on the trainings conducted and how DWCD plans to use the model to inform their operations in the years to come. The results of implementation of stakeholder feedback into the final model will be included in this training.

Deliverables:

Model documentation, GoldSim training, DWCD Model-Specific Training,, Memo summarizing training activities and outcomes

## Tasks

### Task 4: Ongoing Monitoring of Water Management Improvements

Description of Task:

After the model is developed and delivered to DWCD staff and they are trained in its use, it will be important to stay engaged with the DWCD. LRE Water will work with DWCD to ensure the operational processes laid out in this process are being followed and/or modified as necessary. In addition, the project team will solicit feedback from the core stakeholder group on how the model has been used in developing operating plans or assessing long range scenarios to meet the multi-objective needs of the project.

Method/Procedure:

During the 1<sup>st</sup> year after model completion and delivery, LRE Water will conduct another internal feedback and training session with DWCD staff. LRE Water will be available for on-call support throughout the testing phase of this model to resolve any operational learning curve issues during adoption.

LRE Water will facilitate a feedback collection session with the broader stakeholder group and make recommendations to DWCD.

Deliverables:

Training for DWCD staff and stakeholders, and summary memo including recommendations for ongoing model maintenance and use cases

### Budget and Schedule

This Statement of Work is accompanied by a combined Budget and Schedule that reflects the tasks identified in the Statement of Work.

### Reporting Requirements

**Progress Reports:** The grantee shall provide the CWCB a progress report every six months, beginning from the date of issuance of the grant agreement. 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.

**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 pay out the last 10% of the budget when 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 grant agreement will be closed without any further payment.

### Payment

Payment will be made based on actual expenditures and must include invoices for all work completed. The request for payment must include a description of the work accomplished by task, an estimate of the percent completion for individual tasks and the entire project in relation to the percentage of budget spent, identification of any major issues, and proposed or implemented corrective actions.

Costs incurred prior to the effective date of this grant agreement are not reimbursable. The last 10% of the entire grant will be paid out when the final deliverable has been received. All products, data and information developed as a result of the grant agreement must be provided to the CWCB as part of the project documentation.

### Performance Measures

Performance measures for the grant agreement shall include the following:

(a) Performance standards and evaluation: Grantee will produce detailed deliverables for each task as specified. Grantee shall maintain receipts for all project expenses and documentation of the minimum in-kind contributions (if applicable) per the budget. Per grant guidelines, the CWCB will pay out the last 10% of the budget when 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 grant agreement will be closed without any further payment.

(b) Accountability: Per grant guidelines full documentation of project progress must be submitted with each invoice for reimbursement. Grantee must confirm that all grant conditions have been complied with on each invoice. In addition, per Grant Guidelines, progress reports must be submitted at least once every 6 months. A final report must be submitted and approved before final project payment.

(c) Monitoring Requirements: Grantee is responsible for ongoing monitoring of project progress per Exhibit A. Progress shall be detailed in each invoice and in each progress report, as detailed above. Additional inspections or field consultations will be arranged as may be necessary.

(d) Noncompliance Resolution: Payment will be withheld if grantee is not current on all grant conditions. Flagrant disregard for grant conditions will result in a stop work order and cancellation of the grant agreement.

Task No.	Task Name	Hours	Cost	Timeline	Expenses	DWCD In-Kind Labor	DWCD Cash Match	CWCB Grant Funds	Total Cost
01	Data Collection/Project Discovery	140.00	\$35,782.20	Q1 2025	\$ -	\$ 11,362.20	\$ -	\$ 24,420.00	\$ 35,782.20
02	Model Functional Specifications	144.00	\$23,600.00	Q1 2025	\$ -	\$ -	\$ 15,000.00	\$ 8,600.00	\$ 23,600.00
03	Model Design and Mockup	124.00	\$20,900.00	Q1-Q2 2025	\$ -	\$ -	\$ 15,000.00	\$ 5,900.00	\$ 20,900.00
04	GoldSim Model Development	460.00	\$82,480.00	Q2-Q3 2025	\$ -	\$ -	\$ 15,000.00	\$ 67,480.00	\$ 82,480.00
05	Model Calibration and Validation	192.00	\$33,560.00	Q3 2025	\$ -	\$ -	\$ -	\$ 33,560.00	\$ 33,560.00
06	Model Documentation	100.00	\$16,512.00	Q4 2025	\$ -	\$ -	\$ -	\$ 16,512.00	\$ 16,512.00
07	Staff Training	96.00	\$19,204.40	Q4 2025	\$ 507.20	\$ 10,477.20	\$ -	\$ 8,727.20	\$ 19,204.40
08	Ongoing Training and Validation	96.00	\$11,712.40	Q1-Q4 2026	\$ -	\$ 3,492.40	\$ -	\$ 8,220.00	\$ 11,712.40
09	3 Years of GoldSim Licenses	0.00	\$8,950.00	2025-2027	\$ 8,950.00	\$ -	\$ 8,950.00	\$ -	\$ 8,950.00
	<b>Project Total</b>	<b>1,256.00</b>	<b>\$252,701.00</b>		<b>\$ 9,457.20</b>	<b>\$ 25,331.80</b>	<b>\$ 53,950.00</b>	<b>\$ 173,419.20</b>	<b>\$ 252,701.00</b>

CWCB Match Requirements	
DWCD In Kind Match	\$25,331.80
DWCD Cash Match	\$53,950.00
<b>Match Total</b>	<b>\$79,281.80</b>
<b>Total Project Cost</b>	<b>\$252,701.00</b>

Total Match (>25%)

31%

Cash as Percent of Total Match (>50%)

68%

