

EXHIBIT A
SCOPE OF ENGINEERING SERVICES
WATER RECLAMATION FACILITY
DIGESTER MCC & UV/ADMIN TRANSFER SWITCH REPLACEMENT
PROJECT NO. 19-2485/CIP NO. 51216

PROJECT DESCRIPTION

HDR will provide engineering services for the design and construction of the Digester MCC & UV/Admin Transfer Switch Replacement project. A recently completed Arc Flash Analysis identified the UV/Admin Building main service switchgear as deficient and recommended replacement of the equipment. The Water Reclamation Facility (WRF) Facility Plan identified replacement of the Digester Facility Motor Control Center (MCC) as a short term priority. A summary of the proposed improvements include:

- Replacement of the Digester Complex MCC-4. The new MCC will be relocated to the adjacent oil storage building. A portion of the existing building may be walled off and HVAC equipment may be provided for heating, cooling, and air purification.
- Replacement of the UV/Admin Building Main Service Switchgear. The switchgear has limited reliability due to age and condition of the equipment. Replacement of the switchgear is necessary to provide a reliable source of power during utility outages and after utility power is restored. This equipment was also identified as deficient as part of an Arc Flash Analysis.

The Design Phase of the project will include the following:

1. Review of drawings and information available for the existing Digester Complex and UV/Admin Building electrical systems.
2. Collect data associated with the existing MCC-4 including wiring diagrams.
3. Development of probable construction cost estimates.
4. Periodic meetings with City staff members to discuss progress and design decisions.
5. Develop construction plans and specifications for a single bid that includes both the MCC and Transfer switch replacement.
6. Note: All meetings will be held at the Rapid City Water Reclamation Facility or the City/School Administration Center (CSAC) unless otherwise noted.

Following the Design Phase the project will be advanced through the bidding process. It is anticipated that the Bidding Phase of the project will include the following:

1. Provide Bid Documents to the City for City reproduction and distribution.
2. Provide Bidding Assistance during the bid phase.
3. All meetings will be held at the Rapid City Water Reclamation Facility or CSAC unless otherwise noted.

Monthly Progress Meetings. It is anticipated that there will be 2 on-site progress meetings during the Design and Bidding Phases.

Following the Bidding Phase HDR will provide Construction Phase services for a single construction project. Construction phase services will consist primarily of:

1. Process construction phase submittals. This includes material submittals and shop drawings, requests for information, change documents, and payment applications.
2. Conduct periodic construction coordination meetings.
3. Review contractor’s work to confirm adherence to the contract requirements and approved submittals.

BACKGROUND INFORMATION

Required background information that has not been previously collected by HDR includes a wiring diagram of MCC-4. All other background data for the project has been collected by HDR previously.

DESIGN CRITERIA

Design criteria for the projects shall include the current edition of the following items: City of Rapid City Draft Design Criteria manuals; City of Rapid City Standard Specifications, current edition; City of Rapid City Drafting Standards; South Dakota Department of Environmental Resources Standards; Ten States Standards as adopted and supplemented by SDDENR; the International Building Code; and Regional Wastewater Facilities supplemental design criteria. Conflicts between design criteria documents shall be resolved in favor of the more stringent requirement. Other documents and references may be proposed for use and requires written concurrence by the City Project Manager and may require “Exceptions” per City exception process.

PROJECT SCHEDULE

Notice to Proceed (NTP)	Anticipated on or before January 25, 2019
Final Design Phase:	
Final (100%) Review Submittal	February 18, 2019
Bid Document Submittal	February 25, 2019
Bidding Services:	
Advertise for Bids	February 26, 2019
Bid Opening	March 12, 2019
Construction Phase Services:	
Construction Notice to Proceed	April 9, 2019
Transfer Switch Milestone Completion	April 19, 2019
Final Completion Date	September 1, 2019

SCOPE OF SERVICES

TASK 1 – FINAL DESIGN SERVICES:

This task consists of the services necessary to take the project from beginning through the Final Design submittal stage including the following itemized services.

- 1.1 Project Management and Administration.
- 1.2 Kick-off Conference: The consultant shall meet with City staff to detail project concept and scope. The consultant shall prepare an agenda, take minutes, and distribute minutes.
- 1.3 Compile & Review Background Information: Compile information HDR has, request and collect additional information if necessary.

