

February 3, 2016

Project: Inundation Mapping for Gurley Dam

Vendor: Farmers Water Development Company
Mr. Dave Alexander
P.O. Box 10
Norwood, CO 81423
Phone / email: 970-327-4650 / farmerswdc@yahoo.com

Consultant: RJH Consultants, Inc.
Mr. Korey Kadrmas, P.E.
9800 Mt. Pyramid Ct., Suite 330
Englewood, CO 80112
Phone / email: (303) 225-4611 / kkadrmas@rjh-consultants.com

CWCB funding source: Severance Tax Trust Fund Operational Account

SCOPE OF WORK

RJH Consultants, Inc. (Consultant), at the direction of the Farmers Water Development Company (Vendor), will perform a dam breach modeling study and associated flood inundation mapping for the above dam. Gurley Dam is a High Hazard dam which flows into Gurley Canyon and eventually into the San Miguel River. The above dam is located in San Miguel County in the Gunnison River Basin south of Norwood, CO.

Consultant or Vendor will submit the final report and mapping to the Colorado Division of Water Resources, Dam Safety Branch, for approval. Grant funds will not be disbursed until the project has been approved by the Dam Safety Branch.

PROPOSED METHODOLOGY

The Consultant shall perform a clear dam breach analyses in accordance with the State of Colorado Rules and Regulations for Dam Safety and Dam Construction (1/1/2007), and the Dam Safety Guidelines for Dam Breach Analysis (2/10/2010). Correspondence shall be with Jason Ward, P.E., of the Colorado Division of Water Resources, Dam Safety Branch, to present preliminary dam breach parameters, water surface profile modeling, and inundation mapping and to determine if field measurements are necessary for critical bridges.

Inundation mapping for High Hazard dams shall show the calculated extents of the dam breach flood wave. The mapping will also include cross sections at critical locations showing lateral and vertical flood extents, flood wave velocity, and flood wave arrival time. Inundation mapping shall be extended downstream to a location where no potential for loss of life and/or no significant property damage exist.

Inundation mapping for Significant Hazard dams shall show the route of the dam breach flood wave, the estimated time of arrival of the flood wave at critical sections, and the estimated lateral extent of inundation. The inundation mapping shall be extended downstream to a location where no significant property damage exists. The inundation mapping requirements for Significant Hazard dams may be modified for good cause, with the approval of the State Engineer.

DELIVERABLES

For each reservoir, the Vendor shall provide the CWCB electronic copies of the following: a final report for the inundation mapping analysis stamped by a licensed Colorado professional engineer; digital files of the inundation limits, maps and supporting spreadsheets; and hydraulic/hydrologic models.

Additionally the Vendor shall provide a copy of the project's Colorado Division of Water Resources, Dam Safety Branch, approval letter.

SCHEDULE

Work may initiate on the date of the State's Purchase Order. Deliverables are due no later than June 15, 2016.

BUDGET

The Consultant will complete the work described for a not-to-exceed budget of \$8,000 based on Consultant's current rate schedule and projection of effort. The estimate is summarized. The Consultant shall invoice Vendor on a Time and Materials basis for services performed below:

| Task | Budget |
|---|---------|
| Gurley Dam: Breach Routing, Flood Routing, Deliverables | \$8,000 |
| TOTAL | \$8,000 |

PAYMENT

The State shall pay Vendor up to \$4,850 (61 % of Project Cost) for Consultant's project related invoices following receipt of final deliverables. The Vendor is responsible for all expenses in excess of the State's contribution. Any overages or increases in project costs shall be the responsibility of the Vendor.

Estimated Project Cost Sharing:

| | |
|-------------|-----------------|
| Owner Match | \$ 3,150 |
| CWCB Grant | <u>\$ 4,850</u> |
| TOTAL | \$ 8,000 |

CWCB shall issue payment following receipt and processing of Vendor's Request for Payment submittal. The Request for Payment must include: a summary of Consultant's labor effort and direct costs in accordance with the attached estimate, copies of corresponding invoices from Consultant, and identification of any major issues with proposed or implemented corrective actions. The Deliverable, including the Dam Safety Branch's approval letter, must be provided to the CWCB as part of project documentation prior to CWCB issue of payment.