1.4 Prepare Design Drawings and Specifications.

- Plans documents shall adhere to current City of Rapid City guidelines as much as possible. Plan sheets shall be prepared utilizing the latest City of Rapid City Drafting Standards. City guidelines will be supplemented with HDR CADD Standards where appropriate to reflect items not addressed in the City standards, but required for this facility-type project.
- Provide complete plans and specifications for Digester MCC and UV/Admin Transfer Switch Replacement. Improvements will be bid as one project utilizing lump sum or schedule of value type bid item price bids.
- Improvements to be made as part of the Digester MCC replacement include:
 - Create a dedicated space in the existing oil storage building to house the new MCC equipment. The north end of the existing building may be walled off from the storage area.
 - Replacement of the existing MCC-4 in the new room created in the oil storage building. Reroute or extend existing circuits to the new MCC location.
 - Demolition of the existing MCC-4 and metal building that currently houses the MCC equipment.
- Improvements to be made to the UV/Admin Building Automatic Transfer Switch include:
 - Replacement of the existing Automatic Transfer Switch (ATS). Investigate and incorporate recommended improvements to reduce the incident energy (arc fault energy).
 - Move a disconnect from the transfer switch enclosure into a separate enclosure.
 - Provide the City with an equipment procurement specification for the ATS. The City will pre-purchase the ATS equipment and turn it over to the installing contractor. Equipment procurement by the City is required to meet the installation schedule requirements. The ATS shall be installed a minimum of 10 days prior to the start of disinfection season which begins on May 1st.
- Construction sequence will be considered throughout the design phase. Construction will be phased as necessary to keep existing facilities operational to the extent possible for the duration of construction.
- One design phase submittal review will be held for this project.
 - The final design review submittal will consist of a fully developed set of plans and specifications. In order to comply with the design schedule interim submittals will not be provided unless desired by the Engineer.
- Final bid documents will be developed and submitted based on the City's final review comments.
- Building permit and other permits costs are the Contractor's obligation.
- Design specifications. Provide detailed specifications supplementing the City of Rapid City Standard Specifications, as necessary. Typically project drawing specific issues should be indicated as a General Note on the drawings. Material types and material specific items would be included as a detailed specification.
- Design Cost Estimate. Prepare "Engineer's Estimate" of probable construction cost for the project. Cost Estimate will be submitted with final design review and the final bid documents.

1.5 QA-QC Review: Internal QA-QC review conducted by senior HDR staff.

1.6 Address City review comments as necessary. A review meeting or teleconference/video conference will be conducted for each review submittal (1). Meeting will held to reduce the City's review time and to comply with the schedule requirements.

1.7 Deliver the followings:

- Provide complete plans on CD compatible with current AutoCAD Release.

- Provide all topographic, control, and design points in the .dwg file and in tabular format, both on CD and on hard copy printout.
- Provide complete specifications and contract documents on CD in current version of Microsoft Word.
- Provide cost estimate on CD in current version of Microsoft Excel.
- An electronic (pdf) copy shall be provided with all submittals.

1.8 The Consultant shall provide plans and specifications to the Department of Environment and Natural Resources for approval, and shall address any comments or corrections required.

Project Submittals shall include:

- Meeting Minutes
- Final Design Review Submittal
- Issued for Bid Plans and Specifications

Submittals will be in electronic (pdf) format. HDR will submit three hardcopies for the final design review and issued for bid submittals. Reproduction of 22” x 34” drawings will be by a third party, printing costs will be billed directly to the City by the third party.

Any unused fee assigned to the above subtasks may be reallocated to other subtasks within Task 1 or may be reallocated to Tasks 2, 3, or 4.

TASK 2 - BIDDING SERVICES:

This task consists of all services necessary for the administration of the Bidding Services of the project, including the following itemized services:

- 2.1. Submit sufficient information to the City of Rapid City project manager for completion of City Advertising Authority form.
- 2.2. Provide three hardcopies to the City of Rapid City of plans/drawings at 22” x 34” scale, specifications, and contract documents for City production and distribution to bidders and the City of Rapid City. Provide electronic file in .pdf format. Review a test print of final plans and specifications prior to reproduction. The City will handle plan distribution and may use electronic distribution. HDR will provide documents conforming to requirements acceptable for this type of distribution.
- 2.3. Conduct a Pre-bid Conference. Record attendance and minutes. Distribute copies to all attendees.
- 2.4. Respond to bidders questions throughout the bidding services phase.
- 2.5. Issue addenda to the bid documents as required.
- 2.6. Review and certify the Bid Tab prepared by the City.

Task 2 Submittals shall include:

- Pre-bid Conference meeting minutes.

Any unused fee assigned to the above subtasks may be reallocated to other subtasks within Task 2 or may be reallocated to Tasks 3 or 4.

TASK 3 – BASIC CONSTRUCTION SERVICES:

This task consists of all services necessary for the administration of the Basic Construction Services for the Construction Phase, and may include the following itemized services.

- 3.1 Project Management and Administration consisting of all correspondence with the City and other project stakeholders as necessary.
- 3.2 Schedule, coordinate, and conduct a Pre-Construction Conference. Prepare agenda, record minutes, and distribute minutes.
- 3.3 Receive, log and coordinate reviews and responses to Contractor's requests for information/interpretations (RFI's).
- 3.4 Administer necessary or desirable changes in the Work utilizing systems to track changes from initiation through completion.
 - a. Coordinate the preparation and issuance of necessary or desirable changes in the form of Change Proposal Requests (CPR's).
 - b. Review costs presented on Change Proposal Requests by Contractor, and conduct negotiation of pricing as necessary.
 - c. Review all Change Proposal Request items and negotiated costs with Owner for Owner's approval.
 - d. Assemble approved Change Proposal Requests periodically into Change Orders. Include justification documentation with each Change Order.
 - e. Maintain current status log of all Change Proposal Requests and Change Orders and review at construction progress meetings.
 - f. Review as recorded drawings to verify changes in work are reflected as applicable.
 - g. Review pay requests to verify Change Order items are broken out and that payment is not made until work is complete.
- 3.5 Administer shop drawing and other submittal requirements to effect substantial compliance with the intent of the Contract requirements.
 - a. Review and approve the Contractor's shop drawing submittal schedule to ascertain that all significant submittals are accounted for.
 - b. Receive, log and conduct review of shop drawing submittals to confirm Contractor's compliance requirements.
 - c. Distribute for review and re-distribute reviewed shop drawings, operation and maintenance manuals and equipment data sheets, and other submittal information.
 - d. Establish and maintain a tracking system for submittals to provide review action status identification of each submittal as well as submittal distribution status.
 - e. Verify at Substantial Completion that all shop drawings on file are the final approved versions, and that all required operation and maintenance information and warranties have been received.
 - f. Receive, log and take appropriate action on miscellaneous informational submittals generated by the Contractor during construction.
- 3.6 Prepare "As-Recorded" plans and specifications. "As-Recorded" plans and specifications shall be submitted as a hard copy and on CD compatible with current AutoCAD Release. Submit to Engineering Services within 30 days of project completion.

Any unused fee assigned to the above subtasks may be reallocated to other subtasks within Task 3 or may be reallocated to Task 4.

TASK 4 – EXPANDED CONSTRUCTION SERVICES:

This task consists of selected Expanded Construction Phase services for the administration of the Construction Phase, and includes the following itemized services.

- 4.1 Schedule, coordinate, and conduct periodic progress meetings. Prepare agenda, record minutes, and distribute to all attendees. A total of three meetings is anticipated.
- 4.2 Provide limited on-site observation to verify that the methods and materials used by the contractor meet the intent of the plans and specifications. The estimated man-hours and fee was based on a total of 8 hours of on-site observation time. Prepare a record of observed construction activities.
- 4.3 Administer payment applications. Receive and review draft application for payment prepared by the Contractor and provide recommendation as to approval.
- 4.4 Achieve an orderly Project Closeout of the construction contract.
 - a. Prepare and submit a project completion punch list to the Contractor and Engineering Services and oversee its completion.
 - b. Verify submittal of all required documents.
 - c. Review Contractor Record Drawings.
 - d. Administer Final Payment. Finalize all project costs and determine the final adjusted amounts for construction.

Any unused fee assigned to the above subtasks may be reallocated to other subtasks within Task 4 or may be reallocated to Task 3.